

DIGITIZATION AND AUTOMATION OF ADMINISTRATIVE PROCEDURES; BUILDING SOLUTION TO ADDRESS SLUDGE IN SETTING-UP RESTAURANT BUSINESSES

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INTRODUCTION

Lahore's restaurant industry faces significant regulatory barriers that hinder its growth and development. Excessive administrative burdens, corruption, and inefficiencies in registration, licensing, and approvals deter new entrepreneurs and increase operational costs for existing businesses. This brief, inspired by PIDE's Sludge Audit Series, highlight key findings from a study examining these challenges and proposes a digitized, integrated system to streamline processes, reduce costs, and foster growth in the restaurant sector. The study advocates for e-governance and "Digital Pakistan" initiatives by reducing bureaucratic inefficiencies and corruption, attempts to improve compliance, foster entrepreneurship, and enhances service standards in businesses. This research offers a scalable model for reforms across other industries and sectors.

METHODOLOGY

The study is divided into three components, explained as follows;

Component 1:
Situational Analysis;
Registering and
Licensing Restaurants
in Lahore

•Objective:

Investigate regulatory challenges in registering and licensing restaurants in Lahore.

•Approach:

Conducted a survey of 242 restaurants categorized into single-branch, multi-branch, and multinational setups.

•Goals:

- (i) Identify obstacles faced by restaurant owners during registration across various departments.
- (ii) Analyze the current registration processes and owner perceptions to pinpoint improvement areas.
- (iii) Estimate the total costs incurred by owners for licenses and approvals

Component 2:
Calculating the Costs
of Sludge in
Restaurant
Businesses

- Objective:**
Quantify the regulatory burden ("sludge cost") as a percentage of:
 - (i) Total restaurant setup costs.
 - (ii) Sectoral Gross National Product (GNP) of hotels and restaurants in Punjab.
- Goals:**
 - (i) Measure regulatory costs in relation to setup expenses.
 - (ii) Evaluate the sludge cost's contribution to the GNP of the hotel and restaurant sector in Punjab.

Component 3:
Development of
Digitized &
Automated Software
Architecture System

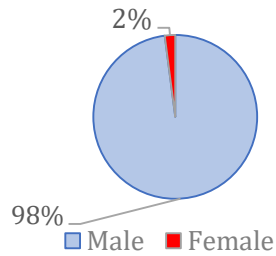
- Objective:**
Build a user-friendly, blockchain-enabled digital registration system for restaurant businesses in Lahore.
- Goals:**
 - (i) Simplify processes through one-time applications and integrated inspections.
 - (ii) Minimize waiting periods and eliminate physical visits.
 - (iii) Introduce online grievance redressal for anonymous complaints.
 - (iv) Establish feedback loops for continuous system improvement.
- Key Features:**
Centralized platform integrating functions of DTS, PFA, LDA, MCL, etc.
Digitized application process with real-time status tracking, online payments, and single-window approvals.
Blockchain/IPFS for secure, tamper-proof records.

FINDINGS AND CONCLUSIONS

The survey of restaurants across Lahore revealed pervasive corruption, inconsistent licensing costs, and systemic inefficiencies within the regulatory framework. Restaurant owners expressed apprehension about discussing costs due to fear of departmental repercussions, highlighting bribery and undue fines by authorities. Licensing expenses varied based on location, timing, seating capacity, and cuisine type, with many owners resorting to bribes or influential contacts to expedite processes. Complaints of blackmail and extortion were common, with police demanding bribes, free meals, or cash to permit operations beyond legal hours. Additionally, the involvement of numerous regulatory bodies caused confusion and delays, disproportionately affecting smaller or desi restaurants. These findings underscore a hostile environment for new and small businesses, stifling growth and impeding the ease of doing business.

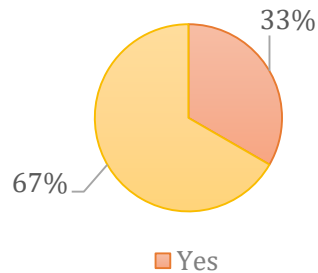
After analyzing and cleaning the collected data, the following descriptive analysis has been compiled as the preliminary findings of the research.

