Building Permit Approval System: A Case Study of Kirtipur Municipality

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Abstract

In Nepal, the level of building code implementation is different in different municipalities and each municipality has a different building permit process. No research is done about the effectiveness of the building permit approval system in the local authority in Nepal. The study was conducted to review the effectiveness of the building permit approval system in Kirtipur Municipality. The research presents and discusses the findings from one of the methods used to measure effectiveness of the system. Fifty (50) questionnaires have been made to the house owner or the Principal Submitting Person (PSP) of the private building registered on FY 2076/77 or later. Four problems were identified from literature review relevant for Kirtipur Municipality and two problems were identified from group discussion with the house owners of ward number nine of Kirtipur Municipality. Most of the respondents felt that ineffectiveness of the building plan approval process was due to lack of transparency, information gap regarding Building permit process and delay to send notice by the ward. The causes of lack of transparency were found to be deficiency of complaint mechanism, discrepancy of the basis of designer, step of floor plan approval is not disclosed and delay in decision. The causes of the problem with the information gap regarding building permit process were building permit procedures not accessible via phone, responsible officials are not friendly to give information and building permit procedures not accessible via website. The problem of delay to send notice by the ward was delay to make site visits by the ward engineer, delay to send report by the ward engineer and due to reshuffling of engineers in ward offices.

Keywords
Building permit, local authority, transparency, complain mechanism, information gap

1. INTRODUCTION

1.1 Background

Housing as one of the basic needs is the fundamental right of all people guaranteed by the constitution of Nepal. Housing being a material asset and psychosocial symbol of achieved status, people construct private housing investing all their lifetime earnings. The migration of people is increasing in urban areas for better income opportunity, education, health, safety and other services. Later on, people want to reside in their place of migration which increases the demand of housing in urban areas. The social pattern of Single family from Joint family has increased the demand of no of residences in Nepal. We can see the division of Building vertically to distribute it to the number of Sons in a house. Residing in self-owned residence is a matter of pride in Nepalese society. Constructing a self-owned house is the dream of every individual. From the 1990s the government has acknowledged the need for the private sector's involvement in fulfilling housing needs in the country by enacting the Joint Apartment Act 1996.

There are a number of project delivery systems in the construction industry. Traditional methods, design-built methods and engineering-procurement-construction (EPC) are the most

common. These days the design-built method is one of the modern methods of project management and delivery. Construction involves multi-stakeholders to complete. The role and responsibilities are dependent on each other. Performance of one party has a tremendous effect on the other. Clients have been argued to be the most important construction industry participants as they initiate and fund the construction process from inception to completion [1]. There are three distinct types of building construction mechanism in practice in Nepal, prevalence of owner-built structures is seen [2]. In Nepal people own their own plot of land and construct a Building in it. Generally, contractors are selected on a per square feet rate, material is self-managed by the owner, building permit is taken from local authority and building is built. It gives the owner the responsibilities in terms of time, cost and quality.

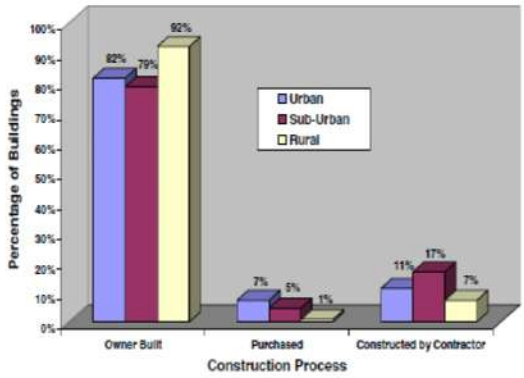

Figure 1: Building Construction Process for Residences in Kathmandu Valley [2]

There is poor institutional and technical capacity within the local authorities for implementing the building permit process [2]. The owner faces problems from the phase of floor plan approval up to receiving of completion certificate. Submission of building plans to the local or municipal authority for approval is very tedious and time consuming. The time involved ranges from a few weeks to months. The submission process of the building plans to the government authorities requires the authorities to check in details on the design for building by-laws compliance or non-compliance. It poses a major problem because the owner has difficulty to estimate the actual time required for a building project due to the uncertainty of the time taken for building plan approval. In developing countries, the difficulties and challenges are present alongside a general situation of socio-economic stress, chronic resource shortages, institutional weaknesses and a general inability to deal with the key issues [3].

1.2 Objective

The objectives of the research are as follows.

- To identify problems faced by building owners during Building permit approval and their possible solutions.

1.3 Rationale of Study

The purpose of this research is to explore the prevailing problems faced by private sector building owners during building permit approval and suggest the strategy to minimize them. The study will explore the effectiveness of the Building permit approval system in Kirtipur Municipality. Problems faced by private sector building owners will be identified which will help to make a strategy for making the Building permit approval system effective. The explorations of causes of problems will allow each stakeholder to be aware of their role in eliminating the problems in the building permit approval system.

