



An Analysis of Urban Sprawl in Pakistan: Causes, Consequences and Policies Analysis

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Abstract: Due to uncontrolled and disorganised urban planning sprawl, big cities are facing intense pressure towards their boundaries, leading to urban sprawl. The main cities in Pakistan are highly urbanised cities such as Karachi, Lahore, and Islamabad. The main objective of this review paper is to comprehensively analyse the major causes and consequences of urban sprawl and provide valuable insights to resolve this issue in the context of Pakistan. A systematic approach was used to select ten relevant studies based on defined inclusion and exclusion criteria. This study is exploratory and causal-comparative, with an extensive review of literature and scholarly investigations using secondary data. Key findings identified that migration, development of pre-urban areas around the outer rim of industrial units, improved infrastructure and population growth are significant reasons behind urban sprawl in Pakistan, resulting in loss of agricultural lands, increase in commuting costs, poverty, unemployment, climate issues, etc. Furthermore, policy-making should be based on province and city characterises and apply suitable solutions to prevent and control urban sprawl. Furthermore, the agriculture department should join with urban development to initiate awareness against urban sprawl issues and save the conversion of fertile agricultural land.

Keywords: Urban Sprawl, Urban Development, Pakistan, Internal Migration

1. Introduction

In the last few decades, cities have defined specific boundaries; however, they have missed their realms by disproportionate growth today (Hamidi *et al.*, 2015). The “Urban Sprawl” concept defines more growth than the traditional and differentiates it from urban growth (Holcombe and Williams, 2010). If more urban growth is expected, it puts intense pressure on the city’s boundaries and causes the main problem of urban

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sprawl. Commonly, it is considered as the unplanned and uncontrolled growth of the inner city towards its edge resulted in pressure on the development around the boundary (Seto, Guneralp, and Hutyrá, 2012; d'Amour *et al.*, 2017; Ewing, Pendall, and Chen, 2003; Sudhira, *et al.*, 2007; Verbeek, Boussauw, and Pitman, 2014).

Angel (2007) defines sprawl as “the formation of extensive and infinite borders of metropolitan areas”. Ewing *et al.* (2003) define urban sprawl as “low-density development with segregation of land uses, such as residential, commercial and office use, which lacks dynamic activity centres and gives people few options to choose their access ways”. Maier *et al.* (2006) state that “urban sprawl is a type of land use in an urban area with low density, continuity, concentration, clustering, centrality, nuclearity, mixed-use and proximity”. Zebardast and Habibi (2009) define urban sprawl as “expanding the city and its suburbs on rural and agricultural land”. Low density is one of the leading indicators of this type of urban expansion. Residents of sprawled neighbourhoods tend to avoid pollution and prefer to live in a low-density region (Zebardast and Habibi, 2009). Urban planners have studied urban sprawl and explored this phenomenon from a “multidisciplinary perspective”. Urban sprawl is considered as It is understood that urban sprawl is not only “a physical phenomenon of the dispersion of buildings and expansion of the space occupied by the city that encompasses different disciplines: geography, urban planning, eco-friendly exploration, economics, sociology and policy science” (Torrens, 2008). According to Galster *et al.* (2001), “a pattern of land-use in an urban area that exhibits low levels of some combination of eight district dimensions: density, continuity, concentration, clustering, centrality, nuclearity, mixed-used and proximity”. Similarly, Squires (2000), defined that “pattern of urban and metropolitan growth that reflects low density, automobiles-dependent, exclusionary new development of the fringe of settled areas often surrounding a deteriorating city is called urban sprawl”. On the other hand Burchell (2003) also defined the phenomenon of urban sprawl as “low-density occupation, leapfrog development characterised by unlimited expanses”. It has some characteristics of dispersion of urban land, which affected rural areas and fit chiefly due to low population density that expanded outside of joined city centres.

