

# COMPARATIVE ANALYSIS OF BUILDING BYE-LAWS IN PAKISTAN: AN EXAMINATION OF REGULATORY FRAMEWORKS AND IMPLICATIONS FOR URBAN DEVELOPMENT

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## Abstract

*Building bye-laws or regulations are a noiseless protector to the general public. These are mostly not well recognized unless a situation arises where regulations are felt inadequate or not enforced. In Lahore, some authorities are present to effectively implement building by-laws and zoning regulations. This study undertakes a comprehensive comparative analysis of building bye-laws across major cities in Pakistan, examining the regulatory frameworks governing urban development. The research investigates variations in bye-laws related to building height, setbacks, plot coverage, parking requirements, and safety standards. A comparative assessment of bye-laws in Lahore, Karachi, Islamabad, and Peshawar reveals significant discrepancies, impacting urban planning, infrastructure, and public safety. The study identifies inconsistencies in enforcement, leading to unauthorized constructions, environmental degradation, and increased risk of natural disasters. The analysis highlights best practices from international jurisdictions and recommends harmonization of bye-laws, enhanced enforcement mechanisms, and community engagement. This research contributes to the discourse on urban governance in Pakistan, informing policymakers and stakeholders on the need for standardized, effective, and citizen-centric building regulations.*

## Keywords:

Building, bye-laws, regulations, urban, development

## 1. Introduction

Building bylaws are regulations that govern all aspects of a structure, from its design to its safety features. Setbacks, building heights, obligatory spaces, and, at a higher level, building direction, parking spaces, emergency and fire exits, building texture, and façade elevations are all covered by building bylaws. The lack of funding and support for municipal building regulations is a major issue. The household sizes are larger in TMA-controlled regions than in other areas, which is one of the reasons for non-compliance with construction standards. Following the examination of this factor, it was discovered that TMA could be considered an ideal scenario because 100 percent of respondents believe that this authority is free of corruption and that they have complete faith in it. The construction of a TMA and LDA is recommended for building regulatory agencies because the knowledge required differs from present building regulations. The organization and system must be sufficiently sustainable and flexible enough to adapt to future laws updates through continual skill development. It's also

critical to set up a mechanism for collecting essential data from the appropriate authorities for ongoing analysis and research (Asim, 2019). It is usual to resolve regulation implementation issues by involving both public and private entities. Many worldwide governments have become involved in the private sector to administer building bylaws effectively and efficiently after realizing the benefits of this practice. Because the private sector is more accountable, it governs the implementing authority and guarantees that construction codes are successfully implemented. Unrestricted land use permits the establishment of the walled city, while general development permits the erection of vulnerable structures. Incomplete legislative and legal foundations, codes that are inappropriate to local conditions and practices, inadequate code administration at the local level, and a failure to train and support the construction industry to make code compliance possible are all flaws.

The failure to address and improve local building culture, the inability to establish the legitimacy of the regulatory process through open code development and implementation, and the failure to invest in or support the development of efficient and effective building regulatory capacity remain significant obstacles to reducing risk and improving construction quality. Local bodies must be able to ratify bylaws for them to be effective. The monetary and financial gains that result from the employment of such legal tools provide the benefits of enforcing them (fines or payments for permits). Municipal councils are most concerned about a lack of monitoring machinery and technical people at the municipal level to control and prevent such infractions from occurring (Asim, 2018). The researchers identified a three-tier system, which includes real-time data and control and a violation-reduction mechanism, to achieve successful implementation. Developed countries, such as the United Kingdom and Canada, are much ahead of the curve in terms of building by-laws implementation. Building regulations are also widely available on the internet in developed countries. In addition, many countries provide an online building plan approval service. People can readily submit their proposals for approval online using this service. In the case of the walled city of Lahore, the final authority is in the hands of the Board members, who can approve the plan after studying the existing circumstances, regardless of whether or not the laws have supported the project. (Mayer, 2019). The best strategy is to set minimum safety requirements and leave options for residents with expanded standing operational procedures. Building bylaws should be amended at regular intervals to reflect current needs. (Heijden, 2019).

