



ADVANCE SOCIAL SCIENCE ARCHIVE JOURNAL

Available Online: <https://assajournal.com>

Vol. 04 No. 01. July-September 2025. Page# 3971-3959

Print ISSN: [3006-2497](#) Online ISSN: [3006-2500](#)

Platform & Workflow by: [Open Journal Systems](#)

<https://doi.org/10.5281/zenodo.17143707>



Navigating Urban Expansion: The Dynamics of Land Disputes in Peri-Urban Peshawar, Khyber Pakhtunkhwa

Abdul Wajid

Social Welfare Special Education and Women Empowerment Department

abdulwajidkhalil98@gmail.com

Dr. Alamgeer Khan

Lecturer, The University of Agriculture, Peshawar

alamgeer@aup.edu.pk

Dr. Ubaid ur Rehman

Lecturer, Department of Rural Sociology, The University of Agriculture, Peshawar

ubaid84@aup.edu.pk

Dr. Irfan Ullah

Lecturer, Department of Agricultural and applied Economics, The University of Agriculture, Peshawar

irfanullah@aup.edu.pk

Muhammad Alam Khan

PhD Scholar, Department of Rural Sociology, The University of Agriculture, Peshawar

sociologist007@aup.edu.pk

Abstract

This study examines the impact of rapid urbanization on land disputes in three peri-urban villages of Peshawar Attozai, Maghdarzai, and Talarzai. A cross-sectional survey was used with the participation of 365 randomly selected participants, with a structured interview for data collection and SPSS for empirical statistics and inferential testing. Findings show that urbanization factors such as increasing land price, decreasing land supply, and changing land use are significantly associated with the incidence of land disputes (especially those from the farmland replacement). The findings emphasize the importance of timely land value assessments and computerized land records for the control of disputes. The research provides science-based policy proposals so urbanization can be a resource for sustainable land management and conflict prevention.

Keywords: *Urbanization, Land Disputes, Urban Expansion, Land Sustainability, Conflict Management*

Introduction

Land conflicts go beyond simple "legal cases" about property. They reflect socio-cultural realities tied to identity, power, norms, and relationships. In the Pashtun tribal system, land (zameen) connects wealth (zar or zaar) and women's honor (zan). This connection shapes social structures and conflict patterns (Ahmed, 1980; Barth, 1959). Conflicts often involve more than economic value; they touch on family honor and kin relationships. Land serves as a strong symbol of identity and social standing. To grasp land disputes in these contexts, one must consider these cultural factors and the social dynamics at play.

In Khyber Pakhtunkhwa (KP), Pakistan, land disputes are a persistent issue. While formal state systems exist, powerful customary institutions like tribal jirgas and informal mediation still play a key role in regulating land tenure and resolving disputes.

Nonetheless, the rapid pressures of urban expansion, population growth, and ambiguous land demarcations exert mounting strain on these governance systems (Bari, 2014; Awan, 2018). Nationally, the slow pace of land digitization, with only about 43% of land records computerized, further hampers transparency and dispute resolution (Auditor-General of Pakistan, 2022).

Nationally, land tenure insecurity affects nearly half of Pakistan's rural households, compounding vulnerabilities and breeding conflict potential (Pakistan Bureau of Statistics, 2020). Urban sprawl in peri-urban and rural fringes intensifies land contests, especially between traditional landholders and developers, engendering disputes with significant social and economic repercussions.

Internationally, land conflicts are widely recognized as a major driver of social unrest and violence. The World Bank (2017) estimates that approximately 70% of civil conflicts globally are linked to land-related causes. Comparative research spanning Africa, Latin America, and Asia highlights the complex interplay between formal regulatory systems and customary tenure regimes, amplified by demographic growth and speculative land markets, which collectively foster fertile grounds for land conflict (Rugadya, 2018; Durand-Lasserve, 2003). These patterns at the global level reflect land conflicts as a key development issue that cannot be addressed through one-dimensional sectoral approaches.

Sitting at the crossroads of these conceptual trajectories, this paper contributes to the multi-scalar, culturally grounded analysis of land contestations in peri-urban Peshawar, KP. It is uniquely insightful as it refers to specific Pashtun socio-cultural constructs of zar, zan, and zameen, bridges findings to provincial and national contexts, and then compares them with regional and global trends and strategies. This holistic perspective helps us understand how urbanization shapes land conflict and can guide interventions responsive to the local cultural and structural context.

