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An Assessment of the Effect of Remuneration on the Construction Performances of the Professionals in the Nigerian Building Industry

By

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An Assessment of the Effect of Remuneration on the Construction Performances of the Professionals in the Nigerian Building Industry

ABSTRACT

Construction professionals are the authors on one hand and co-executors of construction projects on the other, therefore, the quality of the services expected of them in construction project delivery as environmental resource manager is key. This paper investigated whether quality of service of the construction professionals in Nigeria is influenced by the level of professional fees receivable for services rendered hence their resource management role. The determinants of service quality are identified and their means of evaluation examined using the SERVQUAL; instrument used for measurement of the service quality on responses got from a set of questionnaires administered on the construction stakeholders comprising of the construction clients on one hand and the construction professionals on the other hand in Lagos, Nigeria with a view to assessing the perception of the clients regarding the quality of services being received from their construction professionals vis-a-vis clients expectations. The study revealed that there was no significant relationship between the level of fees paid and the quality of service rendered by the construction professionals as the result of the analysis of variance between service quality gap and the various methods of fees paid is not reflected in the service quality of construction professionals.

Keywords: Construction Clients, Construction Professionals, Service Quality, Expectation, Perception, Satisfaction, Methods of fee payment.

1. Introduction

Remuneration received for services rendered by construction professionals worldwide is the professional fees and is normally paid based on the percentage of the total construction cost of
the proposed project. In most countries of the world including Nigeria, professional scale of fees are in use which are often put in place by the governments of different countries to regulate the fees payable to the professionals in the construction industry of such countries concerned.

It is believed that the level of services expected of each of the professionals on a project is represented by the percentage of the total costs assigned as the appropriate fees capable of adequately remunerating the professionals for the services rendered. A subset of this scale of fee is the time charges for additional services to the core service and residency on projects. Negotiated fees is an unwritten document which forms its basis from the mandatory fee scale where some aspect of professionals services are remunerated based on negotiation of fees on mandatory scale regardless of the different professional bodies in the construction industry insistence on non negotiation of professional fees.

To ensure that clients receive best value for their money, Compulsory Competitive Tendering (CCT) was introduced by the UK government (being a major construction client) in 1983 whereby professionals are pre-qualified for commissioning based on their design, cost, time and fee competition.

Higher Education Design Quality forum in their occasional paper No.2 “The issue of Professional fees” April 1998; enquire into the relationship between professional fees and design quality and also outline basic methods of using fees in consultant selection process. The paper points out that achieving a balance between quality and cost has been explored by various bodies and the method with the interest backing is that developed by the construction industry board following Latham Review. This paper also confirmed Hoxley (1988) findings by recommending amongst others that selection on the basis of fee bids alone should be avoided if quality and overall value for money are both required.

American Consulting Engineers Council (ACEC) (2002) noted in a publication titled “Reality of Bidding” that bidding for projects is not the solution to the problem of quality of services by professionals but on qualifications – based selection (QBS) process which allows the owner to choose the service provider determined to be most qualified by objective criteria,
whereas selecting design professionals by low bid takes this process out of the hands of the owner. Qualification Based Selection QBS has the advantages that:

(a) a well qualified firm is selected
(b) a scope of work satisfactory to both parties is negotiated
(c) a mutually agreed-upon price is paid for services (d) a team approach (partnership) between the owner and consultant can be developed so that both parties have an interest in the project success.

It is therefore necessary to look at the mandatory scale of fees method of remunerating professionals in Nigeria plus other methods like Negotiated Fee System or Lump Sum System and amongst other things been able to:

1) Determine empirically whether mandatory fees are strictly followed for services rendered and to highlight the service quality rendered.

2) Determine the rate of responsiveness (if any) of change of mandatory scale (via negotiation or lump sum system) to service quality both from the service providers and the clients perspectives.

3) To determine whether the fees influence service quality at all hence affecting environmental resource management.