Figure 1 Gender of Owners



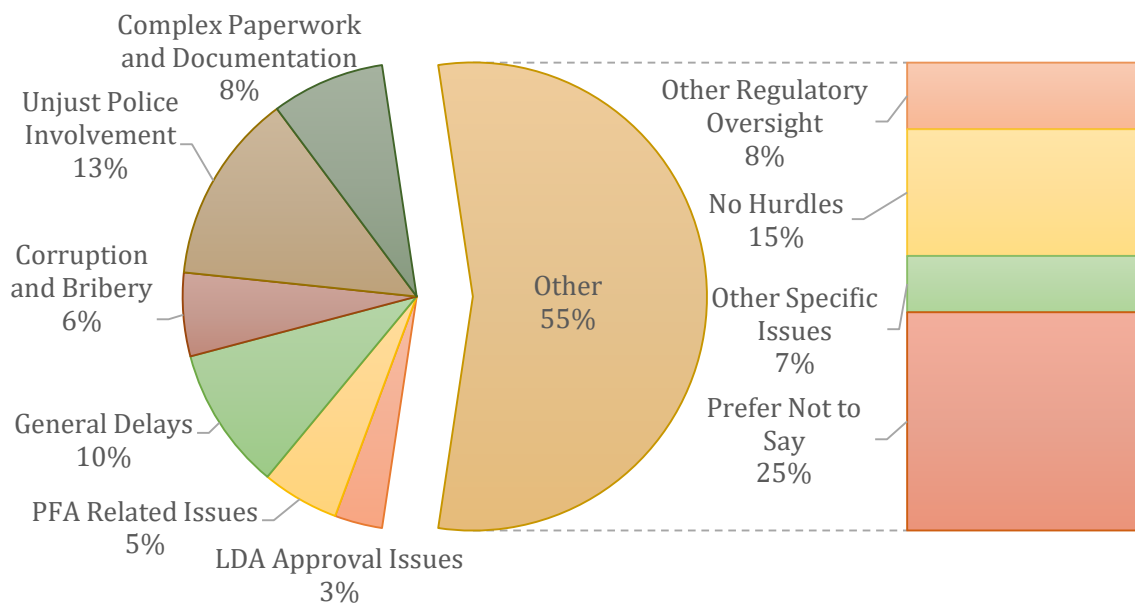
Source: Author's illustration

Figure 2 Previous Business Experience



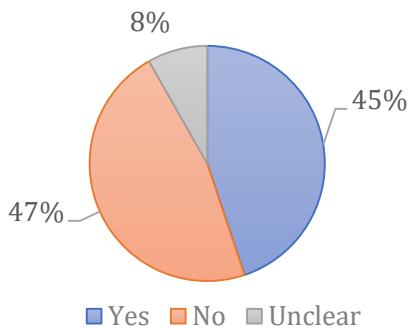
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Figure 3 Major challenges faced by owners



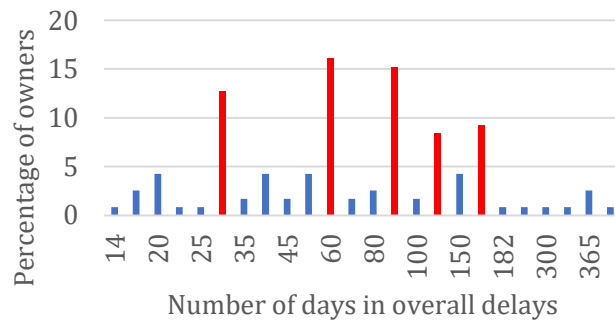
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Figure 4 Delays in Approvals



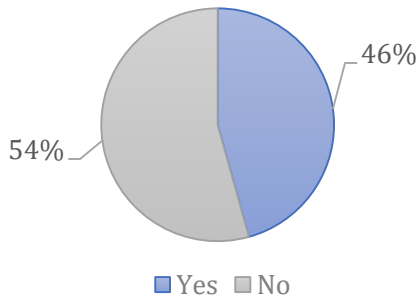
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Figure 5 Duration of Delays