It is said that urban sprawl is highly related to urban development because urban growth is one of the processes of urban development irrespective of urbanisation; however, the features of its occurrence are standard enough, causing its implications to be so widespread (Sajjad and Iqbal 2012). According to Barnes *et al.* (2001), irrespective of urban development, urban sprawl is a response to frequent incomprehensible sets of “economic, social, political, and physical forces”. These forces are major “municipal

fragmentation”, “the patterns of infrastructure investments”, and “subsidisation of infrastructure from cities”. Several studies have also highlighted that it is very crucial to explore its numerous dimensions in the broader contexts in order to control and prevent its adverse effects (Sudhira *et al.*, 2004; Arribas-Bel, Nijkamp, and Scholten, 2011; Hamidi and Ewing, 2014; Nechyba, and Walsh, 2004; Terzi and Kaya, 2008). In developing countries, cities are experiencing urban sprawl due to rapid urbanisation and horizontal urban expansion (Liu *et al.*, 2018). It is very challenging for sustainable urban land usage (Hennig *et al.*, 2015). Hence, it emphasises the necessity and significance of addressing sprawl in Pakistani cities, notably Karachi. There is a need to understand that urban sprawl is not considered a level of development. However, it threatens the presence of natural resources through extensive land use in developing countries’ major cities (Terzi and Bolen, 2009). On the other hand, few researchers have also highlighted the positive impact of urban sprawl in terms of the provision of quality and affordable housing, or provision of housing for racial minorities, observance of the free economy, market rules and consumer preferences (Nechyba and Walsh, 2004; Patacchini *et al.*, 2009; Borgart, 2006), however; the majority of urban development policymakers and authorities have pointed out the negative impact of urban sprawl and suggested solutions to deal with this issue (Wassmer, 2008; Squires, 2002; Habibi, and Asadi, 2011).

1.1. Characteristics of Urban Sprawl

Several studies have discussed the major characteristics of urban sprawl. For instance, the characteristics of urban sprawl have been explained by Gordon and Richardson (2001) regarding inequality, rising housing costs, environmental degradation, long-distance, agricultural loss, health, and mental problems. Among those characteristics, Ewing *et al.* (2002) highlighted that urban sprawl pushed more distance, increased the number of cars, polluted the air, and increased traffic risk. Carbonell and Yaro (2005) have highlighted the proximity of perimeter roads, a phenomenon observed in small cities that impacted both rich and poor income populations. Low density has also been defined as a major characteristic by Aurand (2007), which predominantly explains living in buildings far from commercial areas such as shopping centres or markets.

Moreover, the flow of boundaries of urban expansion is also a major characteristic of urban sprawl, a phenomenon of extension of per—urban areas towards their outside boundaries (Ojima and Hogan, 2008). Slaev and Nikivorof (2013) have also described the major characteristics of urban sprawl in terms of low density in new expansion areas, sparse and scattered forms with incoherence inclinations, absence of modifications in

the use of urban land and activity, growth of city centres, public service and trade centres. Furthermore, they also highlighted the major element: the lack of balance between trends of markets and policies that permit market participation for determining land use in suburban areas; however, it ignores the context of public interests and sustainability aspects. Furthermore, Polidoro *et al.* (2012) have also explained some features of urban sprawl in terms of land use, poor accessibility between nearby land use, lack of operational open places, presence of brownfields in unrestrained urban areas, high dependency on automobiles, weak public transportation, land conversion of agricultural land, condensed compact settlement procedures, increasing burden of tax and high cost in facilitating public service. Rubiera-Morollón and Garrido-Yserte (2020), low density, unrestricted outer expansion, spatial segregation of various uses of land, leapfrog development decentralised holding of land, advantages of transports, destruction of land-use authorities, and differences in local administration fiscal capability.

1.2. Issue of Urban Sprawl in Pakistan

The major factors behind urbanisation in Pakistan are the proximity of location due to the seaport, employment opportunities, financial hub, industrial base, and adequate education and health facilities. Without proper urban planning or strategy, the cities are experiencing expansion towards city boundaries, which leads to challenges of informal and unauthorised settlement, housing shortage, illegally designed residential and commercial areas, excessive pressure on the availability of services, issues of sanitation, pollution, lack of access to water, over-crowding and other social problems. Due to institutional inefficiency and governance failure, rural lands have also been transformed into industrial, commercial and residential areas without implementing any urban planning scheme in Pakistan. Since 2000, the extensive conversion of rural lands for urban development has resulted in the sprawl phenomenon, leading to the loss of agricultural lands, rising commuting costs and flooding. Furthermore, ineffective institutions, lack of vision and dynamism of the leadership and political intervention have also weakened the institution's capacity for authorises.