Therefore, the need to identify the determinants of service quality and their means of evaluation examined especially as they respond to fees paid becomes a paramount issue under this research. The predominant amount of research on the empirical measurement of service management quality has taken place in non-construction industries like retail stores, financial or investment brokerage services and health care.

Hoxley (1998) conducted research into quality of consultant’s services in construction area. This research will also investigate the consultants’ service quality of professionals based in Lagos Nigeria, (being the commercial capital of the country where most commissions are made) using the principles developed within the context of construction and other industries by summarizing the nature of service and service quality. Then the concept of service quality and the ‘Gap’ model developed by Zeithanil et al (1988) will be applied to help the consultants measure their service quality. The relationship of this ‘gap’ with the level of fees
paid produces the result that the service quality is not influenced by the fees paid. Expected service quality – this is the standard of quality expected by the clients. This is dependent on the knowledge of the client or his organization about the service.

a. Perceived service quality – this is the assessment of the client’s or consultants of what a particular service delivered is.

According to Parasuraman et al (1990) service quality is assessed broadly on five major dimensions of tangibles, reliability, responsiveness, assurance and empathy.

(i) Tangibles (ii) Responsiveness (iii) Assurance (iv) Empathy (v) Reliability

1.1 The Nature of Services

Services have been defined as an activity or series of activities of more or less intangible nature that normally but not necessarily take place in interactions between the customer (client) and service employees and/or physical resources or goods and / or systems of the service provider which are provided as solutions to customer problems’ (Gronroos, 1984). The Gronroos (1984) also identified the qualities of services, which differentiate it from products. These characteristics of services make it difficult to assess their quality as compared to products.

The four common characteristics are:

i. **Intangibility** – Services are activities or benefits that are essentially intangible, cannot be prefabricated in advance and do not involve ownership or title. (York, 1993). Most services cannot be counted, measured, inventoried, tested and verified in advance of sale to assure quality, because of this intangibility, firms find it hard to understand how customers (clients) perceive their services and evaluate service quality.

ii. **Simultaneous Production and Consumption** – Service is simultaneously produced and consumed while physical goods are first produced, then sold and finally consumed. The inseparability forces the involvement of the customer in the production process. The quality of service delivered depends therefore on the input of the customer (client).
iii. **Perish ability** – this means that service cannot be produced in advance and later made available for sale, they are performances that cannot be stored (Zeithanil, 1988). This feature makes it also difficult to match supply with demand.

iv. **Heterogeneity** – Manufactured goods are subject to strict quality control to ensure that a homogeneous product is provided to customers. Services are obviously people dependent and therefore difficult to standardize. Variations often occur in performance from producer to producer and from customer to customer and from day to day. (Parasuraman et al 1985).

Parasuraman et al (1990), further adds, image, testability, uniqueness and peripheral as other qualities of services.

Professions are occupations which are conducted within a self imposed ethical framework. Wilson, (1984) describes the three stages of professional development as:

(a) Achievement of legal recognition.

(b) Adherence to a self imposed code of ethics.

(c) Recognition by society as a whole.

Carr-Saunders and Wilson (1964) suggested that professions are collections of technical experts with formal association and that the development of all professions can be seen as an inevitable result of a historical process: the meeting of like-minded people in social situations, the discussion of common problems, attempts to resolve the problems ending with the formalization of these attempts and discussions into an organizational framework.

There are however two critical aspects of professionalism – the professional must be able to demonstrate a knowledge and skill in his claimed area of competence and must be able to recognize the limits of his skills and boundaries of his competence.

Root (1997) states two characteristics by which the professions of land, construction and property can be identified as, a prolonged period of training or education to acquire a specific body of knowledge and methodology to apply this knowledge to the ordinary business of life.