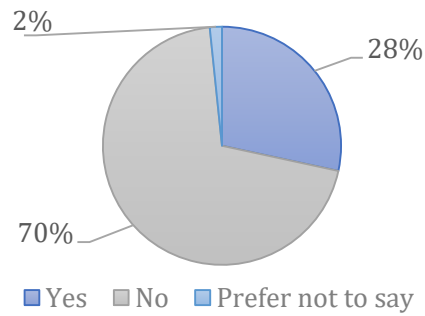
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Figure 6 Percentage of owners who hired a legal advisor or consultant



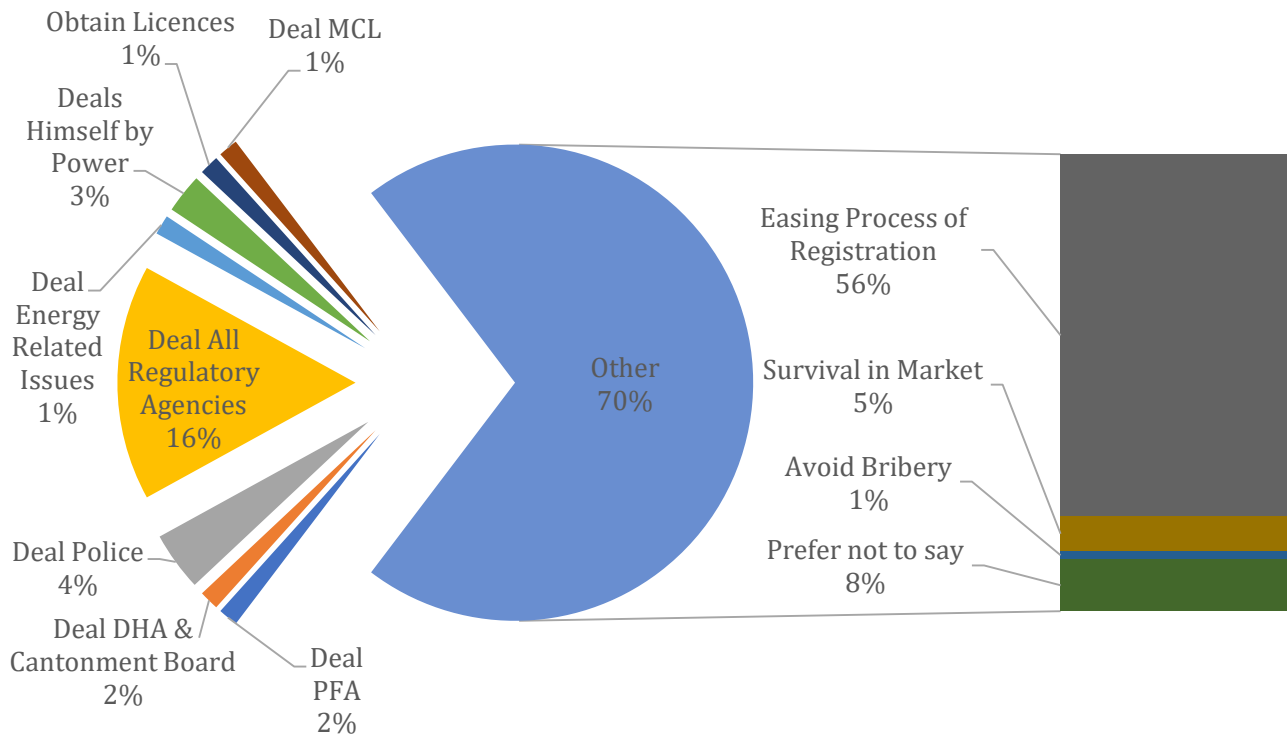
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Figure 7 Percentage of owner who ever approached a strong reference



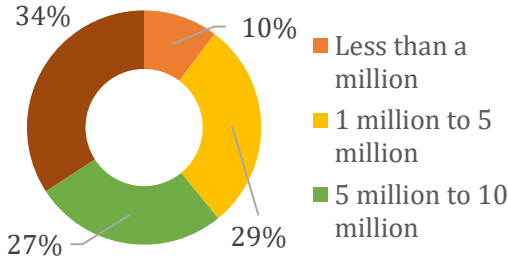
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Figure 8 Reasons for approaching references



