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Clients' Knowledge on Building Permit Acquisition Process - The Case of Sunyani East Municipal Assembly

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Abstract
The study assessed the clients' knowledge on building permit acquisition procedures in Ghana using a case study approach. A sample size of 346 comprising clients and would-be clients in the Sunyani East Municipal Assembly (SEMA) were interviewed on the permit acquisition procedures. The study area was stratified into 18 urban sectors which share common socio-economic characteristics. About 19 respondents were selected randomly from the final subjects proportionally from the 18 strata. An interview guide prepared in Epi Info 7 was then used to conduct the household interviews. The average score rate was 46% for clients on questions set to cover stages 1 to 6 of building permit acquisition procedures and that for questions on permit regulations was 55%. Building permit applicants in SEMA are not well-informed on the permit acquisition process and regulations governing permit issuance in Ghana. The Pearson χ^2 tests averages of 36.156 and 32.901 compared with the critical value of 13.28 at 4df, 11.34 at 3df and 6.64 at 1df using alpha level of 1%, led to assuming of these alternative hypotheses. About 86% of prospective permit would prefer e-permit application if introduced by the assembly.
Keywords: clients' knowledge, building permit, acquisition process, case study, Sunyani East Municipal Assembly

1. Introduction

One of the quality control methods in the construction industry is the enforcement of regulations requiring the acquisition of permits before construction starts (Emmitt & Gorse 2014). The issuance of building permit is based on compliance of designs with standards and specifications and the procedures associated with obtaining the permit. However, interruption to flow of pre-construction activities may lead to delays and possibly cost overruns as well as decreased in product value (Kpamma & Adjei-Kumi 2013; Moullier 2009). The design solution and many work phases in a construction project delivery process are subject to checking and approval by regulatory authorities and these interventions by the authorities cause uncertainty and constraints to the permit acquisition process (World Bank 2013b; Koskela 1992). In most developing countries according to World Bank (2013a), the proportion of buildings that do not go through any form of controls at the design, construction or post-construction stages is mostly estimated to be between 60 and 80%.

Botchway et al. (2014), have observed that most urban growth in Sub-Saharan African countries is mainly a place where some clients do not have much knowledge regarding building permit acquisition process that end up putting illegal structures in an unplanned manner, hence creating uneven settlements in the urban and rural areas (Oppong & Yeboah 2013; Freiku 2003). Most urban and rural areas in Ghana are challenged with weakening environmental conditions and a frail public sector incapable to provide adequate services such as difficulty in controlling fire outbreaks due to unplanned settlements (Botchway et al. 2014).

A study by Taiwo & Afolami (2011) stated that, about 50% causes of building failure are as a result of poor or faulty design and this could be checked if clients follow the right process in acquiring building permits. In the month of November 2012, a six storey building housing Melcom (a chain supermarket) at Achimota collapsed killing about 40 people (Asante 2012; Okoye 2012). So severe was the impact that, national activities came to a standstill. Shocking news was revealed by the Member of Parliament for the Achimota area and was confirmed by Accra Metropolitan Assembly (AMA) Chief Executive that, owner of the six storey building did not acquire a building permit before the commencement of the project (Amponsah 2012). Botchway et al. (2014), stated that in the 2007 Annual Report, Government through National Disaster Management Organization (NADMO) spent GH¢135.62 million in providing temporary shelter and other basic needs for displaced people in the Greater Accra who have constructed in waterways and unauthorized places.

It is now worrying that many clients put up their buildings without obtaining building permit or approval from the statutory bodies in the MMDAs (Oppong & Yeboah 2013). This is partly due to overly complicated procedures, cost and ignorance (Moullier 2009). This has resulted in unplanned siting of structures, use of unapproved drawings, building on water ways, perennial flooding etc., within urban and sub-urban centres of these assemblies (Aseidu & Agyeman 2009; Freiku 2003). These among other reasons have prompted the need to assess the client knowledge in the building permit acquisition procedures in Sunyani East Municipal Assembly (SEMA) as case study. The outcomes of this study will help local authorities control unauthorized structural development, improve disaster management strategies, plan proper developmental schemes and educate clients on the importance of building permit.

The following research questions were framed in line with the research problem:

1. Do residents in Sunyani East Municipal Assemble have adequate knowledge of permit acquisition process and existing building regulations in Ghana?
2. Are there challenges in the current permit acquisition process in Ghana?
3. Is it true that building applicants/clients would not prefer electric permit application process to that of current manual process?

2. Structure of Ghana's Building Permit Acquisition Process

The Local Government Act 1993, Act 462 mandates MMDAs to plan and regulate orderly physical developments within their jurisdictions. They are expected to carry out this mandate by effectively managing the issuance of building permits to ensure that physical development is in conformity with development schemes of the Assemblies. Any person or organization which intends to commence with the construction of a building whether for residential or for other purposes in any assembly area of jurisdiction must obtain a building permit. This is to ensure among other things that, the proposed project conforms to the building regulations and development control guidelines (Government of Ghana 1993). The Act 462 also spells out clearly the process every client should go through in acquiring a building permit before putting up a structure. Clause 8 of the National Building Regulations, 1996 (L.I.1630) requires that building permits applications submitted to MMDAs by developers should be approved within three months. Issuing building permits with short waiting times is essential in providing satisfactory services for clients (World Bank and IFC 2013).