Walker (1989) believes that establishment of the construction professions has led to the protection of their professions and created patterns of working that inhabited innovation. He
believes there is evidence that the barriers between the professions are being broken down as they seek to survive in an increasingly complex and competitive society. This situation is replica of what takes place in Nigeria, where interview conducted by researchers have shown that professional cross their defined boundary in other to stay ahead. The aim of any business organization or occupation is to make profit, but Root (1997) asks if this aim is different for the professionals and especially for the construction professions. He proffers answer by accepting that at the most basic level, the primary purpose of any professional and indeed of any practice is to make money. This reality does not make them different from other occupations. Coxe (1987) identify a continuum with business-central professional firms at one end and practices centered firms at the other, he further asserts that though every professional design firm combines both aspects of business and practice, what the practice values of these two views dictates its place in the continuum. However, whichever value professional firm attaches to their ultimate goal, the professional is reminded that his primary responsibility is to perform the service with reasonable skill, care and diligence. Failure to meet this standard by omission or act is likely to be deemed professional negligence. McClure (2002) reminds professionals that whatever situation he finds himself, integrity and trust should be the watchword. 1.2 The Recognized Professionals Within The Nigerian Construction Industry: Federal Ministry of Works and Housing (1996) classified and identify the following professionals as those recognized for remuneration in Nigeria. 

(a) Architects : Governed by Nigerian Institute of Architects(N.I.A.) and regulated by Architects Regulation Council of Nigeria (ARCON) with over 5000 members

(b) Engineers -

(i) Civil Engineers
(ii) Structural Engineers
(iii) Mechanical Engineers
(iv) Electrical Engineers
(v) Other Engineers like Chemical, Electronic
Governed by Nigerian society of Engineers and regulated by Council for Registration of Engineers in Nigeria (COREN) with over 10,000 members

(c) Quantity Surveyors: Governed by Nigerian Institute of Quantity Surveyors (NIQS) and regulated by Quantity Surveyors Registration Board of Nigeria (QSRBN) with over 2000 members.

(d) Estate Surveyors and Valuers: Governed by Nigerian Institute of Estate Surveyors and Valuers (NIESV) regulated by Estate Surveyors and Valuers Registration Board of Nigeria (ESVRBN) with about 2000 members.

(e) Land Surveyors: Governed by Nigeria Institute of Surveyors (NIS) regulated by Surveyors Council of Nigeria (SURCON) with about 2000 members.

(f) Town Planners: Governed by Nigerian Institute of Town Planners (NITP) regulated by Town Planners Registration Council (TOPREC) with about 2000 members.

(g) Builders: Governed by Nigeria Institute of Building (NIOB) regulated by Council for registration of Builders in Nigeria (CORBON) with about 2000 members.

Procuring construction professionals are by (i) Direct appointment, traced to Paragraph 22 of Simon Report (1944), where the direct appointment of the architect (who later appoint other professionals) depends on recommendation by previous clients, experience of the clients on past jobs with the clients or via publications brought to the attention of the client. (ii) Competitive Tendering which get the best out of the professionals tendering for a proposed project stating their ability to deliver in terms of technical know-how, manpower and equipments. In countries where the mandatory fee scale is the mode of remuneration, fees will not be a criteria for selection.

1.3 The Role of Clients in the Service Process.
The service delivery stage is of course critical to the successful outcome of a professional service. All professional services involve an element of agreeing in the early stages what is to be provided and how this will be achieved, the briefing process is a way of articulating the requirements of the client with the consultants. According to the RIBA Plan of work (RIBA,
The state has witnessed rapid construction demand for all types of construction developments, especially during the era of economic boom of the late 1970s up to 1980s. Thus the choice of the state as the study area is necessitated by the level of construction works being carry out in the state and the fact that the bulk of building construction professionals are found to congregate in the state. The fact that the construction professionals converge in the state arises from the fact that the clients consisting of public and private are in abundance in the state.