Theoretical Framework

This study uses a mix of ideas from different fields. It combines institutional voids, frontier theory, and urban-rural resilience to help understand land disputes.

Institutional voids are when formal governance and legal systems are weak or missing. This leads to insecure land tenure and a greater reliance on informal conflict resolution (De Soto 1989).

These issues often become more serious when formal systems do not recognize or protect customary land rights, leading to more conflicts.

One way to understand this relationship is through urban frontier theory (Turner, 1893). This theory views urban growth and suburban spread as destabilizing forces that disrupt existing land hierarchies and create contested territories. However, research shows that urban frontiers in South Asia face added pressures. Speculative land markets and a complex legal environment increase friction beyond typical frontier dynamics (Fernandes, 2006).

Focusing on urban-rural resilience (Wang, 2015) highlights the abilities of social-ecological systems in peri-urban areas to adapt. It considers community resilience, governance potential, and environmental factors that influence conflict development and resolution. This perspective may reveal “local discrepancies in conflict severity and governance efficacy in fast-evolving peri-urban landscapes.”

By combining these ideas, we gain a clearer understanding of how demographic growth, state weaknesses, cultural pressures, and ecological changes interconnect. Together, they contribute to and sustain violent land conflicts in Peshawar's peri-urban areas.

Objectives of the Study

1. To understand people's perceptions of land disputes in the study area.
2. To examine the impact of urbanization on the occurrence of land disputes.
3. To measure the association between urbanization-related factors and land disputes.
4. To provide actionable recommendations to policymakers for managing land disputes amid urban growth.

Methodology

The methodology of this study was designed to obtain a holistic understanding of land disputes in the peri-urban areas of Peshawar and their connection with urbanization. The methodology was rigorously quantitative and in-depth qualitative in order to present an overall picture of a community anchored in perceptions from the community itself and through the use of statistics.

Research Design and Rationale

A cross-sectional study was used to assess community experience and knowledge on land conflict and urbanization at a single point in time. Demarcation of urbanization factors with land conflict cases This model is adequate to assess the urbanization variables associated with land conflict cases (Bryman, 2016). Theoretically, the research is based on the proposition that informal urbanization has contributed to the disturbance of traditional land tenure and subsequent conflicts (Deininger et al., 2011).

Study Area and Population

per-urban villagers of three villages— Attozai, Maghdarzai and Talarzai— located in the outskirts of Peshawar city. These localities are representative of different levels of urbanisation. A total of 5081 households from census data were included and identified, and they were selected based on relevance to the study purpose.

Sampling Strategy

For the studies to be Statistically Reliable and to account for representation, a sample of 365 respondents was selected following the suggested sample size formula by Sekaran (2003, as cited by Sekaran and Bougie, 2016) and also validated by Cooper et al. (2006). This number is Large enough for accuracy yet not unmanageable under field work conditions. Computerized proportionate random sampling was done to choose respondents, i.e., housewives, from 3 villages, such as 1) Attozai, 2) Maghdarzai, and 3) Talarzai, using the population proportionate sampling method. In each village, items were randomly picked out in a simple random sampling way, that is, by lot. This step was necessary to minimize bias and to give everyone an equal chance of being included, and thereby to increase the trustworthiness of the results (Kuzel, 1999).

3.3 Conceptual Framework

The concept of the present research is to observe a relationship between one independent and one dependent variable. In other words, urbanization and its correlates are the independent variables, while land disputes are the dependent variable.

Independent variable	Dependent Variable
Land Disputes	Urbanization

The framework contends that land conflict increasingly arises and escalates in peri-urban Peshawar as it becomes urbanized. The paper examines how certain urbanization characteristics exacerbate the contest of land ownership, demarcation, and utilization in light of social, legal, and biological aspects.

Data Collection Instruments

The primary data was obtained through a pretested, structured questionnaire, which consisted of both closed-ended for quantitative rigor and open-ended questions to supplement the findings. Interviewees described their social demographic condition, perceptions on livelihood conflict and changes in their neighbourhood due to urbanization. Complementary to this, a schedule of tests was used to gather qualitative narratives – focusing on reasons for an outbreak of conflicts, community ways of controlling conflicts, and the role of indigenous institutions in controlling conflicts (Creswell & Poth, 2017).