2.1 Process in Relation to Building Permit Acquisition

It is obvious that complex services are realized easier in a form of processes. For optimizing and developing of any unified activities, a suitable understanding about current process work in an organization is essential (Alizadeh 2012; Miles et al. 1978). The word process is a network of activities, which are repeated under the time whose purpose is to create value for internal or external customers (Alizadeh 2012). In reality, sequences independent and linked procedures, which follow a certain goal, make a process. The suitable way for defining a process is to clarify which characters it has. A process begins with a starting point and finishes to the end point. It has to do with a customer and a supplier relationship (Bertelsen & Emmitt 2005; Karltun et al. 1999; Bergman & Klefsjö 1994). Similarly, it comprises network and input activities which if repeated uninterruptedly produce results. The result can be a product or a service. By focus to a process, attention move from outcome to activity chain which make the outcome (Kpamma & Adjei-Kumi 2013). When the study of process is in focus, the crucial question is, how the result are produce, instead of who does what. Further, focus on process, creates better possibility to achieve a common vision within an organization (Bergman 2001).

Furthermore, by studying process of an organization, the main focus would be on the real activities within the organization, and not to the function, which create the job. Main process describes activities of organization, which was created according to customer need. The selection of main processes is depending on company's goal, vision, and strategy and business idea (Miles et al. 1978). In order for an individual or group to obtain a building permit from the ensuing discussions, one have to know and understand the process involved in acquiring building permit to help put up buildings, do extension works to an existing building, demolish etc. These should be in conformance with the laid down rules and regulations in MMDAs to avoid demolition of building and future disasters (Local Government Act 1993; Alizadeh 2012).

2.2 Buildings Permit Acquisition Procedures in Ghana

The first step you need to take to get a building permit in Ghana is to submit an application to the Land Commission for land title certificate (Government of Ghana, 2008). Before you can get a permit, this government agency has to confirm that the land legally belongs to you (Botchway et al. 2014). After the Land Commission has confirmed that the applicant do indeed own the land, the building permit process then begin with the Town and Country Planning Department (TCPD). The TCPD will assemble a committee of inspectors to observe the land and analyse the client's building or house plans. If the plans are approved, a commendation is made to the Statutory Planning Committee (SPC), which is the government agency that will really administer the issuance of the building permit once the documentation has been reviewed (TCP Ghana 2010; Ministry of Local Government and Rural Development 2006). Stages and duration for the issuance of building permits at SEMA are indicated in Table 1. It takes a total of 90 working days for an applicant to be issued a building permit at SEMA (World Bank & IFC 2013; Quartey 2011).

Table 1. Stages and duration for the issuance of building permits at SEMA

Activity	**Duration (Days)**
General screening of documents (site plan, drawings, land title certificate) by Town and Country planning Department	14
Vetting of building plans by Town & Country planning Department	14
Vetting of application by Technical sub committee	21
Approval of application by Statutory Planning Committee	7
Signing of drawings by Municipal or District Town and Country planning Office	7
Calculation of permit fees and payment by applicant	13
Submission of Site plans and building permit certificate to District or Municipal Chief Executive	7
Signing of building permit certificate by District or Municipal Chief Executive	7
Total	**90**

(Source: TCP Ghana 2010; Quartey 2011).

A Development Permit will then be issued by the TCPD pending final building permit to be issued by the Assembly. Ideally the TCPD and SPC, according to the interviews and available records are expected to meet once every 2 months to consider building permit applications. When all requirements are met, then building permit could be issued in 3 months after submission of the application. If possible submission of application documents, confirmation of land title from the Lands Commission as well as inspection of site and submission of report on site take 2 weeks. The TCP meeting is held 2 months after site inspection, followed by a meeting of the SPC 2 days later for the approval or otherwise of the building permit (Kpamma & Adjei-Kumi 2013).

In the case of developments like filling stations, hotels and guest houses that require the acquisition of Environmental Protection Agency (EPA) and fire permits, issuance of a building permit is subject to production of these permits. Hence the reliability of the flow in processing building permits for this category of developments, among others, also depends on the processing of the EPA and Fire Permits (Kpamma & Adjei-Kumi, 2013).

3. Methodology

3.1 Description of Study Area

Sunyani East District is one of the twenty-two administrative districts in the Brong Ahafo region of Ghana. It lies between Latitudes 70.20°N and 70.05°N and Longitudes 20.30°W and 20.10°W. The Sunyani district lies within the middle belt of Ghana with heights from 229-376m above sea level. The topography of the district is fairly flat thus suitable for large scale agricultural mechanisation. Cost of constructing houses and roads is relatively minimal due to the nature of the topography. The district has a total land area of 829.3 square kilometres and Sunyani is the regional capital for Brong Ahafo. One third of the total land area is not inhabited. The district contains 52 communities from which 18 of them are the sole urban dwellers and the remaining 34 are categorised as rural areas within the District (Sunyani Municipal Assembly 2008). The research was conducted in the 18 communities which are described as the sole urban dwellers.

3.2 Population and Sample size

The population boundaries were limited to the Sunyani East Municipality with houses population being 9784. Out of this number, 74% represented rural houses population and 26% represented 2544 of the urban houses population (Population And Housing Census 2010). Since the study focused on permits issued within the urban settlements, the catchment area was limited to the urban centres. To determine the appropriate sample size for the study (Shuttleworth 2009), a calculation was made based on the simplified formula by Israel (2013). Using confidence level of 95% and acceptable margin of error of 5%, a representative sample size of 346 was obtained.