## **2. Building regulations**

Although necessary legislation and authorities have been formed to prioritize the issue, building control in Pakistan is still not as effective as in industrialized countries. The country has strict tax-building regulations. Several shoddy infrastructures can still be found in the country's megacities, such as Lahore and Karachi. As a result, tight building requirements must be enforced in Pakistan, allowing only seismic assault resistant, energy-efficient, and 13 earthquake-proof high-rise buildings to be developed. Other minor conditions, such as the floor area ratio in a dwelling or commercial building, should also be considered. On the other hand, even if some regulations are enacted, they contain errors that must be corrected. Even the authorities believe that associated local construction laws need to be amended. Because of the influence exerted by influential builders, even well-prepared and well-implemented laws cannot be enforced by regulators, and administrators express their incapacity to take stern action in this area. Unfortunately, many builders break the country's building rules to make quick money, which leads to a slew of difficulties. Furthermore, Pakistan's engineering and construction sectors are still fragmented and chaotic. Many builders in Pakistan lack the necessary technology and abilities to construct high-quality structures that adhere to engineering requirements and strict building laws.

Building control is the responsibility of district governments in Lahore, as per the Local Government Ordinance 2001, which is still in effect. Despite the policy that they had to fall under the authority of the district governments under the law, the Lahore Development Authority remained to split the duty with the district governments (TMAs) 14 due to inadequate institutional architecture. Because of the dual purpose of LDAs and TMAs, there were frequent misunderstandings among government officials about where and what should be done by whom. Lahore is divided into nine city district towns, each administered by a TMA from adjacent cities and one cantonment town. TMAs follow the norms of the city district government, whereas the cantonment board has its policies. The new legal framework should apply to residential properties with ten or more floors in the first instance. The Local Planning Authority should identify new higher-risk residential buildings (HRRBs) and notify the regulator. Existing structures in the scope should be determined using alternative methods, as learned through the Building Safety Program. A 'Joint Competent Authority' should be established by the government. Local authority building standards, fire and rescue authorities, and the Health and Safety Executive should all collaborate to ensure building safety is prioritized throughout the lifecycle. The best approach for assuring good joint working should be agreed upon with all parties involved, but it should be based on the above model. A thorough cost recovery model should be designed and implemented.

### **3. The regulatory framework**

The regulatory framework should approach the building as a single entity (a system with subsystems) with a new overarching regulatory framework. The method and the holistic assessments that must conduct before starting building work should be described in an approved document. This should specify the need to comprehend the interactions of the system and its constituent subsystems in both standard and abnormal operating settings. It is recommended that a system of mandatory occurrence reporting to the JCA be established, similar to that used by the Civil Aviation Authority. The requirement to report should be on a no-fault basis for key recognized duty holders. The reports' results (and statistical analysis of the data) should be made public. Non-reporting should be treated as non-compliance, with appropriate punishments applied. The government should define the prominent roles to ensure a safe procurement, design, and construction process. At a bare minimum, these should be those identified as - Key roles under the Regulations. To minimize unnecessary misunderstanding, the definitions of these positions should match those in the Regulations (Building Safety Program, 2020).

The regulatory aspect of the building is one of the factors behind it, which affects the design of houses in Lahore. Such regulations include the rules and guidelines of the relevant development authorities. These regulations need to be fully considered for official approval of housing construction. Change the floor area ratio and residential results from failures in the scope of the plot under such responsibilities. A similar case is being implemented in the study area of Lahore. Due to this restriction, many aspects of sustainable design and deep beauty are lost. As a result, the integration of solar and wind direction becomes a missing element in a home design scheme. (Imrie 2004)

#### **3.1. The importance of building by-law**

Building bylaws are described as rules and specifications that give the bare minimum of protection to construction employees, for the health and comfort of customers, and to provide appropriate protection to the general public. The regulations that spell forth the fundamental standards to be followed in the design and construction of buildings are no longer in effect. They also apply to new construction and expansions, material modifications, and some changes in the usage of existing structures.

A bylaw is a local law made by a subordinate for the betterment of society. To achieve the policies and concepts formulated in the City Master Plans by the Town Planning Department, enact bill-by-laws to give a city a specific architectural role.

Building by-laws is an integral part of many organizations but they are often misunderstood because there are different procedures and policies on how an organization can establish or govern by-laws. The town planning scheme controls the use of land, roads, market areas, commercial areas, and surroundings.

### **3.2. The need of making by-laws**

The basis of modern bylaws, the requirements always seem mysterious to the common man and even too many officials, and most of them are based on natural scientific laws, popular features of building materials, and hereditary hazards to consumers. In Pakistan, the need for by-laws is paramount. For residential, commercial, administrative, and industrial users, building activity in both the private and public sectors in terms of building is up to fifty percent of any five-year plan. In addition, certain projects may be delayed from time to time. So will lose its identity in terms of mass and space relationships. If talk about cities, if we lose control over construction activities, then there are problems like visual impairment, uncontrolled traffic, uncomfortable living, and environmental issues, and so on. In the absence of appropriate by-laws and machinery to enforce these laws, the city will fall into disrepair.