Furthermore, the deteriorating socio-economic issues, stability conditions, and deprived living criteria in rural sub-urbs have also resulted in disorganised urbanisation attached to insufficient infrastructure, producing economic disparities (Hasan, 2016). The major causes of urban sprawl in Pakistan are internal migration, real estate business, conversion of agricultural land, to develop of housing colonies and commercial buildings, development of infrastructure and population growth (Farah *et al.*, 2012; He

et al., 2016; Ali Siyal *et al.*, 2018; Hasan, 2010; Khan *et al.*, 2014; Peerzado *et al.*, 2018; Farah *et al.*, 2016; Shuaib *et al.*, 2018). The process of urbanisation pushed agricultural labour to migrate from agricultural to manufacturing employment, increasing the demand for essential services (Farah *et al.*, 2012). Hence, the increasing urban population requires strong institutional governance to address the issues through rules and regulations (Glaeser *et al.*, 2004; Rodrik, Subramanian, and Trebbi, 2004). It has also affected the agricultural sector due to a rapid decline in arable land, leading to the issue of food security (Yousaf *et al.*, 2018). Thus, the rapid urban sprawl has challenged the “urban development authorities” and the “agricultural extension department” to convince real estate developers about agricultural sustainability and food security. This study explores the theoretical literature related to the causes, consequences, and policies of urban sprawl in Pakistan. Although urban sprawl is a highly discussed topic, more studies need to explore its causes, consequences, and policies focusing on Pakistani cities. Hence, this study will fill the gap in the literature related to urban sprawl in the context of the largest cities in Pakistan. This study has answered the following research questions:

- What are the major causes and consequences/ challenges of urban sprawl in Pakistan’s major cities?
- What are the major effective policies to control and prevent urban sprawl in Pakistan’s major cities?

2. Research Methodology

According to Higgins and Green (2011), “a systematic review is a literature review that critically evaluates and integrates the available research findings of sufficient quality concerning a specific research question or subject, with the ultimate aim of providing informative and evidence-based insights” In order to avoid the apparent feebleness of narrative review, this study has used a systematic review which is based on five stages that have been proposed by Denyer and Tranfield (2009).

2.1. Formulation of Question

Given the fragmentation related to urban sprawl studies, this study aims to explore the major causes, consequences, and policies in the context of Pakistani cities using a systematic literature review (SLR). Hence, the review questions are “What are the major causes and consequences of urban sprawl in Pakistan?” and “What are the foremost effective policies to control and prevent urban sprawl in the context of Pakistan?”

2.2. Screening and Searching the Studies

After the formulation of the research question, online sources have been used to find the relevant studies using electronic databases such as “Research Gate”, “Google Scholar”, “Emerald”, and “Wiley Online”. In order to find the most relevant literature related to “urban sprawl”, “causes or factors of Urban sprawl”, “challenges of Urban Sprawl”, etc. Although urban sprawl is relatively new in the context of national studies, it lacks distinguished research areas. In this study, articles were published after 2011. The selected studies were six from Google Scholar, three from Research Gate, and one from Emerald.