3.3 Sources of Data Collected

In order to collect reliable and valid information, the researchers targeted clients such as houses and fuel stations owners, tenants, co-habitats etc., with various professions and officers handing building permits related documents. Interview guide was the instrument used in gathering the primary data. The secondary data was sourced from the TCPD, which included reports, regulations etc. The records helped to identify how others have defined and measured key concepts in the building permit acquisition process. With the aim of ensuring the credibility of findings, interviews and personal observations were used to verify records, records and interviews were used to verify observations while records and observations were used to verify interviews (Zucker et al. 2008).

3.4 Study Approach

The interview guide was designed to gather information covering relevant issues to the objectives of the study. The interview guide comprised close ended multi-choice type of questions to facilitate categorization. The study area was stratified into 18 urban sectors which share common socio-economic characteristics. Exactly 19 respondents were selected randomly from the final subjects proportionally from the 18 strata (Blakstad 2009). An interview guide prepared in Epi Info 7 which is a data collection, management, analysis, visualization, and reporting software for public health professionals was used to conduct the field interview. The interview guide was categorised into three sections. Section A solicited the background data of respondents. Questions set to assess clients' knowledge in the building permit acquisition process were in section B. Section C assessed knowledge of respondents on existing regulations governing permit acquisition process and the challenges clients face during the permit application acquisition process in Ghana. The respondents were persons 18 years and above who qualified under the National Building Regulations of 1996 (L.I.1630) to apply for a building permit in Ghana. Residents comprising tenants, owners and others (e.g care takers, co-habitats) living in the study area were interviewed. The researchers also went to SEAM and Lands Commission to obtained stakeholders' qualitative assessment of the existing process to assist in identifying process areas of key research concern. An analysable sample size of 346 was obtained with zero nonresponse rates.

3.5 Data Analysis

The information collected from the survey was checked for accuracy. The Epi Info 7 software was used in the data analysis. The software provided a broad range of capabilities for the entire analytical process. The crosstabs which display the relationship between two or more nominal variables were used in the data analysis. In this method, the size of the tables was determined by the number of distinct values for each variable, with each cell in the table representing a unique combination of values. Pearson Chi-square (χ^2) statistical independence test was done to assess the relationships between thee nominal variables. The significance level (P-value) at an alpha level of 0.01 which is the probability of observing a test statistic for the observed test statistic, if in fact the null hypothesis is true was carried out. The Lambda test was used to estimate the percent reduction of error (PRE).

4. Results and Discussion

3.1 Background Information of Respondents

Out of the 346 respondents, 171 were found to have resided in the 18 communities between 1-10 years, 111 people resided above 10 years and the remaining have resided below 1 year. Also, 39% of those interviewed were females, whiles their males counterparts were 61%. Close to 243 of the interviewees' age ranged from 26 to 45 years. About 89% of these respondents were educated to at least basic level and therefore may have the intellectual capacity to either read or write. In all, 144 respondents were gainfully employed: famers (39), miners (3), public servants (47) and teachers (55) with the remaining 202 being apprentices, business operatives, service personnel, etc. The occupant status include 115 house owners, 135 tenants and 96 caretakers, co-habitats etc. Of the randomly sampled buildings, 284 were residential buildings while the remaining were commercial buildings, industrial buildings, fuel or gas stations, etc.

3.2 Client Knowledge on Building Permits Acquisition Process

The following hypotheses were formulated to find out whether building permit clients have adequate knowledge in the permit acquisition process:

Null Hypothesis (H_{01}): Building permit Clients in SEMA are knowledgeable in the building permit acquisition process in Ghana.

Alternative Hypothesis (H_{a1}): Building permit Clients in SEMA are not knowledgeable in the building permit acquisition process in Ghana.

Authors cross-tabulated the 6 stages which are oriented towards the building permit acquisition process responses with that of the responses of clients who have and those have not applied for building permit in SEMA. The crosstab in Table 2 shows that prospective development permit applicants are not knowledgeable in permit acquisition process in Ghana. Questions that were answered correctly ranged between 56 (stage 1) and 204 (stage 3). The average score rate was 46% (955/2076%). Also, the score rate for those who have not apply for permit before was 4% higher the erstwhile applicants.

Table 2. Client's knowledge on building permit acquisition process in stages 1 to 6