## **4. Method**

Lahore is the capital of the Pakistani province of Punjab and is the country's 2nd largest city after Karachi, as well as the 26th largest city in the world. Lahore is one of Pakistan's wealthiest cities with an estimated GDP of \$84 billion as of 2019. The recorded history of Lahore, the second-largest city district of Pakistan, covers thousands of years. A major industrial agglomeration with about 9,000 industrial units, Lahore has shifted in recent decades from manufacturing to service industries. Some 42% of its workforce is employed in finance, banking, real estate, community, cultural, and social services. The city is Pakistan's largest software & hardware producing centre and hosts a growing computer-assembly industry. The city has always been a centre for publications where 80% of Pakistan's books are published, and it remains the foremost centre of literary, educational and cultural activity in Pakistan.

### **4.1. Research Design and Sampling**

The research study is based on qualitative and quantitative analysis based on practices in developed and developing countries. Data/details have been collected through primary and secondary sources. A questionnaire was designed by keeping in mind the research objectives, which helped in primary and secondary data collection. With the help of recommendations for implementation mechanism, we analyze the results. The structure of this research includes identification of the research problem, formation of objectives, and reviewing the literature from developed and developing countries and in the local context. A questionnaire was designed by keeping in mind the research objectives, which helped in primary and secondary data collection and led to the processing and analysis of collected data. With the help of accounting, conclusions and recommendations were put forward. For this purpose, a general to specific approach has been adopted. The particular steps considered are in the following sequence.

A calculated number of perceptions recorded are taken from a larger group of data or population under study. Using this technique to get results from a larger populace depends upon the type of investigation being carried out. This particular examination used simple arbitrary sampling to record the residents' perceptions of the area. This appears to be the least demanding technique that seems most reasonable for obtaining desired results from the study of immense populated regions. All the perceptions recorded in the selected areas (i.e., from the Royal trail) were



effectively viewed and analyzed to draw the individual's satisfaction level results. The sample size chosen for this research to collect meaningful data is 200 as 200. The questionnaire has to be filled from the respective 3 Case study areas, and six interview performas are also filled from the concerned authority officials, i.e., DHA, LDA, and WCLA.

## 5. Comparative Analysis

### Regulatory Framework and Master Planning:

**Walled City of Lahore:** The laws and regulations govern the master conservation, redevelopment, planning, management, and regulation of the Walled City, which necessitates the creation of a master plan by the authorities in consultation with the Heritage Conservation Board. The ordinances were rigorously focused on public welfare, with the goal of preserving the area's historical and cultural significance. This plan was approved by the Government and was the Authority's obligation to regulate and incorporate new development without harming the area's integrity. The master plan attempts to preserve heritage assets while developing the surrounding regions for current purposes. The plan addresses zoning, land use, and building heights while ensuring that growth does not affect the Walled City's historical and architectural importance.

**The Lahore Development Authority (LDA):** Lahore Development Authority was responsible for urban development in Lahore and its adjacent areas. The Authority regulates the framework, which focus on urban expansion, public amenities, infrastructure, residential development and zoning restrictions. The major purpose of the master planning was to accommodate the city's growing population by providing housing, roads, and public services. The LDA was given the authority to approve or reject housing developments and land use modifications in line with urban growth objectives. Moreover, LDA serve the public interest while simultaneously allowing for private participation in housing and commercial developments as long as they adhere to the LDA's zoning and building standards.

**DHA:** The Defence Housing Authority (DHA) operate under its own set of regulations, as outlined in the DHA Order 2002. They create sophisticated residential and commercial spaces but heritage protection was not been prioritized. It was an autonomous authority primarily concerned with the development of housing for military personnel and their families, as well as the provision of vast infrastructure and community services, independent of civilian authorities and regulations

### 5.1. Building and Zoning Regulations

**Walled City of Lahore:** The laws were intended to maintain the areas architectural integrity. The construction operation were strictly regulated, and no building or change may take place without the Authority's consent. Zoning restrictions ban any alterations that might detract from the area's cultural history. The housing plans in the Walled City were subjected to strict rules. Any new development or change in land use must comply with the master conservation and redevelopment plan. The goal was to preserve the legacy while allowing for new upgrades that were compatible with the surrounding environment.