2. METHODOLOGY

2.1 Research Design

Research design is "a logical plan for getting from here to there, where here may be defined as the initial set of questions and there is some set of conclusions about these questions" [4]. The study was conducted in several phases: literature review, questionnaire development, data collection, data analysis, findings, discussion and conclusion. Selection of papers relevant to the building permit approval were obtained and reviewed. Keyword search was used to identify the selected papers. (Copper, 2010) argued that secondary research channels such as Journals, proceedings and government reports grant useful information for the primary research.

The research method used in this research is qualitative case studies. The method used in this research is descriptive. The research consists of three parts, a basic survey of problems faced by the clients and their causes based on questionnaire and interview studies, the second part where challenges faced during the building permit process of other countries are studied. Third, the conclusion of problems faced by private sector Building Owners during the building permit process and their causes are identified. Fourth, recommendations are given with an emphasis on problem solving.

The research methodology is mostly qualitative in nature, and was conducted through the use of semi-structured questionnaires. The samples were selected through stratified random sampling. During this research visits on recently completed and under construction private residences in Kirtipur Municipality were performed for case study and collection of data from questionnaire survey and observations.

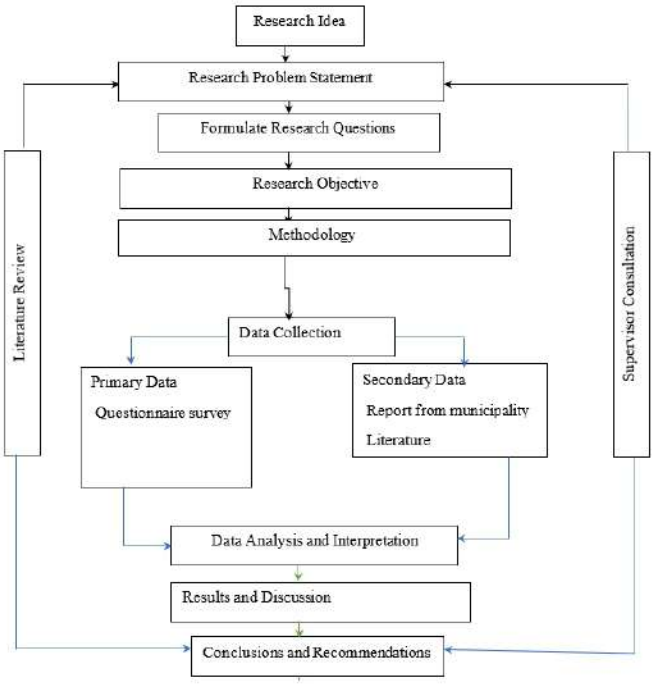

Figure 2: Flowchart of research methodology

2.2 Study Population

The Buildings that get registered for building permit from Kirtipur Municipality in the fiscal year 2076/77 or later will be studied in this research. For the purpose of calculation of sample size, the applications that got registered in the FY2076/77 are used. The building act, 2055 has provisioned the duration of construction of building to be two years, so the data from the last two years was used to calculate the sample size. The number of buildings that got registered were 509.

Figure 2: Total applications in Kirtipur Municipality (Source: Kirtipur municipality)

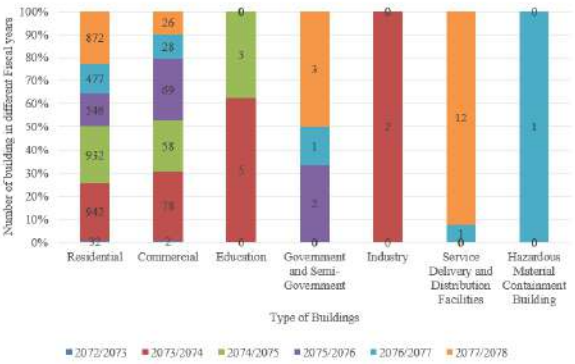

Figure 3: Building Type in Kirtipur Municipality (Source: Kirtipur municipality)

2.3 Sample Size

The sample size obtained for Kirtipur municipality was equally distributed to all the 10 wards of the municipality. A stratified random sampling method was used for the number of minimum sample size for questionnaire survey. The sample size is determined by using the formula used by Krejcie & Morgan in their 1970 article "Determining Sample Size for Research Activities"[5]. The formula used for these calculations is:

$$Sample\ Size(n) = \frac{X * X * N * P * (1 - P)}{(ME * ME * (N - 1) + (X * X * P * (1 - P))}$$

Where, n = Required sample size, X^2 = Chi square for the specified confidence level at 1 degree of freedom, N = Population size, P = The population proportion, ME = Desired Margin of error (expressed as a proportion)

According to Kirtipur Municipality the number of registered applications for Building permit in the fiscal year 2076/77 was 509. On considering population proportion as 0.5, the value of marginal error as 0.1 and the confidence interval of 10%, the value of chi-square is 2.706. From the calculation the sample size is achieved as 49.82 and the sample for questionnaire survey is taken as 50.