Stages in the Building Permit Acquisition Process	**Applied for permit before?**		**TOTAL**
In obtaining a building permit, the first step is to?	**Yes**	**No**	
a. Obtain a fire service certificate*	43	13	56
b. Get a copy of TCP Form	63	93	156
c. Obtain land title certificate from LC	60	36	96
d. Submit an application to the LC for permit	29	9	38
At stage 2 of building permit acquisition process applicants are to?	***Yes***	***No***	***TOTAL***
a. Buy the Permit Application Form and TCP Form 1 from local Assembly*	84	111	195
b. Seek permission from chiefs and District Assembly Works Department	52	28	80
c. Seek permission from court and District Assembly Works Department	18	4	22
d. All the above	41	8	49
In the third stage, potential builders or developers are required to?	***Yes***	***No***	***TOTAL***
a. Contact a consultant for advice at the TCPD within the assembly	49	34	83
b. Complete in full, both the Building Permit Application Form and the TCP Form 1*	102	102	204
c. Preparation of bill of quantities and submit to assembly for permit	26	7	33
d. Submit the Building Permit Application Form and the TCP Form	18	8	26
What is required of applicants at stage 4 of the permit acquisition process?	***Yes***	***No***	***TOTAL***
a. Submit completed forms with all relevant attachments to TCPD in local area*	80	120	200
b. Submit tender document and Building Permit Application Form to TCPD	49	21	70
c. Handing over the site to a contractor and submit the TCP Form to TCPD	61	9	70
d. Procurement of building permit at the Works Department for a fee	5	1	6
At stage 5 of the buildings permit acquisition process, the Assembly is to?	***Yes***	***No***	***TOTAL***
a. Process the submitted forms by Statutory Planning Committee*	70	117	187
b. Procure building materials at the Works Department	83	16	99
c. Issue permit to commence the construction of building	37	17	54
d. Prepare bill of quantities and submit to assembly	5	1	6
What should applicants do at the stage 6 of the permit acquisition process?	***Yes***	***No***	***TOTAL***
a. Collect the approved building permit only from the Assembly	77	81	158
b. Make additional corrections if any and resubmit application	37	13	50
c. Pay approved fee and collect permit from Assembly*	61	52	113
d. Develop land and apply for supplementary permits	20	5	25
TOTAL	**195**	**151**	**346**

* Correct answer

Pearson χ^2 tests and directional measures was further conducted to establish whether there is significant relationship between client knowledge and building permit acquisition process in Ghana. Results in Table 3 showed that the χ^2 tests values ranged from 12.097-62.648. Comparing the χ^2 tests range with the tabulated value of 11.34 at 3df (degrees of freedom) using alpha level of 1%, led to acceptance of the alternative hypothesis that building permit Clients in SEMA are not knowledgeable in the permit acquisition process. The average percent reduction error (PRE) for rejecting the null hypothesis was 4%. Consequently, 4% of the errors in predicting the relationship between buildings permit applicants' knowledge and acquisition process can be reduced by taking into account whether they have applied for building permit before or not.

Table 3. Statistical test results on building permit acquisition process

Stage in Permit acquisition process	**Pearson Chi-Square Tests and Directional Measures**		
Stage 1 - Statistics	***Chi-Square***	***Likelihood Ratio***	***Linear-by-Linear Asso.***
Value	33.310	34.280	1.416
Degree of freedom (df)	3	3	1
Asymp. Sig. (2-sided)	0.000	0.000	0.234
Nominal by Nominal - Lambda	Value	Asymp. Std. Error[a]	
Symmetric	0.088	0.035	
In obtaining a building permit, the first step is to?	0.000	0.000	
Have you ever applied for building permit?	0.199	0.074	
Stage 2 - Statistics	***Chi-Square***	***Likelihood Ratio***	***Linear-by-Linear Asso.***
Value	37.076	39.402	34.693
Degree of freedom (df)	3	3	1
Asymp. Sig. (2-sided)	0.000	0.000	0.234
Nominal by Nominal - Lambda	Value	Asymp. Std. Error[a]	
Symmetric	0.089	0.044	
What is done at 2nd stage of permit acquisition process?	0.000	0.000	
Have you ever applied for building permit?	0.179	0.084	
Stage 3 - Statistics	***Chi-Square***	***Likelihood Ratio***	***Linear-by-Linear Asso.***
Value	12.097	12.704	2.598
Degree of freedom (df)	3	3	1
Asymp. Sig. (2-sided)	0.007	0.005	0.107
Nominal by Nominal - Lambda	Value	Asymp. Std. Error[a]	
Symmetric	0.000	0.000	
In the 3rd stage, potential builders are required to?	0.000	0.000	
Have you ever applied for building permit?	0.000	0.000	
Stage 4 - Statistics	***Chi-Square***	***Likelihood Ratio***	***Linear-by-Linear Asso.***
Value	55.802	60.202	52.826
Degree of freedom (df)	3	3	1
Asymp. Sig. (2-sided)	0.000	0.000	0.000
Nominal by Nominal - Lambda	Value	Asymp. Std. Error[a]	
Symmetric	0.135	0.044	
In stage 3, prospective permit applicants are required to?	0.000	0.000	
Have you ever applied for building permit?	0.265	0.080	
Stage 5 - Statistics	***Chi-Square***	***Likelihood Ratio***	***Linear-by-Linear Asso.***
Value	62.648	66.488	37.183
Degree of freedom (df)	3	3	1
Asymp. Sig. (2-sided)	0.000	0.000	0.000
Nominal by Nominal - Lambda	Value	Asymp. Std. Error[a]	
Symmetric	0.194	0.066	
At stage 5 of the permit acquisition process, Clients are to?	0.082	0.075	
Have you ever applied for building permit?	0.311	0.075	
Stage 6 - Statistics	***Chi-Square***	***Likelihood Ratio***	***Linear-by-Linear Asso.***
Value	16.001	16.855	4.904
Degree of freedom (df)	3	3	1
Asymp. Sig. (2-sided)	0.001	0.001	0.027
Nominal by Nominal - Lambda	Value	Asymp. Std. Error[a]	
Symmetric	0.012	0.037	
Applicants are require to do what at stage 6 permit process?	0.000	0.000	
Have you ever applied for building permit?	0.026	0.082	

a. Not assuming the null hypothesis.