**LDA:** The construction and zoning restrictions were more flexible and orientated than the Walled City of Lahore. The LDA defines building heights, land use, and density, allowing for contemporary construction and development while ensuring that urban expansion was consistent with city planning goals. Moreover, they permit new housing plans to accommodate Lahore's rising population. These plans encompass residential, commercial, and infrastructure projects. The LDA guarantee that all housing developments follow zoning and building standards to preserve order and foster long-term urban expansion.

**DHA:** The DHA implement the restricted building requirements within its authority in order to maintain high construction standards. The authority governs land use, building heights, and residential and commercial property design in order to promote a well-organised and secure urban environment. However, the laws were more concerned with current architecture and infrastructure than history preservation.

A unique example exists in Lahore, where many authorities work in different locations and have their bye-laws for people's health and safety. Every authority has various advantages and disadvantages in terms of management. This chapter provided a summary of all of these authorities.

## 6. Descriptive Analysis

### 6.1. Residents Familiarity level with the By-laws of Concerned Authority

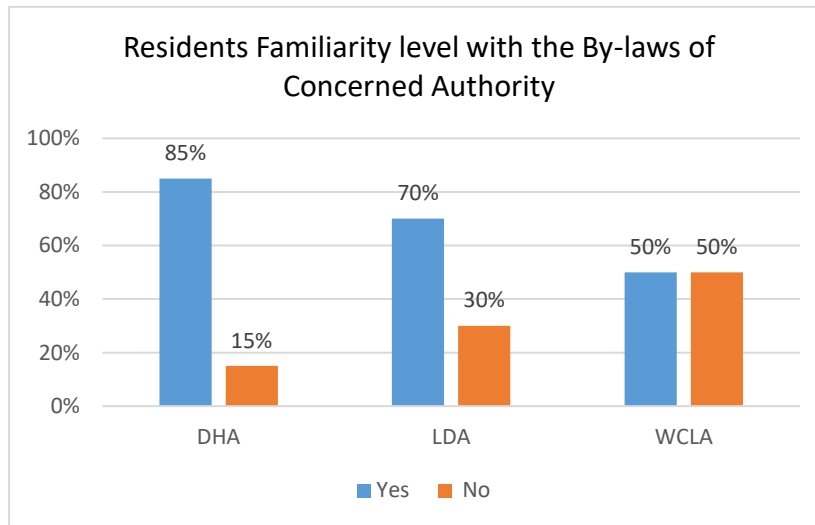


Figure 1

The above graph depicts that 85% respondents in the DHA, 70% in the LDA city and 50% in the Walled city respond that they are familiar with the building by laws of the concerned authority currently working in their areas when the researcher asked the reason of familiarity they respond that because at the time of plan approval and construction they have to follow this all so they are well familiar with the bylaws. On the other hand, 15% respondents in the DHA, 30% in the LDA city and 50% in the Walled city area are not familiar with the building by laws because most of the respondents were illiterate or only middle pass

### 6.2. Effectiveness of Implementation

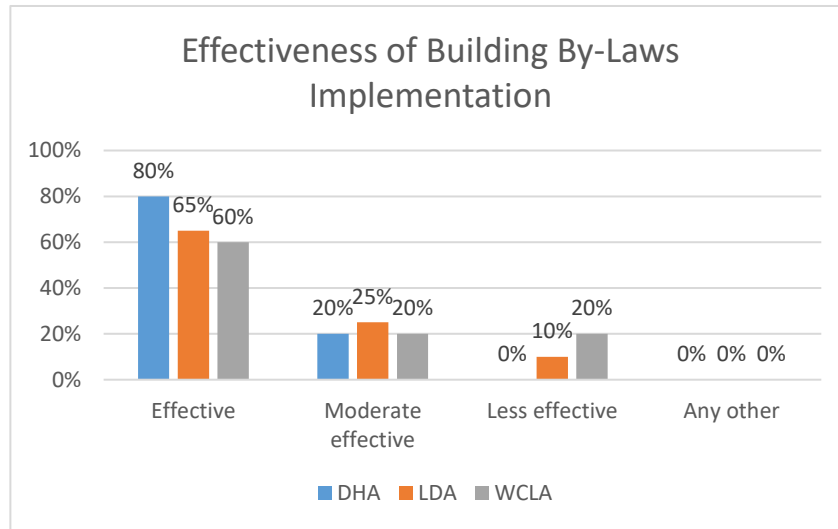


Figure 2

The above graph depicts that 80% respondents in the DHA, 20% in the LDA city respond that the building by laws are effectively implemented by the authority in the DHA and LDA city. 65% respondents in DHA, 25% in LDA city and 10% in the Walled city respond that they are moderately implemented and 60% respondents in the walled city did not respond or say they are not familiar with that.