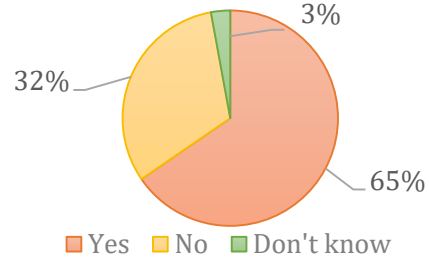
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Figure 9 Startup Costs Distribution



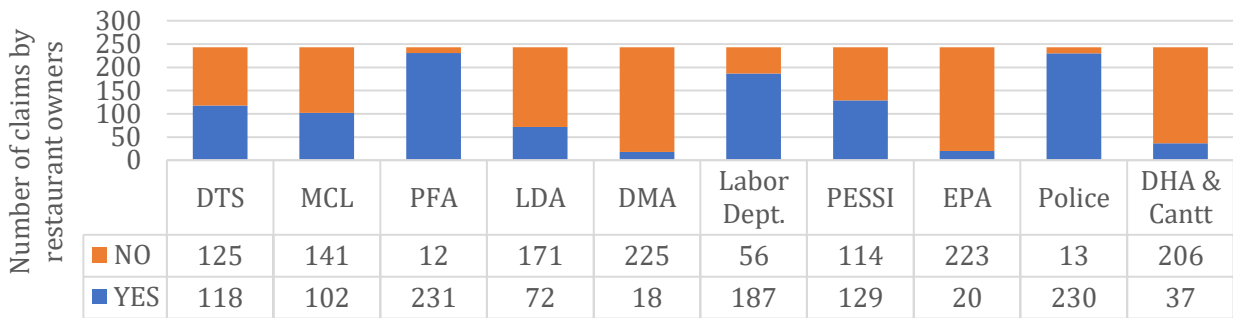
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Figure 10 Recurring License Costs