Note: The tabulated Pearson Chi-Square value at 3 degrees of freedom using alpha level of 1% was 11.34

3.3 Client Knowledge on Existing Regulations Governing Building Permit

For the purpose of finding whether building permit clients are knowledgeable in regulations governing building permits in Ghana, the following hypotheses were framed:

Null Hypothesis (H_{02}): Building permit Clients in SEMA are knowledgeable in regulations governing building permit in Ghana.

Alternative Hypothesis (H_{a2}): Building permit Clients in SEMA are not knowledgeable in regulations governing building permit in Ghana.

Responses of the building permit regulations as enshrined in National Building Regulations of 1996

(L.I.1630) were cross-tabulated with the responses of clients who have and those have not applied for building permit in SEMA. Contingency Table 4 shows that permit applicants are not knowledgeable in regulations governing building permit in the Ghana.

Questions that were answered correctly ranged from 122 to 304. Though the average score rate of 55% was above the 50% mark, it represents a weak pass. Also, the score rate for those who have not apply for permit before was 5% higher the erstwhile applicants.

Results in Table 5 showed that the χ^2 tests values ranged from 16.292 to 57.670. Pearson χ^2 tests and directional measures was conducted to establish whether there is significant relationship between client knowledge and regulations governing building permit in Ghana. Comparing the χ^2 tests range with the tabulated value of 13.28 at 4df, 11.34 at 3df and 6.64 at 1df using alpha level of 1%, led to acceptance of the alternative hypothesis that permit Clients are in SEMA not knowledgeable in regulations governing building permit in Ghana.

Averagely, PRE of 4.4% was made for rejecting the null hypothesis. Therefore, 4.4% of the errors in predicting the relationship between building permit applicants' knowledge and acquisition process can be reduced by taking into account the whether they have applied for building permit before or not.

Also, 69% (240) of the respondents were ignorant of a special provision in the building regulations that prospective applicants can start development after 3 months if they are not informed about the grant or refusal of permit application.

3.4 Problems Clients Faced in Acquiring Building Permit

The following problems in Table 6 were confirmed by respondents as challenging to the permit applicants at SEMA and are sometimes unresolved for between 5 to 12 months during the permit acquisition process.

In order to establish whether building permit clients would prefer e-permit application process to that of current manual process, the following hypotheses were formulated:

Null Hypothesis (H03): Building permit clients would not prefer e-permit application process to that of current manual process.

Alternative Hypothesis (Ha3): Building permit clients would prefer e-permit application process to that of current manual process.

A crosstab results showed that 296 (86%) of respondents would prefer e-permit application. The statistic test in Table 7 was done to confirm the hypotheses. Pearson χ^2 value of 9.167 was compared with critical value of 6.64 at 1df using alpha level of 1% ($p<0.01$). This led to not assuming the null hypothesis that building permit clients would not prefer e-permit application process to that of current manual process if introduced in SEMA. There was PRE of 0.2% for not assuming the null hypothesis using lambda test. The relationship is statistically significant because less than a 1% chance exists that this relationship could be found in a sample when no relationship exists in the 2544 urban houses population in SEMA.

Table 4. Client's knowledge on building permit regulations in Ghana

Building Permit Regulations	**Applied for permit before?**		**TOTAL**
How many days will it take applicant to receive an approved building permits?	**Yes**	**No**	
a. < 30 working days	20	3	23
b. 30 working days	44	17	61
c. 60 working days	44	20	64
d. 90 working days*	57	70	127
Which of the following is needed to form part of a building permit for filling station or building for public use?	***Yes***	***No***	***TOTAL***
a. Fire service certificate*	88	98	186
b. Certificate of development	49	29	78
c. Certificate of membership	22	5	27
d. Land ownership certificate	36	19	55
Development and building permits issued are valid for and to be renewed every	***Yes***	***No***	***TOTAL***
a. 5 years*	52	96	148
b. 10 years	38	25	63
c. 15 years	59	23	82
d. 20 years	27	7	34
Are building permits in Ghana granted to cover permanent and temporary or makeshift structures?	***Yes***	***No***	***TOTAL***
No	36	6	42
Yes*	159	145	304
Which of the following legally specify that one has to obtain building permit before putting up a house?	***Yes***	***No***	***TOTAL***
a. Public procurement Act 2003 of Ghana, Act 663	17	1	18
b. National Building Regulations of 1996 (L .I. 1630) *	118	134	252
c. Ghana Environmental Assessment Regulations of 1999 (L. I. 1723)	54	14	68
d. Ghana Fire Precaution Premises Regulations of 2003 (L. I. 1724)	6	2	8
What are the consequences clients are likely to face when they put up buildings without permits?	***Yes***	***No***	***TOTAL***
a. Demolition and finds*	57	88	145
b. Alteration and compensation	9	0	9
c. Demotion and compensation	45	13	58
d. Prosecution in court	62	47	109
e. All the above	22	3	25
Which of the following additional permit is needed to enable safe working on the construction or mining site?	***Yes***	***No***	***TOTAL***
a. The condition of contract and specifications	10	4	14
b. Environmental Protection Agency (EPA) permit*	109	122	231
c. Registration of company and specifications	48	10	58
d. Land evaluation report from Land Evaluation Board	28	15	43
What is the legal age for acquiring a building permit in Ghana?	***Yes***	***No***	***TOTAL***
a. Below 18 years	8	3	11
b. 18 – 25 years	48	23	71
c. 26 – 33 years	22	5	27
d. Above 18 years*	46	76	122
e. No idea	71	44	115
TOTAL	**195**	**151**	**346**