3. Data Collection and Research Methods

Primary data were collected through questionnaires distributed among various professionals involved in the building industry (Quantity Surveyors, Electrical Engineers, Town Planners and Architects) on the one hand the clients of these professionals represented by private corporate bodies, government and private individual clients.

The questionnaires administered are in two sets of 50No.each, set (A) aimed at eliciting clients expectations and perceptions set (B) to get the professionals perceptions of clients expectation and perceptions of service quality. The clients and professional surveyed are all based in Lagos southwest Nigeria. The clients groups surveyed are: Government, Private corporate and Private individuals in equal proportion. The assessment covers diverse selection of construction professionals with minimum of five years experience in equal percentage of the total practicing professionals in Nigeria.

For test of validity of the research instrument i.e. The questionnaires, is structured in reference to SERVEQUAL instrument by Parasuraman et al for their service quality research work consisting of five sections:

Section 1: General information section where personal and organizational data are recorded.
Section 2: Perceptions section, which is aimed at getting the clients perceptions of service quality of the service providers. The section comprised twenty-two statements related to one of the five major dimensions of service quality namely: Tangibles, Reliability, Responsiveness, Assurance and Empathy. These statements were presented on a Likert rating scale of 1 to 7 with terminal anchors of “Strongly Disagree” to “Strongly Agree”.

Section 3: This section is in between perceptions and expectations section to assess the relative importance of the five quality dimensions by weighing each dimension out of a total of 5 points.

Section 4: Expectations section which elicit the clients expectations of the services providers quality of services. It also has twenty-two statements relating to the five major dimensions of service quality as designed under section 2 above.

Section 5: Performance measurement of a specific project, where the degree of commitment of the professionals is assessed in relation to the level of fees received for such projects.

This section is however an addition to the SERVQUAL instrument to achieve the test for the research hypotheses on the side of the service provider on the side of the client the level of satisfaction is an addition.

The perceived service quality (SQ) is computed along the five dimensions by subtracting expectations scores from perceptions scores giving an SQ score for each statements ranging between –6 and +6. Negative SQ score is an indication that the level of the provider’s service quality is below customer expectation. While a positive SQ score is an indication that the service provider is exceeding customer’s expectations in that particular area.

The service quality gap (denoted as G) is the gap between expectations and perceptions. The measurement of (G) requires a comparison of responses between these two sections of the questionnaires and it is computed along the five dimensions by subtracting the client’s expectation score from service providers expectation score.
A negative (G) score indicates underestimated expectation and a positive score indicates overestimated expectation. Descriptive and non-descriptive statistical tools were used and inferences drawn concerning the significance or otherwise of the relationships between the variables of the study.

4. Data Analysis and Discussion

The response rate of 52% and 36% for construction professionals and clients were recorded in the study which are considered satisfactory in view of the reluctance often exercise by most professionals in the construction industry in the country as well as the clients too. All the recognized construction professionals in the country are duly considered and included in the study with the Quantity Surveyors having 38.46% representation, Electrical Engineer, Town Planner and Architect having 3.85% representation respectively.

The majority of the responses from the clients came from the private corporate bodies (8 firms or 44.44%) which was closely followed by government (33.33%) and private individual clients (22.22%).

The responses to statements for perceptions and expectation sections of the Professionals Questionnaire (Form A) and the clients questionnaire (Form B) were grouped into five dimensions of a SERVQUAL.

The mean of the various scores recorded on the questionnaires are computed by averaging the respondent scores for the five dimensions, these means are those shown in Table 2; Variance and Standard Deviation of the expectation and perceptions for the five dimensions of service quality for both clients and construction professionals. Evaluation of the perceived importance of the determinants of service quality is shown in Table 3 below while the clients places more emphasis on “Responsiveness” or company willingness to help customers and provide prompt service (29%), the construction professional prefers company ability to perform the promised service dependably and accurately (25%)

The overall weighted SERVQUAL score taking into account the relative importance of the dimensions is detailed in Table 4. This shows the overall expectation scores of the client
group and the construction professionals as 5.48 and 5.90 respectively. The overall perception scores of the client and professionals as 5.90 and 6.30 respectively.