2.4 Questionnaire Design

Questionnaire regarding challenges faced during receiving completion certificate. Following problems in floor plan approval were extracted from literature review which is relevant with the process of floor plan approval in Nepal.

1. Lack of knowledge
2. Lack of transparency
3. Unofficial payment
4. Ineffective communication

The process of floor plan approval of Kirtipur Municipality was studied and the meeting with the engineers and responsible bodies of the municipality was held and the aforementioned problems were extracted.

1. Rejection of application
2. Delay to send notice by the ward

2.4 Validity and Reliability

As human beings are the primary instrument of data collection and analysis in qualitative research, interpretations of reality are accessed directly through observations and interviews. Thus, we are closer to reality than if a data

collection instrument had been interjected between us and the participants [6]. There are four types of triangulations, the use of multiple methods, multiple sources of data, multiple investigators or multiple theories to confirm emerging findings [7]. Here internal validity is addressed by triangulation. Triangulation validates the data through the use of household questionnaires, key informant interviews, and observations. Cronbach alpha was used to test consistency of the questionnaire. Higher the value of alpha, the more reliable the questionnaire are. Researchers have indicated 0.7 to be an acceptable reliability coefficient. The Cronbach's alpha. coefficient for the questionnaire is given in Table below.

Table 2: Reliability Statistics

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No of Items
0.819	0.805	30

2.5 Data Collection

Primary data are the base of the research. More the actual figures collected from the primary data will be the precise of the study. For the collection of primary data, following methods will be used:

a) Questionnaire survey- Semi-structured questionnaire survey was conducted with the private sector building owner. List of issues was prepared to guide the structured questionnaire with the house owner. Total 50 questionnaires were conducted.

b) Observations –The observation of the Buildings owned by the interviewee and their construction stages were noted.

Secondary data were collected from the literature study of national and international articles about the floor plan approval process and the challenges faced. The published journals, reports, internet/websites related to Building permits are another source of data that is involved in this research.

3. RESULTS

Descriptive strategy was used for data analysis and the end product being richly descriptive. The analysis of the data involves identifying recurring patterns that characterize the data. Findings are the recurring patterns or themes supported by the data from which they were derived [6].

Demographic Information Gender: Among 50 respondents, Majority of the respondents in this survey were male 76% while few were female 24%. This shows that males are more involved in Building permit process than females.

Level of Education: The majority of the respondents (44.2%) have completed their bachelor's degree. 27.9% respondents have completed their diploma level education and 23.30% respondents have completed their master's degree. Few respondents (4.6%) were found to have education of certificate level.

Building Category: As per Building act there are four categories of building types that are class A, class B, class C and class D. The randomly sampled buildings under study were under class B and class C. There were 28 no of class B buildings, which were 56 percent of total population. There were 22 no of class C buildings, which were 44 percent of total population.

Construction Stage of Building: Maximum number 22 of the buildings were completed which were 44% of the sample size. Thirteen (13) number or 26% of the buildings were DPC completed. Twelve (12) numbers or 24% of the buildings were completed. The least number 3, or 6% of the sampled buildings were ongoing foundation works.

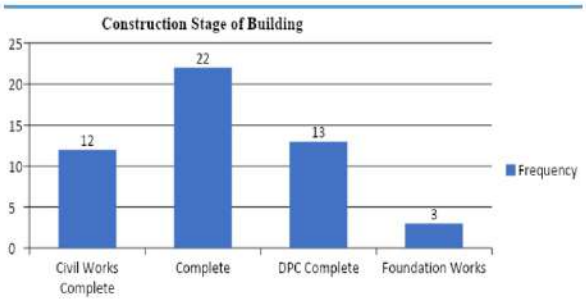

Figure 3: Construction Stage of the building

Time required for building permit approval: The average time taken for granting the building permit approval as mentioned in Nagarik Bada Patra is two months. As per our study, it shows that only 54% of building owners got building permit approval on time, whereas 26% approvals were granted in between 3 to 5 months,12% were approved within six to eight months, 6% were approved within nine to eleven months and 2% of building got approval after one year.