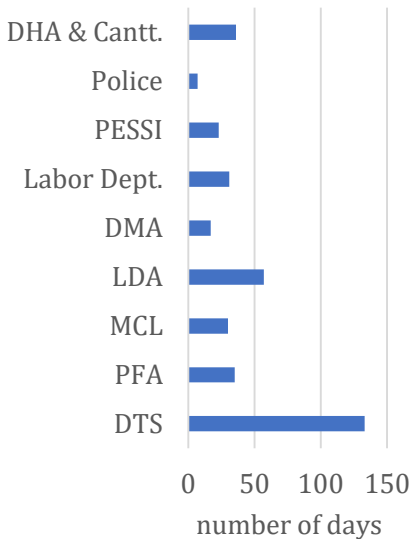
Source: Author's illustration

Figure 11 Owners claiming involvement of selected departments in businesses



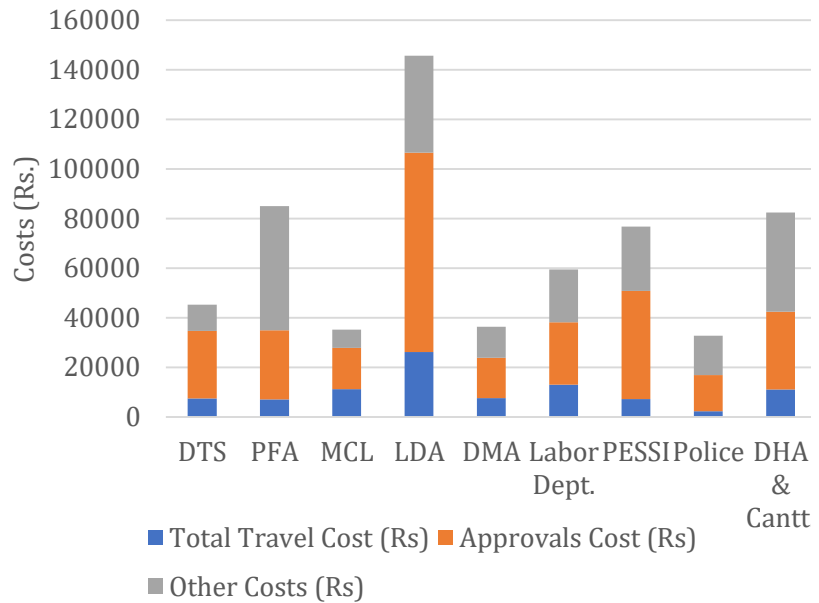
Source: Author's calculation

Figure 12 Time Taken for Approvals



Source: Author's calculation

Figure 13 Registration/License/Approval Costs by Department



Source: Author's calculation

Figure 14 Estimated total costs in Registration/License/Approval



Source: Author's calculations

By surveying restaurant owners, the study estimated the average setup cost at **PKR 6.78 million** using linear interpolation across predefined expense categories. The sludge cost, derived from the average regulatory burden, was calculated at PKR 641,562 per restaurant, representing approximately **9.46%** of the total setup cost. Moreover, the cost of sludge as percentage of National and Punjab GNP is summarized below.

Table 1 Total Cost of Sludge as percentage of National and Punjab GNP

Year	National GNP (Hotels & Restaurants, Rs. million)	Punjab GNP (Hotels & Restaurants, Rs. million)	Total Hotels & Restaurants in Punjab	Total Sludge Cost in Punjab (Rs. million)	Sludge % of Punjab GNP	Sludge % of National GNP
2020-21	726,385	~ 393,676	23,156	~ 14,856	~ 3.77%	~ 2.04%
2021-22	822,966	~ 445,060	30,459	~ 19,541	~ 4.39%	~ 2.37%
2022-23	1,180,653	~ 639,993	4,987	~ 3,199	~ 0.50%	~ 0.27%

Source: Author's Calculations.

POLICY RECOMMENDATIONS

The study highlights the urgent need to modernize the Pakistan Hotel and Restaurants Act, 1976 and its associated Rules of 1977, as they rely on outdated, manual processes that hinder digitization and automation. Key reforms recommended include amending the Act to delegate authority to provincial governments, replacing references to the "Federal Government" with "Provincial Government" to align with constitutional mandates. It is also suggested that provinces be empowered to appoint controllers, formulate rules, and enforce regulations, including granting sealing powers to provincial authorities. These changes aim to decentralize governance, streamline processes, and ensure effective implementation of restaurant registration and compliance procedures at the provincial level.

Additionally, integrating the functions of various departments and authorities is essential. The following table summarizes their integration and performance based on the regulatory review conducted in the study.

Table 2 Integration of Key Players in Web-Application Portal and Proposed Functioning

Player(s)	Current Functioning	Proposed Functioning & Integration in Web-Application Portal
<i>Federal Government</i>	Appoints Controllers for hotel and restaurant registration.	Delegates the appointment of Controllers for hotel and restaurant registration to Provincial Governments while setting overarching guidelines adaptable through the portal.
<i>Provincial Government</i>	Limited delegated powers for regulation.	Gains full authority to appoint Controllers, Deputy Controllers, and other authorities; monitors and reports activities via the web-application.
<i>Controller (DTS)</i>	Inspects premises and processes physical applications for registration and licensing.	Conducts virtual inspections, processes online applications, and approves them via the web portal.
<i>Deputy Controller (DTS) Operations</i>	Handles appeals and additional inspections.	Manages appeals and inspections digitally, tracking them via the portal to ensure transparency and timely resolutions.
<i>Punjab Food Authority (PFA)</i>	Regulates food safety, conducts physical inspections, and processes manual applications for CPR.	Implements online applications, digital CPR issuance, virtual inspections, and integrates food safety compliance checks into the web-application for automated feedback and synchronized reviews.
<i>Food Safety Officers</i>	Conducts physical inspections and enforces food safety standards.	Conduct virtual inspections, log compliance digitally, and issue improvement notices via the web-application while accessing up-to-date compliance records for enforcement.
<i>Public Analysts</i>	Analyzes food samples and provides manual reports to the PFA.	Conduct digital analyses, upload reports directly to the web-application, and ensure timely actions based on the results.
<i>Metropolitan / Municipal Authorities</i>	Manages local compliance, physical inspections, and fee collection for various permits and licenses.	Use the web-application for fee collection, virtual inspections, compliance tracking, and coordination with other authorities for streamlined processes.
<i>Environmental Protection Authority (EPA)</i>	Processes physical applications for Initial Environmental Examination (IEE) and issues NOCs for environmental compliance.	Handles IEE applications, inspections, and NOC approvals digitally, ensuring tracking and notifications through the portal.