Quality is a comparison between Expectation and performance therefore assessing the quality of service (SQ) using SERVQUAL in computing the differences between the ratings customers assign to the paired expectation/perception statements. Table 4.4 is an analysis of service quality which is calculated by SERVQUAL score = Perception score – Expectation score.

Table 2: Comparison of clients’ expectations and perceptions with service providers’ perceptions of those expectations and perceptions.

<table>
<thead>
<tr>
<th>SERVQUALscore</th>
<th>Clients</th>
<th></th>
<th>Construction Professionals</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Variance</td>
<td>Mean</td>
<td>Variance</td>
</tr>
<tr>
<td>Expectations</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tangibles</td>
<td>5.31</td>
<td>1.43 1.20</td>
<td>5.64</td>
<td>1.23</td>
</tr>
<tr>
<td>Reliability</td>
<td>5.31</td>
<td>1.55 1.25</td>
<td>5.75</td>
<td>1.18</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>5.62</td>
<td>0.65 0.81</td>
<td>6.05</td>
<td>1.70</td>
</tr>
<tr>
<td>Assurance</td>
<td>5.61</td>
<td>1.32 1.15</td>
<td>6.15</td>
<td>1.26</td>
</tr>
<tr>
<td>Empathy</td>
<td>5.46</td>
<td>1.77 1.33</td>
<td>6.01</td>
<td>1.03</td>
</tr>
<tr>
<td>Overall</td>
<td>5.46</td>
<td>0.02 0.15</td>
<td>5.92</td>
<td>0.05</td>
</tr>
<tr>
<td>Perceptions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tangibles</td>
<td>6.13</td>
<td>0.52 0.72</td>
<td>5.99</td>
<td>0.63</td>
</tr>
<tr>
<td>Reliability</td>
<td>6.44</td>
<td>0.09 0.30</td>
<td>6.29</td>
<td>0.34</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>6.57</td>
<td>0.09 0.31</td>
<td>6.48</td>
<td>0.25</td>
</tr>
<tr>
<td>Assurance</td>
<td>6.49</td>
<td>0.24 0.49</td>
<td>6.43</td>
<td>0.29</td>
</tr>
<tr>
<td>Empathy</td>
<td>6.37</td>
<td>0.56 0.75</td>
<td>6.39</td>
<td>0.31</td>
</tr>
<tr>
<td>Overall</td>
<td>6.40</td>
<td>0.03 0.17</td>
<td>6.32</td>
<td>0.04</td>
</tr>
</tbody>
</table>
Table 3: Weighted expectation and perception scores for clients and service providers.

<table>
<thead>
<tr>
<th>SERVQUAL score</th>
<th>Clients</th>
<th>Construction Professionals</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Expectations</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tangibles</td>
<td>0.85</td>
<td>1.18</td>
</tr>
<tr>
<td>Reliability</td>
<td>1.06</td>
<td>1.44</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>1.63</td>
<td>1.39</td>
</tr>
<tr>
<td>Assurance</td>
<td>1.18</td>
<td>1.11</td>
</tr>
<tr>
<td>Empathy</td>
<td>0.76</td>
<td>0.78</td>
</tr>
<tr>
<td>Overall</td>
<td>5.48</td>
<td>5.90</td>
</tr>
<tr>
<td><strong>Perceptions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tangibles</td>
<td>0.98</td>
<td>1.26</td>
</tr>
<tr>
<td>Reliability</td>
<td>1.29</td>
<td>1.57</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>1.38</td>
<td>1.49</td>
</tr>
<tr>
<td>Assurance</td>
<td>1.36</td>
<td>1.15</td>
</tr>
<tr>
<td>Empathy</td>
<td>0.89</td>
<td>0.83</td>
</tr>
<tr>
<td>Overall</td>
<td>5.90</td>
<td>6.30</td>
</tr>
</tbody>
</table>