* Correct answer (s)

Table 5. Statistical test results on building permit regulations

Building Permit Regulations Variables	**Pearson Chi-Square Tests and Directional Measures**		
Building permit application maturity period	***Chi-Square***	***Likelihood Ratio***	***Linear-by-Linear Asso.***
Value	31.464[b]	33.106	28.228
Degree of freedom (df)	4	4	1
Asymp. Sig. (2-sided)	0.000	0.000	0.000
Nominal by Nominal - Lambda	Value		Asymp. Std. Error[a]
Symmetric	0.065		0.037
How many days will it take to receive an approved permits?	0.000		0.000
Have you ever applied for building permit?	0.159		0.085
Added permit for filling station or building for public use	***Chi-Square***	***Likelihood Ratio***	***Linear-by-Linear Asso.***
Value	16.292[c]	17.010	10.752
Degree of freedom (df)	3	3	1
Asymp. Sig. (2-sided)	0.001	0.001	0.001
Nominal by Nominal - Lambda	Value		Asymp. Std. Error[a]
Symmetric	0.032		0.043
Which of the following is needed to form part of a building permit for filling station or building for public use?	0.000		0.000
Have you ever applied for building permit?	0.066		0.087
Validity and renewal of issued building permit	***Chi-Square***	***Likelihood Ratio***	***Linear-by-Linear Asso.***
Value	57.670[b]	65.628	55.257
Degree of freedom (df)	4	4	1
Asymp. Sig. (2-sided)	0.000	0.000	0.000
Nominal by Nominal - Lambda	Value		Asymp. Std. Error[a]
Symmetric	0.146		0.052
Development and building permits issued are valid for and to be renewed every	0.035		0.052
Have you ever applied for building permit?	0.291		0.068
Do permits granted to cover permanent and temporary?	***Chi-Square***	***Likelihood Ratio***	***Linear-by-Linear Asso.***
Value	16.749[d]	18.809	16.700
Degree of freedom (df)	1	1	1
Asymp. Sig. (2-sided)	0.000	0.000	0.000
Nominal by Nominal - Lambda	Value		Asymp. Std. Error[a]
Symmetric	0.000		0.000
Are building permits in Ghana granted to cover permanent and temporary or makeshift structures?	0.000		0.000
Have you ever applied for building permit?	0.000		0.000
Regulations mandating building permit	***Chi-Square***	***Likelihood Ratio***	***Linear-by-Linear Asso.***
Value	35.750[c]	39.847	5.358
Degree of freedom (df)	3	3	1
Asymp. Sig. (2-sided)	0.000	0.000	0.021
Nominal by Nominal - Lambda	Value		Asymp. Std. Error[a]
Symmetric	0.065		0.063
Which of the following legally specify that one has to obtain building permit before putting up a house?	0.000		0.000
Have you ever applied for building permit?	0.106		0.099

Consequences of putting up buildings without permits	***Chi-Square***	***Likelihood Ratio***	***Linear-by-Linear Asso.***
Value	44.918[b]	50.609	20.954
Degree of freedom (df)	4	4	1
Asymp. Sig. (2-sided)	0.000	0.000	0.000
Nominal by Nominal - Lambda	Value		Asymp. Std. Error[a]
Symmetric	0.102		0.053
What are the consequences clients are likely to face when they put up buildings without permits?	0.025		0.054
Have you ever applied for building permit?	0.205		0.071
Added permit for construction or mining projects	***Chi-Square***	***Likelihood Ratio***	***Linear-by-Linear Asso.***
Value	26.971[c]	28.851	8.930
Degree of freedom (df)	3	3	1
Asymp. Sig. (2-sided)	0.000	0.000	0.003
Nominal by Nominal - Lambda	Value		Asymp. Std. Error[a]
Symmetric	0.049		0.056
Which of the following is needed to enable safe working on the construction or mining site?	0.000		0.000
Have you ever applied for building permit?	0.086		0.096
Legal age for acquiring a building permit in Ghana	***Chi-Square***	***Likelihood Ratio***	***Linear-by-Linear Asso.***
Value	30.392[b]	31.149	3.889
Degree of freedom (df)	4	4	1
Asymp. Sig. (2-sided)	0.000	0.000	0.003
Nominal by Nominal - Lambda	Value		Asymp. Std. Error[a]
Symmetric	0.147		0.046
What is the legal age for acquiring a permit in Ghana?	0.112		0.046
Have you ever applied for building permit?	0.199		0.065

a. Error made for not assuming the null hypothesis.
[b]The tabulated Pearson Chi-Square value at 4 degrees of freedom using alpha level of 1% was 13.28
[c]The tabulated Pearson Chi-Square value at 3 degrees of freedom using alpha level of 1% was 11.34
[d]The tabulated Pearson Chi-Square value at 1 degree of freedom using alpha level of 1% was 6.64