### 6.3. Building Inspector Visits

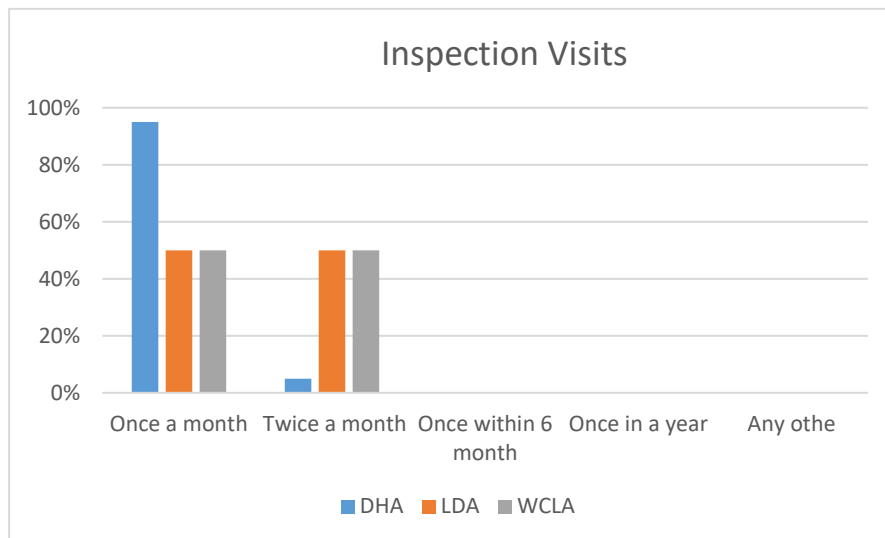
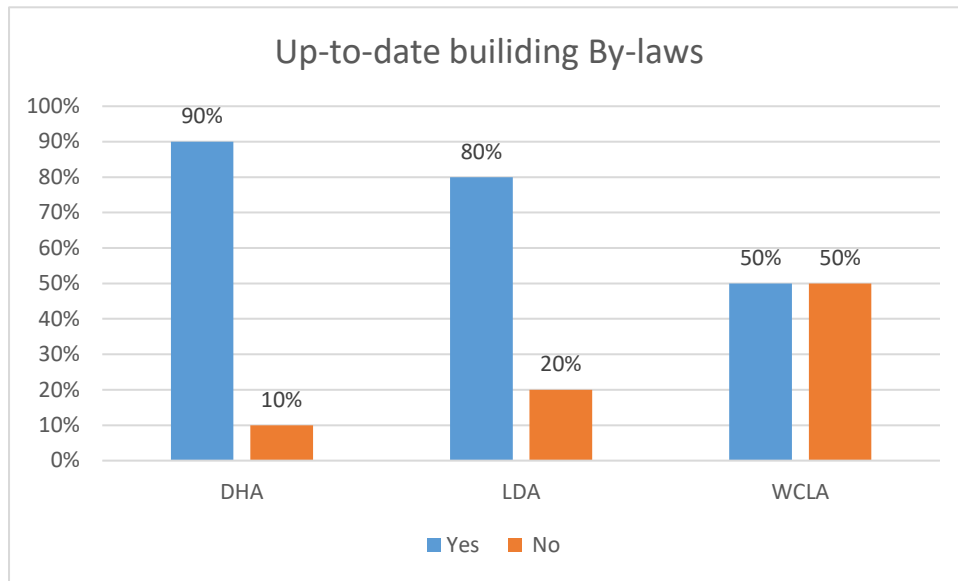


Figure 3

In DHA the building Control Inspector visits the area under his/her control once in a month. And same rule is following in the LDA and WCLA. But sometime their building inspector visits the area twice a month depends on the situation and level of violation made by the people.

### 6.4. Up-to-date Bylaws



Figure

4

The above

graph depicts that the DHA has up to date building by-laws and they regularly work on their building by-laws to ensure the flexibility and their implementation in their concerned area of jurisdiction. LDA also has UpToDate building by laws as the 80% response of the officials was that they have up to date building by laws but the case of walled city Lahore Authority is quite different from the rest of two because in the WCLA the 50% respondents said they have and 50% said they don't have up to date building by-Laws.