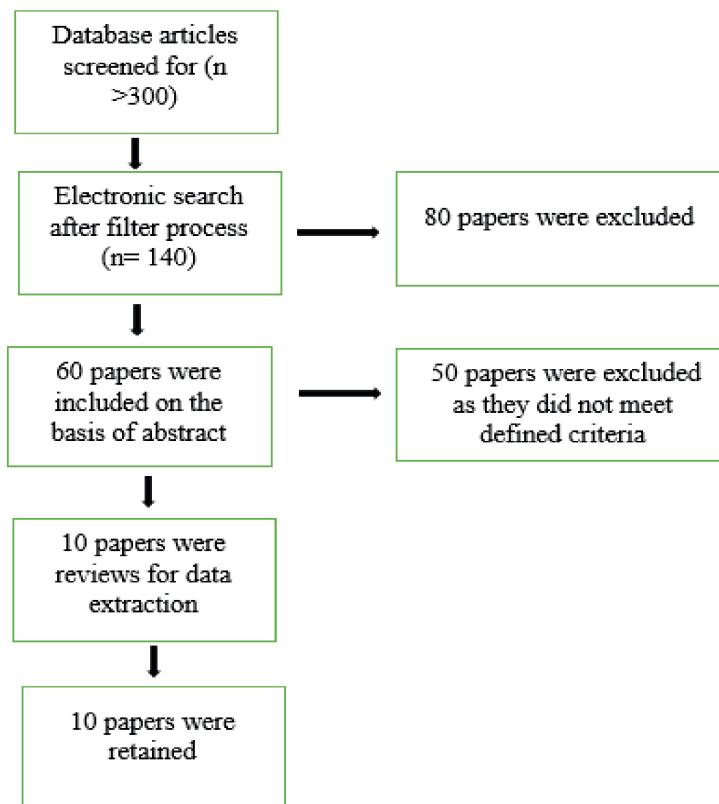


Figure 1: *Screening Process*

Figure 1 provides the screening process for searching for the most relevant articles for the study. Initial more than 300 papers were explored using keywords. Based on the title and abstracts related to the subject matter, 140 papers were selected. In order to take the most relevant studies, a duplicate removal process and an abstract-based screening

of the review of findings were performed, and 60 papers were excluded. Fifty articles were excluded during this process if they did not fulfil inclusion criteria. The major reasons for excluding the articles are that these articles needed to reflect and address the research subject, the full text was not available in the English language, or articles addressed urban sprawl that were not related to the study's objective. Furthermore, ten studies were finalised based on full-text screening of studies.

2.3. Inclusion and Exclusion Criteria

At the initial stage, the studies' titles, abstracts, summaries, and full text were reviewed to select relevant materials. In the next step, inclusion and exclusion criteria were determined for the screening process of articles. All studies that explored the concepts of urban sprawl in the context of developing countries have been taken based on inclusion criteria. The criteria were linked to the research questions study's discussion, concepts and definition of urban sprawl. On the other hand, all studies on urban sprawl in Pakistan and Karachi have been taken. Several studies that have also been related to exploring major factors and challenges have also been considered in the literature review. The studies based on GIS and remote sensing have yet to be taken due to the main objectives, which mainly focus on exploring the causes and consequences of urban sprawl. Studies related to urbanisation or urban growth have also yet to be considered. Furthermore, all studies published after 2000 have been considered, whereas screening and search of articles were limited to scholarly, peer-reviewed journals in English.

2.4. Analysis and Synthesis

The particular literature has been examined in a thematic way using two reviewers who revised a large sample of the studies' earlier discussion of findings and separated studies. The descriptive analysis part was focused on categorising the studies by years and journals and the critical findings of each study. While using the results, thematic analysis was used to analyse the information and dataset related to the cause and consequences of urban sprawl and strategies to deal with the concern of urban sprawl in Pakistan.

3. Analysis and Discussion

3.1. Overview of Selected Studies

This section analysed ten studies regarding publication ears, journals, and an overview of the selected study. All selected studies have been published since 2011. Two papers

were published in 2013 and 2020, whereas one was published in 2016, 2017, 2018 and 2019, respectively. With time, publication is expected to rise in the context of exploring causes, consequences, and policies in Pakistan.

Table 1: Years of Publication

<i>Years of Publication</i>	<i>Number of Articles</i>
2011	1
2013	2
2015	1
2016	1
2017	1
2018	1
2019	1
2020	2
Total	Ten (10)

Source: Compiled by Author

These selected studies were published in different journals, such as “*The International Journal of Agricultural Extension*”, “*Procedia Engineering*”, “*Sindh University Research Journal-SURJ*”, “*Sci. Int*”, “*and Environment and Urbanisation*”, “*Journal of the Saudi Society of Agricultural Sciences*”, “*Urban Science, Pakistan. J Civil Environ Eng*”, “*Journal of Geography and Regional Planning*”, whereas; one paper was published as “*working paper for the International Growth Centre, London School of Economics, London UK*”. All journals are related to the subject matter linked to the exploration of urban sprawl in Pakistan and the major causes and consequences. Furthermore, these journals have also covered several other dimensions of urban sprawl that have significantly contributed to literature for further analysis.

In this study, ten studies have been selected for literature review analysis; a brief overview of the selected studies has been presented regarding the Author’s name, objective, research method and data collection and analysis techniques.