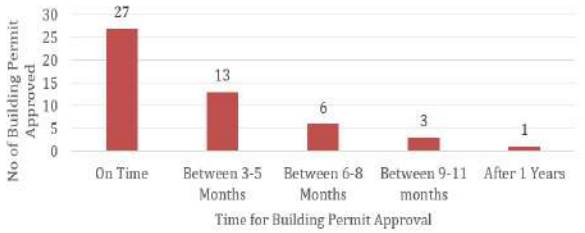

Figure 4: Time required for building permit approval

Problems Faced by Owners: The problems faced by building owners were asked to rate in the category of very low, low, average, high or very high.

Table 3: Frequency of rating of problems faced by Owner

S.N.	Description		Very low	Low	Average	High	Very high	Total	Highest frequency
1	Information gap regarding Building permit process	N	1	13	13	19	4	50	High
		%	2.0	26.0	26.0	38.0	8.0	100.0	
2	Rejection of application	N	11	22	4	6	7	50	Low
		%	22.0	44.0	8.0	12.0	14.0	100.0	
3	Lack of transparency	N	0	5	17	18	10	50	High
		%	.0	10.0	34.0	36.0	20.0	100.0	
4	Ineffective communication	N	1	16	9	18	6	50	High
		%	2.0	32.0	18.0	36.0	12.0	100.0	
5	Unofficial payment	N	12	35	0	1	2	50	Low
		%	24.0	70.0	.0	2.0	4.0	100.0	
6	Delay to send notice by the ward	N	3	9	17	16	5	50	Average
		%	6.0	18.0	34.0	32.0	10.0	100.0	

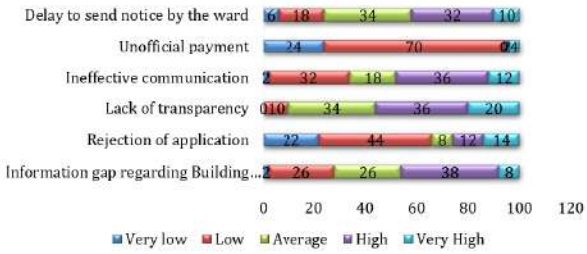

Figure 5: Frequency of rating of problems faced by Owner in %

Information gap regarding building permit process: Majority of the respondents (46%) rated the problem of information gap regarding building permit process as High. Similarly, 26% of respondents have rated the problem as average and 28 % of total respondents have said that the problem regarding building permit process is low. Since, most of the respondents have rated high; there is a major problem with the information gap during the building permit process.

Rejection of application: Most of the respondents (66%) have rated the problem of rejection of approval from ward/municipality during building permit process as Low. 12% and 14% of total respondents rated the problem as High and Very High respectively. Whereas, only 8% of respondents have an average rating for the problem faced due to rejection of application. In general, most of the respondents have low ratings for the problems faced due to rejection of application therefore this problem can be considered less significant or insignificant.

Lack of transparency: 56% of the total respondents have rated high for the problem of lack of transparency in the building permit process approval. 34% has rated average and 10% has rated Low for the same problem. Majority of the respondents have rated that lack of transparency is the major problem faced by the building owners during the building permit process.

Ineffective communication: The problem of ineffective communication has been rated high by 48% respondents. 32% respondents have rated low and 12% respondents have rated average.

Unofficial payment: Most of the respondents (94%) have responded that there is no problem of unofficial payment during the building permit approval process. Only 6% was rated high for the same parameter. The problem of unofficial payment can be considered insignificant as the majority of respondents has rated low.

Delay to send the notice by the ward: 42% of respondents have rated high for the problem of delay to send notice by the ward. 34% respondents have rated average. 18% respondents have rated Low and 6% respondents have rated Very Low for the particular problem. Delay to send notice by the ward is a significant problem

4. DISCUSSION AND CONCLUSIONS

Forty-six (46) percent Building owner received floor plan approval within time mentioned by Municipality (two months) from the date of registration of application. Fifty-four (54) percent Building owner received floor plan approval late than the time mentioned by Municipality (after two months) from the date of registration of application. Among the problems faced by private sector building owners during building permit approval are lack of transparency, information gap regarding building permit process and the delay to send notice by the ward. The causes of lack of transparency were found to be deficiency of complain mechanism, discrepancy of the basis of designer, step of floor plan approval is not disclosed and delay in decision. The causes of the problem information gap regarding building permit process were building permit procedures not accessible via phone, responsible officials are not friendly to give information and building permit procedure not accessible via website. The problem of delay to send notice by the ward was delay to make site visit by the ward engineer, delay to send report by the ward engineer and due to reshuffling of engineers in ward offices.

5. RECOMMENDATIONS

Following recommendations are made to make the Building permit system effective.

- Queuing system should be introduced to enhance transparency in the Building permit approval system.
- Information regarding the Building permit system should be updated on the website and be accessible to the general public.
- Sufficient staff should be provisioned in the ward office to enable site visit and sending reports in time.

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