## 7. Law Implementation

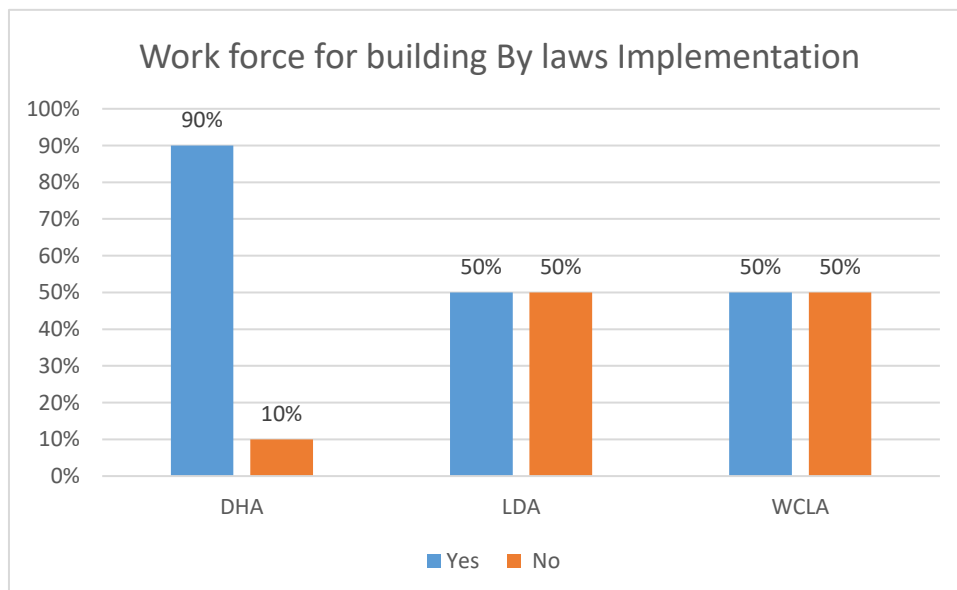


Figure 5



The above graph depicts that the respondents in the DHA respond that they have enough work force to implement by laws properly but in LDA the 50% respondents say yes and 50% said no they don't have enough work force to implement the bylaws and the same case is of Walled city Lahore authority. They further elaborate that the authority doesn't have enough resources for proper check and balance and implementation of by laws in the concerned area and it is one of the big reasons which hinder the proper implantation of building by laws in any area.

### 7.1.Social Economic Factor Influence

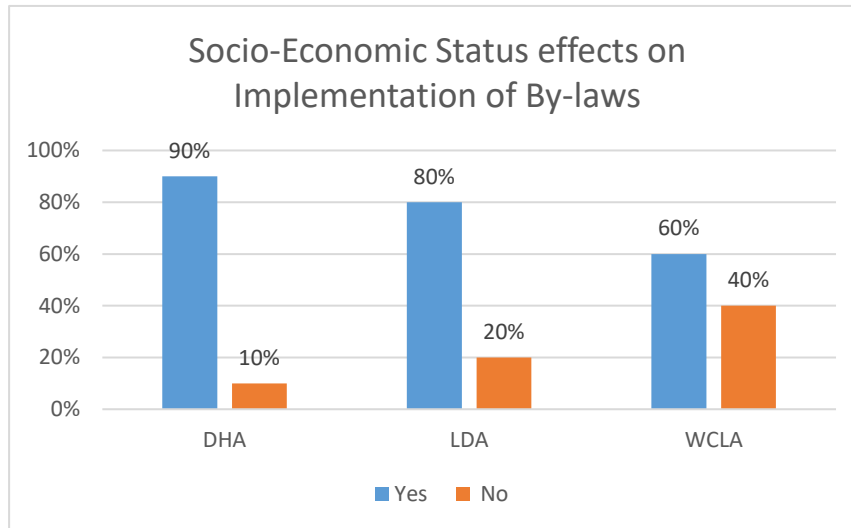


Figure 6

The above graph depicts that according to the views of DHA officials 90% respondents agreed that socio-economic condition have effect on by laws implementation because people are educated and well familiar with the requirement of the authority. The 80% respondent in the LDA and 60% in the Walled city has the same opinion that the socio-economic status effects the Building by-laws implementation in any area. While 10% respondents in the LDA, 20% in the LDA and 40% in the WCLA think that the Socio-Economic condition of any area effects the building By-laws Implementation.