<i>Traffic Engineering and Planning Agency (TEPA)</i>	Reviews applications for parking agreements and traffic impact, ensuring compliance with zoning and parking requirements.	Manages parking agreements and traffic compliance digitally, with approvals and assessments processed via the portal.
<i>Labour and Human Resource Department</i>	Conducts physical inspections and ensures compliance with labor laws, including employee registration, wage enforcement, and workplace safety.	Digitizes employee registrations, wage compliance checks, and workplace safety audits while allowing restaurant owners to track inspections and resolve disputes through the portal.
<i>Labour Inspectors</i>	Conduct physical inspections to ensure compliance with labor laws, including minimum wage and safety standards.	Log inspection reports and findings digitally, enabling automated follow-ups and recommendations visible on the portal.
<i>Building Control Authority (DHA/LDA)</i>	Reviews physical applications for building plans, commercialization approvals, and completion certificates.	Enables digital submission and tracking of building plans, zoning compliance, and structural approvals via the web-application.
<i>District Public Safety Commission (DPC)</i>	Handles complaints against police misconduct and ensures law enforcement support aligns with legal boundaries.	Digitizes complaint submissions, follow-ups, and resolutions, allowing restaurants to raise complaints or seek police support through the portal.
<i>Water and Sanitation Agency (WASA)</i>	Reviews physical applications and conducts inspections for water connections, sewerage setups, and compliance with sanitation standards.	Manages online applications for water/sewerage connections, monitors sanitation compliance digitally, and enables restaurant owners to track compliance directly through the portal.
<i>Punjab Employees Social Security Institution (PESSI)</i>	Processes manual registrations and compliance checks related to social security coverage for employees.	Digitizes employee registrations for social security and monitors compliance through automated updates, allowing restaurant owners to track employee statuses on the portal.
<i>Civil Defence Department</i>	Conducts physical inspections to ensure fire safety and emergency preparedness in commercial establishments.	Digitizes fire safety certifications and compliance checks, integrating inspection results into a centralized system accessible on the portal.
<i>Police Department</i>	Conducts background checks and physical verification of premises.	Provides digital police clearance certificates, conducts online verifications, and uploads results directly into the portal, minimizing delays.
<i>Food Business Operators (FBOs)</i>	Submits physical applications, follows up manually, and visits multiple offices for licenses.	Submit online applications, track progress, and receive digital licenses and approvals via the web-application, eliminating the need for multiple office visits.