Table 2: Overview of the Selected Studies

	<i>Author</i>	<i>Objective</i>	<i>Research method</i>	<i>Data collection and analysis</i>	<i>Key Findings</i>
1	Qureshi (2013)	The study aims to highlight the issues of urbanisation	Qualitative	Literature analysis through Secondary source	Authorities faced severe challenges in implementing city development plans due to the rejection of particular governmental policies by some ethnic groups.

	<i>Author</i>	<i>Objective</i>	<i>Research method</i>	<i>Data collection and analysis</i>	<i>Key Findings</i>
2	Habibia and Asadi (2011)	This study explores urban sprawl's characteristics, causes, and consequences while exploring suitable policies to address this issue.	Qualitative	Literature analysis through Secondary source	There are major causes of urban sprawl, such as population and income growth, land price, access to suitable and low-cost housing, infrastructure, and transportation.
3	Hasan (2015)	This study described a complicated process by which land is made available for housing, industrial and commercial purposes.	Qualitative	Literature analysis through Secondary source	Findings emphasised to implement policies for better use of government-owned land and political agreements to address security issues that led to investment loss and for the political effectiveness of big cities' civil society organisations
4	Akhtar and Dhanani (2013)	This study explored the phenomenon of urban sprawl in Karachi.	Quantitative	Primary data through the stratified random method from 1000 respondents	Ineffective control of conversion laws or rural land into urban land, corruption, malpractices of government officials, and political mafias are some severe causes that accelerated sprawling in big cities like Karachi
5	Mangi <i>et al.</i> (2019)	This study aims to comparatively investigate the trend of urban development of two metropolitan cities, Beijing and Karachi, in the context of urban sustainability.	Qualitative	Secondary source	Through comparative analysis between two cities, such as Beijing and Karachi, it has been found that Karachi is worse in terms of socio-economic and environmental development. This city needs significant development to achieve the high level of the "Urban Sustainability Index."
6	Hussain (2016)	The study aims to analyse the growing trend of urban sprawl and its effect on urban infrastructure and the economic divide in the city	Qualitative	Literature analysis through Secondary source	The findings highlighted that the concentration of people might lead to a mess due to inadequate planned policies. The incessant arrival of people will increase the demand and supply gap related to the provision of infrastructure, health and education facilities and other essential services
7	Ahmed <i>et al.</i> (2020)	The study aims to review the studies to explore the existing condition of urban sprawl in Pakistan.	Qualitative	Literature analysis through Secondary source	Findings show that major reasons for rapid urban sprawl in Pakistan include migration, expansion of peri-urban areas around the outer border of cities, industrial zone development, population growth and improved infrastructure.

	<i>Author</i>	<i>Objective</i>	<i>Research method</i>	<i>Data collection and analysis</i>	<i>Key Findings</i>
8	Peerzada <i>et al.</i> , (2018)	The objective is to find the nexus between urbanisation and agricultural land conversion in Hyderabad, Pakistan.	Quantitative	Primary sources through open-ended and close-ended questionnaires from 192 respondents and secondary sources from the Hyderabad Development Authority (HDA)	Urban sprawl has resulted in agricultural land conversion into urban land, raising several issues related to economic, social, and environmental instability. It has also increased the scarcity of resources because more individuals now demand more things.
9	Abdul and Yu (2020)	The study aims to identify urbanisation's challenges, particularly for developing countries like Pakistan.	Qualitative	Literature analysis through Secondary source	Migrating towards cities is a major cause of rapid urban sprawl, leading to several economic and environmental challenges without efficient, effective, and functional systems.
10	Yar, (2017)	The paper aims to address the issue of urban sprawl expansion in the context of Hyderabad city.	Quantitative	Primary data: 480 respondents	Urban sprawl is a serious issue that requires a solution before it reaches a point of severity where it cannot be fixed. Stopping urban sprawl will also prevent the expansion of barren lands around city areas.

Source: Compiled by Author

The above table presents an overview of 10 studies. It has been identified that articles aim to explore the causes and consequences of urban sprawl in Pakistan while exploring major cities like Karachi, Hyderabad and Lahore. Most of the studies focus on exploring the major causes and consequences of urban sprawl in Pakistan. Several studies have mainly focused on causes and challenges related to the issue of urban sprawl in Pakistan. In terms of research methods, eight studies were based on the Qualitative research method that provided textual material related to the subject matter. In contrast, two studies were based on the quantitative research method. In terms of data collection, both primary and secondary data have been used through published literature and survey.