### 7.2.Political Influence

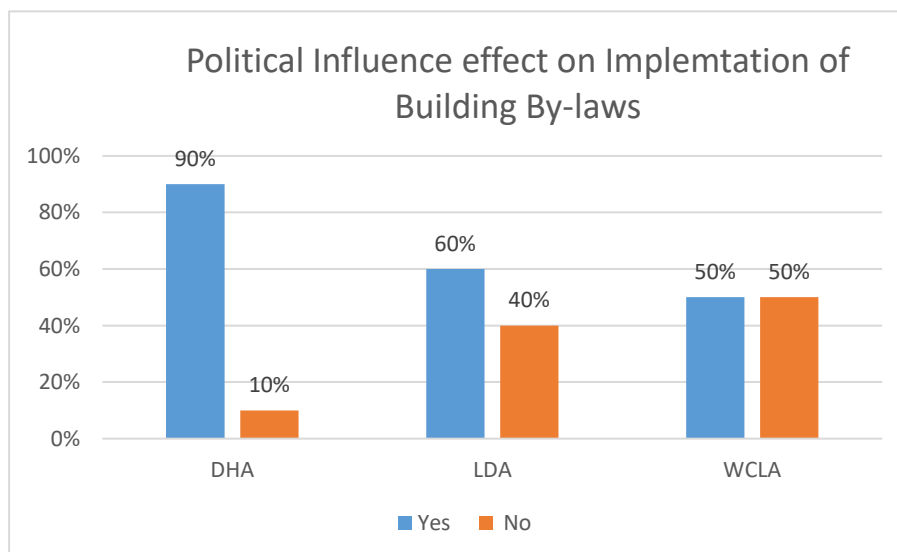


Figure 7

The 90% respondents in the DHA, 60% in the LDA and 50% in WCLA said they have to face the political barriers during implementation of Building by-laws and it is the major factor which directly affect the Building By-Laws implementation in any area. While 10% response in the DHA, 40% in the LDA and 50% in the WCLA were not agreed to that point that politics influence the implementation.

**7.3.Public participation**

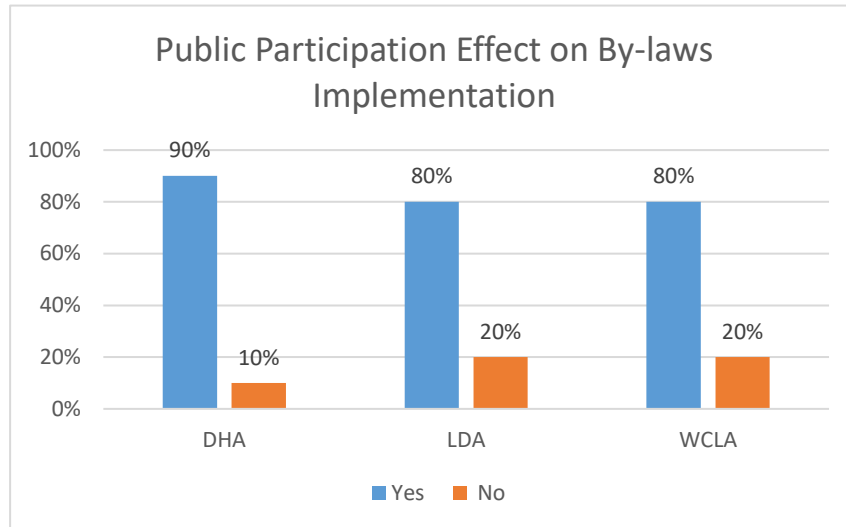


Figure 8

The 90% respondents in the DHA, 80% in the LDA and 80% in WCLA have opinion that the public participation play a vital role in the Building By laws implementation. While 10% in the DHA,20%in the LDA and 20% in the WCLA respond they don't know or don't think so that public participation helps in by laws implementation.