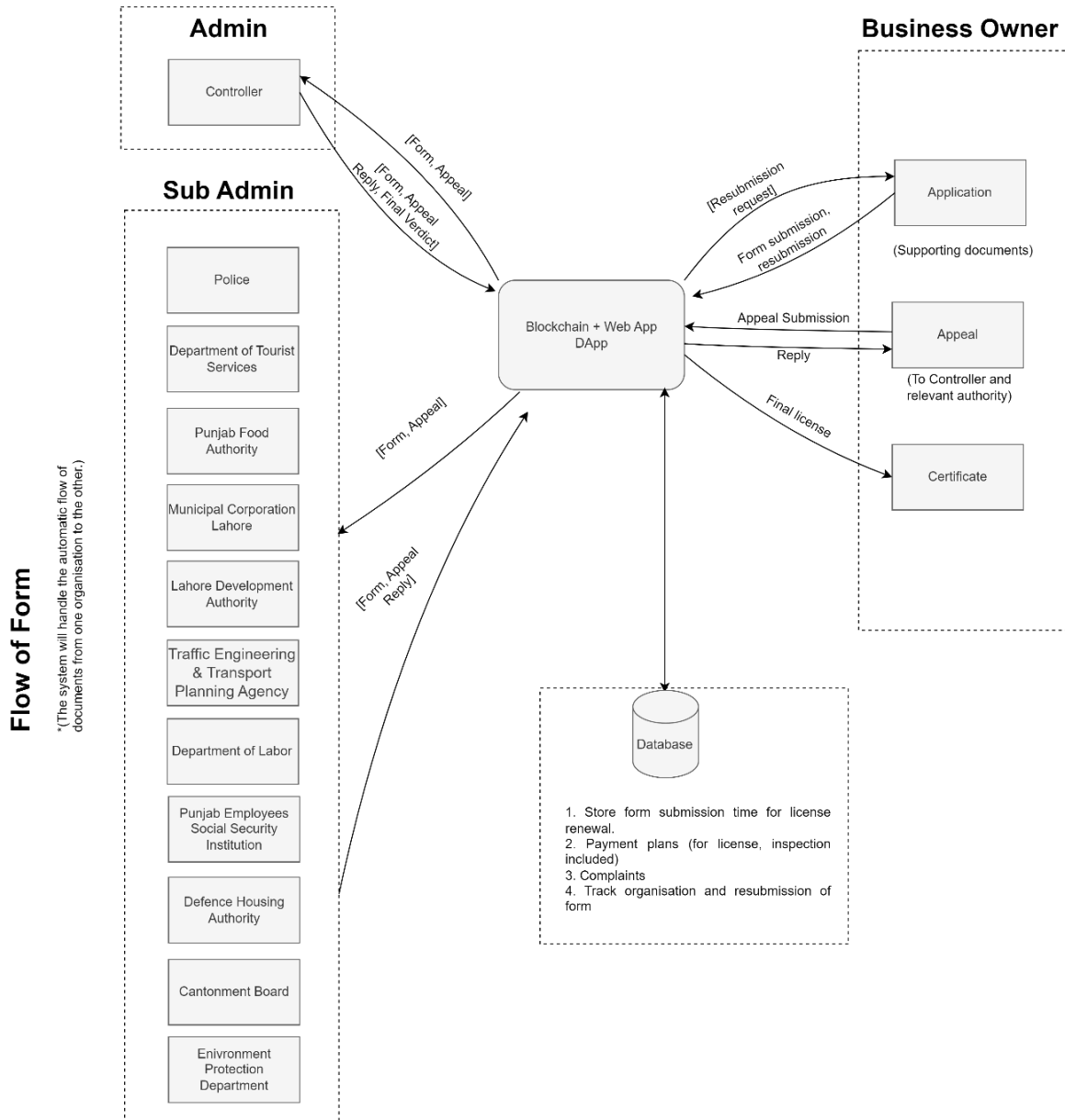
<i>Joint Secretary, Tourism Division, Islamabad</i>	Handles appeals and revisions for hotel and restaurant registrations.	Manages appeals and revisions for hotel and restaurant registrations digitally, ensuring transparency and timely resolution via the web-application.
<i>Hotels and Restaurants Committee</i>	Advises on classification, fair rates, and other regulatory matters.	Provides digital advice and recommendations on classification, fair rates, and other regulatory matters, with decisions logged and accessible through the portal for centralized transparency.

Source: Author's analysis based on regulatory review.

As a solution, the study proposes a web-application for restaurant business registration that prioritizes user-friendliness, transparency, and security through a blockchain-based architecture. Developed using the MERN stack, the system features a streamlined interface, decentralized data storage via Ethereum blockchain/IPFS, and MongoDB for efficient retrieval. It automates application submission, tracking, and approvals, replacing paper-based processes with secure digital workflows. Role-based access ensures tailored functionalities for users and administrators, while scalability allows future enhancements, including machine learning integration and expanded functionalities.

The web-application streamlines restaurant registration by automating processes from user registration and document submission to inspections, approvals, and license issuance, eliminating manual delays. Key features include dynamic admin management, an intuitive dashboard, online fee payments, license renewal, and a feedback mechanism. Using a decentralized blockchain-based system, applications flow seamlessly between authorities, with transparent appeal and review processes. The platform also tracks submissions, manages payments, handles complaints, and stores records centrally for accountability and efficiency. Below is a diagram representing the general process flow.

Figure 15 Mapping of General Process Flows in the Web-application



Source: Author's illustration.

The proposed policies digitize key regulatory processes for restaurant businesses, introducing a centralized digital inspection system for randomized checks, shared access to reports, and improved transparency. A one-time submission of employee medical fitness certificates via a web portal simplifies compliance and reduces administrative burdens. Additionally, integrating Commercialization Completion Certificates into the portal streamlines LDA approvals, enhances transparency, and ensures compliance with zoning regulations, fostering a business-friendly environment.