3.2. Urban Sprawl in Pakistan

The studies on urban sprawl have been conducted by several works of literature that have explored the phenomenon of urban sprawl from the perspective of developing

countries like Pakistan. It is understood that urban sprawl is not only the physical phenomenon of the dispersion of buildings and development of space occupied by the city; it also includes diverse disciplines such as urban planning, environmental analysis, and socio-economic aspects. According to Ahmed *et al.* (2020), urban sprawl is a severe issue for megacities like Karachi without properly planning urban infrastructures such as water supply, sewerage system, mass transit, etc. The rapid conversion of rural land into urban land for planned or unplanned housing, industries, and squatter settlements has raised urban sprawl in Pakistan. Globally, 51 persons per square km; however, there is a significant difference in the case of Pakistan. The population density of Pakistan is 287 people per Km² whereas the province of Punjab is the most densely populated area. It has been estimated by UNDP (2019) that Pakistan is experiencing the highest rate of urbanisation in the South Asian region, with 36.4 per cent of the urban population. It has been estimated that around half of the country's residents will be living in cities by 2025 due to population growth and migration from rural to urban areas for better employment and facilities that offer enormous opportunities; however, due to worse urban planning and management. "ruralopilises" are estimated to be up to 60 percent of urban Pakistan. Without planning to deal with rapid urban growth, cities may become sources of dissatisfaction and turbulence rather than growth and innovation. Due to messy urbanisation, there is a drastic increase in urban slums, poverty, housing sprawls, environmental issues and mobility problems in Pakistan. On the other hand, the horizontal expansion of urban areas has also impacted the fertile land of agriculture, which was a major cause of agricultural land conversion. The gap in providing service to residents, disorganised neighbourhoods, and affluent urban communities has been raised, leading to intensified crime and other social issues (Malik and Wahid, 2014). On the other hand, there is also a need for more public investment to develop infrastructure and facilitate transport mobility, which has raised commuting costs and increased the travel distance from the residential area to the main commercial area. Furthermore, due to the absence of local government, ineffective urban management, lack of planning, and fragmentation of public service have hampered the implementation of proper urban planning. With time unplanned urban sprawl is being unchecked because housing schemes have been built beyond the limit of cities, which has used an approximation of 60,000 acres of major agricultural land. Biggest cities like Lahore and Karachi have also experienced extensive real estate development by private and military developers along the highways, redefining urban limits. The development authorities directly or indirectly play a vital role in urban sprawl. Several studies have also emphasised the significant contribution of urban development

authorities to controlling the sprawl phenomenon. Urban development authorities had the authority to approve or disapprove any urban development plans submitted by private real estate developers. Studies addressed that development authorities still need to implement planned development due to a lack of integration among major departments and political influences in real estate. (Kugelman, 2013; Arsalan *et al.*, 2015; Rana and Bhatti, 2018). Furthermore, due to the worse performance of these development authorities, urban sprawl is mainly responsible for environmental issues, pollution in major cities, housing problems, water shortage, and adverse mental health. (Khan *et al.*, 2012; Bhatti *et al.*, 2015; Mehmood *et al.*, 2017; Sajjad *et al.*, 2010; Hasan, 2015; Wang *et al.*, 2017; Zia *et al.*, 2015; Ahmed *et al.*, 2020).

3.3. Cause of Urban Sprawl

Most studies have identified internal migration, rapid population growth, better employment opportunities and conversion of agricultural land as major Causes of urban sprawl in Pakistan (Habibia and Asadi, 2011; Hasan, 2015; Ahmed *et al.*, 2020; Yar, 2017). It has been stated in the study by Hasan (2017) that rural-to-urban migration is found to be 40.0% of total migration. On the other hand, Habibia and Asadi (2011), Ahmed *et al.* (2020) and Yar (2017) have argued that education and health facilities, employment opportunities and income are the primary factors that influence the migration of people from rural to urban areas. They stressed that the availability of low price land, transportation, land value, industrial settlement and development, and access to basic facilities (educational and health facilities) are some of the major elements which influenced rural inhabitants to the urban settlements that led to urban sprawl in Pakistan (Habibia and Asadi, 2011; Yar, 2017). It has also been highlighted by Ahmed *et al.* (2020) that the development of big housing and real estate projects adherent to the outside border of the cities without any permission from concerned authorities is also a major issue of urban sprawl in big cities like Lahore, Islamabad and Karachi.