Table 6. Problems in permit acquisition process in Ghana

Multiple response on permit application challenges		**Applied for permit before?**		**Total**
		No	**Yes**	
Problems in permit acquisition process[a]	a. Delays which lead to increase cost of construction and loss of value	168	145	313
	b. Lengthy processing duration and high cost	156	147	303
	c. Multiple land sales and land disputes	156	131	287
	d. Not identifying the right officers to process permits forms	113	38	151
	e. Poor feedback systems (thus, it is process centred)	69	57	126
	f. Difficulty in getting land ownership certificate from LC	79	57	136
	g. Improper handling of submitted documents	68	49	117
Total		195	151	346

Percentages and totals are based on respondents.

a. Dichotomy group tabulated at value 2.

Table 7. Chi-Square Tests on e-permit introduction

Statistic Tests	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	9.167[a]	1	0.002		
Continuity Correction[b]	8.258	1	0.004		
Likelihood Ratio	9.691	1	0.002		
Fisher's Exact Test				0.003	0.002
Linear-by-Linear Association	9.141	1	0.002		
N of Valid Cases	346				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 21.82.
b. Computed only for a 2x2 table

5. Conclusion

The average score rate for clients on questions set to cover stage 1 to 6 of building permit acquisition procedures was 46% and that for questions on permit regulations was 55%. Building permit applicants in SEMA are not well-informed in the permit acquisition process and regulations governing building permit issuance in Ghana.

The Pearson χ^2 tests average of 32.901 compared with the tabulated value of 11.34 at 3df using alpha level of 1%, led to acceptance of the alternative hypothesis that building permit clients in SEMA lack knowledgeable in the permit acquisition process. Additionally, χ^2 tests average of 36.156 compared with the critical value of 13.28 at 4df, 11.34 at 3df and 6.64 at 1df using alpha level of 1%, led to acceptance of the alternative hypothesis that permit applicants in SEMA are not knowledgeable in regulations governing building permit in Ghana.

About 86% of prospective building permit applicants would prefer e-permit application if introduced by the assembly. Meaning clients will support electronic permit processing if introduced by permits issuing agencies in Ghana.

Major impediments to the building permit acquisition process in SEMA were delays which lead to increase cost of construction and loss of value, lengthy processing duration, multiple land sales and land disputes.

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References

Amirbeigi, S. A. (2012). *Optimizing the Processing Time for a Building Permit - Study Case: Tyresö Municipality*. Stockholm, Sweden: KTH Architecture and the Built Environment.

Asante, K. B. (2012). *The Collapse of the Melcom Store at Achimota Confirms Institutional Failure, Official Incompetence and the Acceptance of Petty Corruption by us the People of Ghan.* Accra, Ghana: Report Published for Local Government and Assembly Deliberation.

Aseidu, S. B., & Agyeman, S. (2009). Re-Ingineering the Processing of Building Permit to Control the Development of Unauthorized Structures in the Ghanaian. *Proceedings from Sunyani Polytechnic Lecture Series v.* Sunyani: Sunyani Polytechnic.

Bergman, B., & Klefsjö, B. (1994). *Quality: from Customer Needs to Customer Satisfaction.* Lund: Studentlitteratur AB.

Bergman, M. (2001). *Organisational process.* Svenska: Springer Science & Business Media.

Bertelsen, S., & Emmitt, S. (2005). The Clients as a Complex System. In A. H. Boussabaine, & J. Lewis (Ed.), *Proceedings of the 1st International Conference on Built Environment Complexity (BECON)*, (pp. 117-126).

Blakstad, O. (2008). *Experimental Research.* Norway: Research Council Press. Retrieved August 28, 2015, from https://www.explorable.com/stratified-sampling

Botchway, E., Afram, S. O., & Ankrah, J. (2014). Building Permit Acquisition in Ghana: The Situation in Kumasi. *International Institute of Science, Technology and Education (IISTE), 4*(20), 11-22. Retrieved from www.iiste.org

Emmitt, S., & Gorse, C. A. (2014). *Barry's Introduction to Construction of Buildings.* (3rd, Ed.) Chichester, U. K.: Wiley-Blackwell.

Freiku, S. R. (2003). *Ghana: Kumasi's Development Getting Worse, Chaotic.* Ghana News Agency (GNA). Accra, Ghana: Report Published for Local Government and Assembly Deliberation.

Government of Ghana. (1993). *Proper Planning of Town and Cities within the MMDAs in Ghana.* Local Government Act 1993 (Act 462) Section 64 Clause 53 (1a). Accra, Ghana: Ministy of Local Government and Rural Development.

Government of Ghana. (1993). *Proper Planning of Town and Cities within the MMDAs in Ghana.* Local Government Act 1993 (Act 462) Section 64 Clause 4. Accra, Ghana: Ministry of Local Government and Rural Development.

Government of Ghana. (1993). *Proper Planning of Town and Cities within the MMDAs in Ghana.* Local Government Act 1993 (Act 462) Section 64 Clause 5 and 6. Accra: Ministy of Local Government and Rural Development.

Government of Ghana. (1996). *Building Regulations of Ghana LI 1630.* Ghana: Ministry of Works and Housing.