**7.4.Completion Certificate**

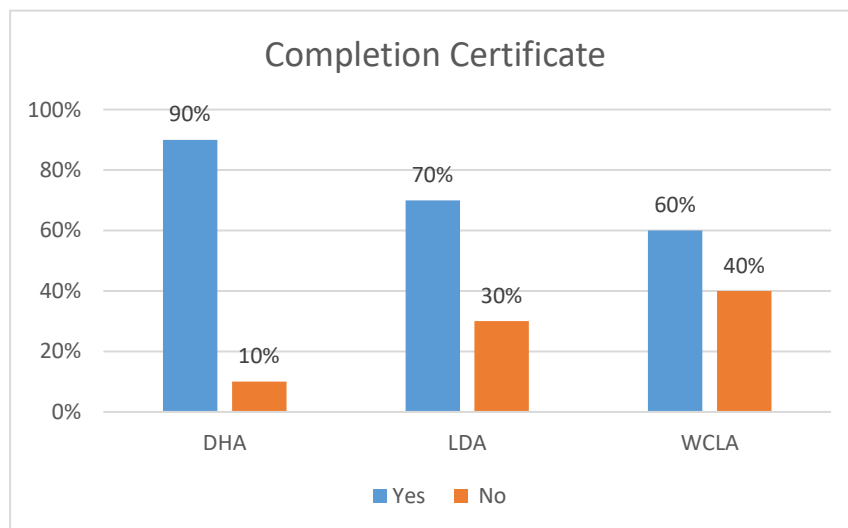


Figure 9

The above graph depicts that 90% respondents in the DHA, 70% in the LDA city and 60% in the Walled city area having completion certificate. But the percentage of respondents not having completion Certificate is quite higher in the Walled city area as compared to the DHA and LDA city.

**8. Conclusion**

From the analysis the researcher conclude that household with an average of more than one family per house are more prone to break building bye-laws since they must accommodate more families in a single dwelling. It was clear through the analysis that most families in Walled City and LDA City are double or more than two, and the violation graph provided above also shows that violations in Walled City and LDA City are at an all-time high when compared to other authorities in Lahore. For DHA, the situation is the inverse. The Education has an effect on the building by laws implementation and on their understanding as the analysis reveals that the building by laws are more strictly followed in those areas where people are more literate as compared to the others. The graph shown above in the analysis chapter represent that in the DHA most of the resident are under graduate, graduate and some of them having post graduate degrees and more sensible so the bylaws implementation rate is quite higher in DHA as Compared to the LDA city and Walled city Lahore. The situation is worse in the Walled city Lahore. The officials also think that the educational level of the residents of any locality has direct effects on the implementation of the building by-laws implementation in any area. Moreover, the Analysis reveals that the Occupation and Income level of people also effect the implementation of the bylaws. The results of this research reveal that the DHA which is the quite high-class area and most of the residents are the Overemployed or Semi Govt. Employees and the rate of Violation is quite lower as compared to the other areas like in LDA city and Walled city Lahore. The officials of the authorities also reveal that the socio-economic status of the residents directly effects the implementation process of the authority. Furthermore the corruption within the authority and the official behavior with the residents is the one because which hinder the implementation of building by laws in the concerned areas because people thought the authority's officials as their enemies. The other factor which hinder the implementation of building by laws is the insufficient resources, work force etc. because when the authorities not able to visit the area regularly then how it is possible that people not violate the role. This research also covers numerous variables necessary for the proper and effective implementation of the building by laws in the concerned area for walled city Lahore authority. This research indicates the most important variables which effects the working of the Walled city Lahore Authority. Lastly, this research also determine that the local people participation is the key element which helps in the effective implementation of building by-laws which is missing in the Walled City Lahore Authority.

### **9. Suggestions/ Way Forward**

When authorities make decisions, public participation should be ensured so that people own those decisions. This also fosters popular admiration. The WCLA, like industrialized countries and the DHA, can improve the efficiency of its system by including the general public in decision-making. Before making any changes to their existing bylaws, DHA invites the general public, listens to their opinions, and considers their suggestions. As a result, we can improve the efficiency of other authorities by implementing this mechanism. Building bylaws should be modified to reflect current needs in the community. The byelaws must be updated on a regular basis. The importance of updating bylaws is important for improving building performance requirements and incorporating new technology into the implementation system. A few people highlighted the bizarre behavior of the WCLA officials, in order to solve this problem, there is need that the general public should be given proper guidance and for this office hours should get fixed for the visitors.

People considered it illegal when ask to stop encroachment in front of their shops and houses. There must be a proper training session in which people must be trained to know the difference between owned property and encroached property. International implementation mechanisms of Building Rating Systems and Certification must be customized to local situations. Tools for the production, distribution, and availability of building bylaws must be established with

coordinated efforts by all key stakeholders. Customized training programs for various levels should be set in collaboration with Provincial Designated Agencies, Municipal Committees and Development Authorities, NESPAK, and Public Sector Universities. Construction projects should be included in all legal and regulatory frameworks by the government. When executing the National Housing Policy, Naya Pakistan Housing Schemes, and relevant Sectors National Plans, priority should be given to heritage buildings.

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