Furthermore, people also purchase land in the peri-urban areas at a low rate, hoping that someday there will be development and they may sell it at higher prices. In addition, unplanned urbanisation is also a major cause of rapid urban sprawl in Pakistan due to solid planning intervention at the local and provincial levels leading to urban sprawl. Akhtar and Dhanani (2013) also pointed out that government spatial planning policies are a major cause of urban sprawl. It has also been proved that unplanned and decentralised development leads to sprawl mechanistically without proper planning.

Table 3: Causes of Urban Sprawl

<i>Authors</i>	<i>Causes of Urban Sprawl</i>
Habibia and Asadi (2011)	Income Growth, Population Growth, Infrastructures, Numbers of Educational Centres, Visualization of Land Use" Low Price of Land, Access to Appropriate Housing, Low Price Of Transportation Systems, Promotion of Commuting Network, New Centres For The Job In The Suburbs Public Services.
Hasan (2015)	Migration
Akhtar and Dhanani (2013)	Massive Conversion of Rural Lands, Rapid Population Growth, Eventual Area Growth, Government Policies, and Horizontal Growth Are The Main Causes.
Abdul and Yu (2020)	Ineffective Building By-Laws
Ahmed <i>et al.</i> (2020)	Migration, Development of Peri-Urban Areas, Improved Infrastructure, Population Growth, Industrial Development, Political Influence
Yar (2017)	Agricultural Land Conversion, Education Facilities, Land Value, And Population Growth

Source: Compiled by Author

3.4. Consequences of Urban Sprawl

Urban sprawl has negatively affected residents and the environment of the big cities in Pakistan due to unplanned urbanisation, such as water and air pollution, traffic jams, loss of agricultural land, and increased car dependency (Ahmed *et al.*, 2020). According to the studies of Habibia and Asadi (2011), Akhtar and Dhanani (2013), Hussain (2016), and Ahmed *et al.* (2020), poverty, loss of agricultural land, storage of resources, commuting costs, long travels, and more congestion are the major consequences of urban sprawl. It has increased the issues that most cities face now, such as climate, housing, long-distance, and provision of new jobs. Studies stressed that people pass longer distances to get better housing, educational centres and jobs in major cities like Karachi, Lahore, and Faisalabad. It has also pressurised the urban areas to create space for the people and provide jobs that may raise employment issues in the cities. Ahmed *et al.* (2020) also pointed out that farming communities have perceived their land due to land conversion, increasing food security risk. Studies have identified other urban sprawl issues, such as increasing crime, law and order, and housing issues. Akhtar and Dhanani (2013) have examined the negative consequences of urban sprawl in degrading old cities and social impartiality. Yar (2017) has also proved that urban sprawl negatively impacted physical and functional activities, basic infrastructure,

energy use and economic development. This uncontrolled and unchecked urban sprawl has also challenged the development authorities.

Table 4: Consequences of Urban Sprawl

<i>Authors</i>	<i>Consequences of Urban Sprawl</i>
Habibia and Asadi (2011)	Poverty, Low Quality Of Educational Centres, Shortage Of Resources
Akhtar and Dhanani (2013)	Loss Of Agricultural Lands, Increase In Commuting Costs, An Increasing Number Of Personal Vehicles, Increase In Surface Runoff, Flooding, Dispersal, Degradation Of The Old City And Social Detachment
Hussain (2016)	Urban Transportation, Housing, Health And Education Facilities, Law And Order Situation
Ahmed <i>et al.</i> (2020)	Agricultural Land Conversion, Deforestation, Migration, Psychological Problems, The Inadequacy Of Housing
Abdul and Yu (2020)	Climate Change, Unregulated Urbanisation, Housing Shortage, Diminishing Social Capital, Inadequate Spatial Planning
Yar (2017).	Negative Impacts On Physical And Functional Activities, Basic Infrastructure, Energy, And Economic Development.