Government of Ghana. (1999). *Environmental Assessment Regulations L.I. 1723, 1999.* Accra, Ghana: Ministry of Environment, Science and Technology.

Government of Ghana. (2003). *Fire Precaution (Premises).* Ghana Fire Service Regulations L.I.1724. Accra, Ghana: Ministry of Works and Housing.

Government of Ghana. (2008). *Lands Commission Act (Act 767).* Accra, Ghana: Ministry of Local Government.

Israel, G. D. (2013). *Determining Sample Size* (3rd ed., Vol. PEOD6). Florida, USA. Retrieved 20 06, 2015, from http://edis.ifas.ufl.edu.

Karltun, J., Seigerroth, U., Goldkuhl, G., Eklund, J., & Lind, M. (1999). Process Redesign and Organisational Change - Towards the Use of an Integrated Change Method. In J. Axelsson , B. Bergman, & J. Eklund (Ed.), *Proceedings of the International Conference on TQM and Human Factors - Towards Successful Integration*, (pp. 53-58). Linköping University.

Koskela, L. (1992). *Application of the New Production Philosophy to Construction.* Technical Report No. 72, CACIFE, Department of Civil Engineering, Stanford University. Retrieved August 29, 2015, from http://www.ce.berkeley.edu/~tommelein/Koskela-TR72.pdf

Kpamma & Adjei-Kumi. (2013). Construction Permits and Flow of Projects within the Sunyani Municipality, Ghana. *Proceedings International Group on Lean Construction (IGLC)* (pp. 257-266). Fortaleza, Brazil: IGLC.

Miles, R. E., Snow, C. C., Meyer, A. D., & Coleman, H. J. (1978). Organizational Strategy, Structure and Process. *The Academy of Management Review, 3*(3), 546-562. Retrieved 30 June, 2025, from http://www.jstor.org/stable/257544

Ministry of Local Government and Rural Development. (2006). *Ghana Districts - A Repository of all Districts in the Republic of Ghana.html*. Retrieved May 20, 2015, from http://www.ghanadistricts.

Moullier, T. (2009). *Reforming Building Permits: Why is it important and what can IFC Really do?* Washington, D.C., USA: International Finance Corporation.

Okoye, V. (2012). African Urbanism. *When a Major Building like Melcom Collapses, Who is to Blame?* Retrieved August 27, 2015, from African Urbanism website:
http://africanurbanism.net/2012/11/12/when-a-building-collapses-who-is-to-blame/

Oppong, R. A., & Yeboah, E. (2013). Empirical Examinations of Conflicts and Contradictions in Architecture, Land and Suburban Sprawl: The Case of Tamale, Ghana. *Journal of Science and Technology, 33*(1), 92-104. doi:org/10.4314/just.v33i1.10

Peprah, P. O., & Ayidana, H. E. (2014). *2010 Population and Housing Census.* District Analytical Report, Sunyani Municipality. Sunyani, Ghana: Ghana statistical Service. Retrieved August 27, 2015, from http://www.statsghana.gov.gh/docfiles/2010phc/2010_population_and_housing_census%28view_s

Quartey, R. Q. (2011). *Performance Audit Report of the Auditor General on the Management of Building Permits at Ga East Municipal Assembly.* Ref. No. AG.01/109/Vol.2/35. Accra: Parliament of Ghana.

Shuttleworth, M. (2009). *Explorable.com*. Retrieved Aug 02, 2015, from www.explorable.com: https://explorable.com/what-is-sampling

Sunyani Municipal Assembly. (2008). *District Information*. Retrieved July 20, 2015, from Sunyani Ghana Districts: http://sunyani.ghanadistricts.gov.gh/

Taiwo, A. A., & Afolami, J. A. (2011). Incessant Building Collapse: A Case of a Hotel in Akure, Nigeria. *Journal of Building Appraisal*.

Tamakloe, W. (2004). State of Ghana's Environment - Challenges of Compliance and Enforcement. *Proceedings from INECE-OECD Workshop on Environmental Compliance and Enforcement Indicators: Measuring What Matters* (pp. 99-104). Paris, France: International Network for Environmental Compliance and Enforcement (INECE) and Organisation for Economic Co-operation and Development (OECD). Retrieved August 27, 2015, from http://inece.org/indicators/workshop.html

TCP Ghana. (2010). *Development Permit Procedure*. Retrieved April 30, 2015, from tcpghana web site: www.tcpghana.com

World Bank. (2013a). *Doing Business 2013: Smarter Regulations for Small and Medium-Size Enterprises.* Creative Commons Attribution CC BY 3.0. Washington, D.C., USA: World Bank Group. doi:10.1596/978-0-8213-9615-5

World Bank. (2013b). *Good Practices for Construction Regulation and Enforcement Reform: Guidelines for*

Reformers. Working Paper, Report number: 77100. Washington, D.C., USA: Investment Climate. Retrieved August 30, 2015, from
http://documents.worldbank.org/curated/en/2013/01/17647713/good-practices-construction-regulation-enforcement-reform-guidelines-reformers
World Bank and IFC. (2013). *Dealing with Construction Permits.* World Bank Group. Washington, D.C., USA: International Finance Corporation. Retrieved August 29, 2015, from Doingbusiness.org.
Zucker, P., Wilson, K., & Troyer, S. (2008). *Development Approval/Permit.* Troy, Michigan: Zucker Systems.

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