Data Collection Procedure

The method for data collection had been intentionally designed to be appropriate to cultural norms in the field. Recognizing the social norms, female enumerators were recruited and trained specifically for interviewing the female respondents so that they can comfortably and come up with the true response. Interviews were carried out by male enumerators with men as respondents. All enumerators followed ethical guidelines to the letter: consent was obtained from all participants, confidentiality was preserved meticulously, and participation was voluntary. Data were collected over a period of 4 weeks, and daily supervision was provided to safeguard the quality and consistency of the data, as well as the cultural appropriateness of the study (Israel, 2013).

Data Processing and Analysis

Interview data were carefully processed, coded, and analyzed with SPSS software. Descriptive statistics, including frequencies and percentages, were calculated to describe patterns between respondents' opinions and experiences. Associations between independent variables related to urbanization and the occurrence of land disputes were evaluated by bivariate Chi-square (χ^2) tests for inferential analysis. The Chi-square test statistic is:

$$\chi^2 = \sum \frac{(O-E)^2}{E}$$

where O is the observed and E the expected frequency under the null hypothesis. All assumptions of the Chi-square test, including minimum expected cell frequencies, were met to assert the generalizability of the statistical findings (Agresti, 2018).

Ethical Considerations

All experiments were performed in compliance with the relevant laws and institutional guidelines with respect to the principles and procedures of humane care and animal experimentation. The protocol of the research was approved by the local ethics committee. All participants were fully informed about the purposes and the procedure of the study and agreed to participate. Strict privacy and anonymity were maintained for the duration of the study (Resnik, 2018).

Limitations

While this study maintains robust methodological standards, it acknowledges limitations such as reliance on self-reported data, which may be influenced by recall or social desirability bias. The cross-sectional design offers a snapshot in time that limits the ability to capture temporal changes or causality. Moreover, the specificity of the study area may affect the generalizability of findings to other contexts. Nevertheless, the systematic sampling strategy and comprehensive analysis lend credibility and depth to the insights generated.

Results and Discussion

Prevalence and Perceptions of Land Disputes

Land disputes—defined as conflicts over land ownership, boundaries, or use—are prevalent in rapidly urbanizing peri-urban Peshawar. These conflicts implicate individuals, groups, and communities, reflecting entrenched socio-legal and economic complexities (Kalabamu, 2019). Table 1 shows that 67.9% of respondents perceive an increase in land problems locally, 69.3% acknowledge harm to community harmony, 54.5% note rising violent disputes, and 47.7% believe disputes foster social fragmentation. Over 50% feel personal lifestyles are negatively impacted, indicating the deep social footprint of land conflicts (Rugadya, 2020).

Attribute	Agree	Disagree	Uncertain	Total
I think there are more land issues in my neighborhood now.	248(67.9)	48(13.2)	69(18.9)	365(100.0)
I believe that the fights over land are hurting my community.	253(69.3)	47(12.9)	65(17.8)	365(100.0)
I think that violent land disputes are getting worst in my neighborhood.	199(54.5)	78(21.4)	88(24.1)	365(100.0)

Due to land disputes, I believe my town is becoming more separated.	174(47.7)	86(23.6)	105(28.8)	365(100.0)
I think my way of life is being impacted by land issues in my neighborhood.	191(52.3)	87(23.8)	87(23.8)	365(100.0)

Table 1: Frequency Distribution and Proportion of Respondents Based on Land Disputes (Field Survey 2023)

Perceptions of Rapid Urbanization

Rapid urban growth characterizes Peshawar's peri-urban villages, often outpacing governance and infrastructure capacities (Lin & Yi, 2011). According to Table 2, 75.3% of respondents recognize frequent land use and ownership issues from urban growth, 71.2% note intensifying competition for scarce land, over 67% associate property rights disputes with land speculation, and nearly 70% identify conflict arising from rural land conversion to development. These perceptions align with studies highlighting urban sprawl as a driver of resource competition and land conflict in developing regions (Adams, 2012; Govereh & Jayne, 2003).