Source: Compiled by Author

3.5. Suggested Policies to Control Urban Sprawl

All studies have suggested several policies exploring the policies related to controlling urban sprawl. The table below has highlighted some critical suggestions.

Table 5: Suggested Policies to Control Urban Sprawl

<i>Author</i>	<i>Suggestions Proposed By Selected Studies</i>
Qureshi (3013)	Initiating sustainable urbanisation policies while focusing on ecological and environmentally sustainable development plans for big cities like Karachi.
Habibia and Asadi (2011)	Creating urban boundaries, re-development of inner-core regions, supporting smart growth strategies, increasing density, creating compact cities, strengthening the responsibility of local authorities, and effective management are policy initiatives that have the potential to address the defined problems.
Akhtar and Dhanani (2013)	Government urban dispersal strategies are due to the small population living in flats, whereas most prefer to live in single-family homes. Government and builders may create adequate apartment housing to avoid single-family homes. Controlling the conversion of rural lands to urban uses, as well as corruption and malpractice by government officials with ties to land grabbers, private builders, and political mafias, is necessary.

<i>Author</i>	<i>Suggestions Proposed By Selected Studies</i>
Hasan (2016)	Effective governance systems and appropriate vision by authorities in controlling housing, transport, and the environment.
Mangi <i>et al.</i> (2019)	Improvement to achieve sustainable urbanisation
Hussain (2016)	Decentralised local government to effectively address urban dwellers' issues. Revisit the policies related to urban development policies, along with all stakeholders for prosperous and inclusive cities.
Peerzada <i>et al.</i> , (2018)	Land use policies, including the 'Land Use Protection Act' and 'Land Preservation Act,' regulate the superposition of lands for different uses while considering all stakeholders in the execution process.
Abdul and Yu (2020)	Adaptive planning for improving urban security, providing additional water and electric supply capacities. Armament and synchronisation of prevailing resources, reforestation. Controlling pupation growth and internal migration. Dynamic and robust urban institutions
Yar (2017 0	People's awareness and community engagement through advertising and campaigns.
Ahmed <i>et al.</i> (2020)	Controlling illegal housing colonies while improving proficiencies of institutions and less political influence.

Source: Compiled by Author

Conclusion

As we know, the speed of urbanisation is relatively higher in Pakistan than in other South Asian economies. It is very distressing for Pakistan, which depends on the agriculture sector. The study explores the major causes, consequences and policy analysis using a systematic literature review. During the review of studies, it has been found that primary causes of urban sprawl are income, population growth, infrastructures, number of educational centres, “fiscalization of land use”, “low price of land”, “access to appropriate housing”, “low price of transportation systems”, “promotion of commuting network”, “new centres for jobs”, migration, “ineffective building by-laws”, “government policies”, “horizontal growth”, “development of peri-urban areas”, “improved infrastructure”, “population growth”, “industrial development” and “political influence” in Pakistan. On the other hand, it has brought negative impact on cities in terms of loss of agricultural lands, increase in commuting costs, an increasing number of personal vehicles, increase in surface runoff, flooding, dispersal, degradation of the old city and social detachment, poverty, deforestation, housing storage, security, psychological problems etc. This study has also explored several policies that provide valuable suggestions to control and reduce urban sprawl in Pakistan. Although the

challenge of urban sprawl exhibits no indications of dwindling soon, if the perception of suburbs can be transformed, some of the elucidations mentioned above may be possible to resolve the issue of urban sprawl in Pakistan.

Recommendations

Furthermore, policy-making should be based on province and city characterises and apply suitable solutions to prevent and control urban sprawl. Furthermore, the agriculture department should join with urban development to initiate awareness against urban sprawl issues and save the conversion of fertile agricultural land. Urban authorise and planning departments need to be more effective in front of real estate developers and land occupiers. The government also looks invincible to rapid urbanisation; a whelming agricultural land expansion of peri-urban around the outer boundaries of the cities has also raised multiple environmental, social, economic, and health problems. Selected studies have yet to focus on the role of the private sector and urban authorities in this trend; therefore, it needs to be further explored. To understand the occurrence of urban sprawl, limited mixed-method or quantitative studies focus on land conversion, environmental degradation, changing ownership of land, food insecurity, and deforestation.

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