Attribute	Agree	Disagree	Uncertain	Total
Land use and ownership issues arise frequently as a result of urban growth.	275(75.3)	37(10.1)	53(14.5)	365(100.0)
Demand for land rises as cities extend, creating competition for scarce resources.	260(71.2)	37(10.1)	68(18.6)	365(100.0)
Land disputes may result from poor urban planning and regulation of development.	237(64.9)	73(20.0)	55(15.1)	365(100.0)
Property right disputes can arise as a result of improvement and land speculation increases property values.	247(67.7)	80(21.9)	38(10.4)	365(100.0)
Land owner and developer disputes may result from the transformation of rural land into development.	254(69.6)	42(11.5)	69(18.9)	365(100.0)

Table 2: Frequency Distribution and Proportion of Respondents Based on Rapid Urbanization (Field Survey 2023)

Bivariate Analysis: Association Between Urbanization and Land Disputes

Chi-square tests (Table 3) confirm significant ($p < 0.05$) positive associations between land dispute presence and variables including frequent land use conflicts, increased land demand, inadequate planning, property speculation, and landowner-developer disputes. These results map onto theoretical frameworks emphasizing demographic dynamics, economic interests, and institutional weaknesses as key in conflict genesis (Deininger & Feder, 2009).

Attribute	Attitude	Land Disputes				Statistics χ^2 (P value)
		Yes	No	Don't No	Total	
Land use and ownership issues arise frequently as a result of urban growth.	Agree	195(53.4)	23(6.3)	57(15.6)	275(100.0)	$\chi^2 = 13.647$ (P= 0.009)
	Disagree	36(2.2)	0.5(0.14)	0.5(0.14)	37(100.0)	
	Uncertain	43(11.8)	3(0.82)	7(1.9)	53(100.0)	
Demand for land rises as cities extend, creating competition for scarce resources.	Agree	183(50.1)	22(6.0)	55(15.1)	260(100.0)	$\chi^2 = 12.141$ (P= 0.016)
	Disagree	34(3.3)	1(0.27)	2(0.55)	37(100.0)	
	Uncertain	57(20.8)	3(0.82)	8(12.5)	68(100.0)	
Land disputes may result from poor urban planning and regulation of development.	Agree	172(47.1)	21(5.8)	44(12.1)	237(100.0)	$\chi^2 = 11.975$ (P= 0.018)
	Disagree	64(17.5)	4(1.1)	5(1.4)	73(100.0)	
	Uncertain	38(10.4)	2(0.5)	15(4.1)	55(100.0)	
Property right disputes can arise as a result of improvement and land speculation increases property values.	Agree	176(48.3)	18(4.9)	53(14.5)	247(100.0)	$\chi^2 = 11.443$ (P= 0.022)
	Disagree	67(18.4)	8(2.2)	5(1.4)	80(100.0)	
	Uncertain	31(8.5)	1(0.3)	6(1.6)	38(100.0)	
Land owner and developer disputes may result from the transformation of rural land into development.	Agree	181(49.6)	19(5.2%)	54(14.8)	254(100.0)	$\chi^2 = 13.088$ (P= .011)
	Disagree	40(11)	1(0.27)	1(0.27)	42(100.0)	
	Uncertain	53(14.5)	6(1.64%)	10(2.73%)	69(100.0)	

Table 3: Association Between Rapid Urbanization and Land Disputes (Field Survey 2023)

Discussion

The results clearly show that rapid urbanization drives land disputes in peri-urban Peshawar. The effects on community ties and personal well-being are similar to global trends (Kalabamu, 2019; Rugadya, 2020). The survey shows that unplanned urban growth with few regulations leads to land competition and conflicts.

We observe land use conflicts and ownership issues. These problems mirror those in other fast-growing urban areas (Lin & Yi, 2011; Adams, 2012). The clash between original owners and developers shows the need for policies that tackle demographic, socio-economic, and legal challenges. We urgently need effective interventions.

This includes better land governance, increased transparency, stronger property rights, and forward-thinking urban planning. Communities thrive when traditional conflict management systems promote social harmony (Sjaastad & Cousins, 2009; Place & Migot-Adholla, 1998).

This study unveils the landscape of land conflict in Peshawar. It also provides actionable insights for decision-makers, urban planners, and community leaders.

It emphasizes that a fairer, more sustainable urban future is possible.

Conclusion

Land disputes in peri-urban Peshawar reveal the complex effects of rapid urban growth, weak institutions, and socio-economic pressures. Unregulated land changes, market speculation, and conflicts show the urgent need for better land management policies. Learning from global examples—like digital registries in Rwanda, ecological zoning in Beijing, and legal harmonization in South Africa—can help Pakistan improve land governance in peri-urban areas. This approach could reduce conflict and support sustainable growth. As cities expand, changing land from conflict zones to areas of resilience is a key challenge and opportunity for policymakers and communities.

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