Table 4: Construction Professionals and Clients Main Considerations

<table>
<thead>
<tr>
<th>Determinants of service quality</th>
<th>Clients</th>
<th>Professionals</th>
</tr>
</thead>
<tbody>
<tr>
<td>The appearance of the company’s physical facilities, equipment and personnel</td>
<td>16%</td>
<td>21%</td>
</tr>
<tr>
<td>The company’s ability to perform the promised service dependably and accurately.</td>
<td>20%</td>
<td>25%</td>
</tr>
<tr>
<td>The company’s willingness to help customers and provide prompt service</td>
<td>29%</td>
<td>23%</td>
</tr>
<tr>
<td>The knowledge and courtesy of the company’s employees and their ability to convey trust and confidence.</td>
<td>21%</td>
<td>18%</td>
</tr>
<tr>
<td>The caring, individualized attention the Company provides its clients</td>
<td>14%</td>
<td>13%</td>
</tr>
<tr>
<td><strong>Overall</strong></td>
<td><strong>100%</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>
### Table 5: Analysis of Service Quality

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Perception mean</th>
<th>Expectation mean</th>
<th>SERVQUAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unweighted</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tangibles</td>
<td>6.13</td>
<td>5.31</td>
<td>0.82</td>
</tr>
<tr>
<td>Reliability</td>
<td>6.44</td>
<td>5.31</td>
<td>1.13</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>6.57</td>
<td>5.62</td>
<td>0.95</td>
</tr>
<tr>
<td>Assurance</td>
<td>6.49</td>
<td>5.61</td>
<td>0.88</td>
</tr>
<tr>
<td>Empathy</td>
<td>6.37</td>
<td>5.46</td>
<td>0.91</td>
</tr>
<tr>
<td><strong>Overall</strong></td>
<td>6.40</td>
<td>5.46</td>
<td>0.94</td>
</tr>
<tr>
<td><strong>Weighted</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tangibles</td>
<td>0.98</td>
<td>0.85</td>
<td>0.13</td>
</tr>
<tr>
<td>Reliability</td>
<td>1.29</td>
<td>1.06</td>
<td>0.23</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>1.38</td>
<td>1.63</td>
<td>-0.25</td>
</tr>
<tr>
<td>Assurance</td>
<td>1.36</td>
<td>1.18</td>
<td>0.18</td>
</tr>
<tr>
<td>Empathy</td>
<td>0.89</td>
<td>0.76</td>
<td>0.13</td>
</tr>
<tr>
<td><strong>Overall</strong></td>
<td>5.90</td>
<td>5.48</td>
<td>0.42</td>
</tr>
</tbody>
</table>

Table 5 shows the weighted and unweighted SERVQUAL score for the group (same could be done for the professionals). The discrepancy ‘G’ between client’s expectations and professional’s perceptions of the expectations is calculated as Gap Score = Professionals Perception of clients expectation Score – Clients expectation score

### Table 6: Analysis of discrepancy between clients’ expectations and service providers’ perceptions of clients’ expectations (weighted)

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Provider expectation mean</th>
<th>Client expectation mean</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tangibles</td>
<td>1.18</td>
<td>0.85</td>
<td>0.33</td>
</tr>
<tr>
<td>Reliability</td>
<td>1.44</td>
<td>1.06</td>
<td>0.38</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>1.39</td>
<td>1.63</td>
<td>-0.24</td>
</tr>
<tr>
<td>Assurance</td>
<td>1.11</td>
<td>1.18</td>
<td>-0.07</td>
</tr>
</tbody>
</table>
Table 6 provides the weighted score of service quality gap ‘G’ which captures the discrepancies between clients and professionals on both expectations along the five dimensions of the relative importance of the dimensions.

**Table 7: Service Quality and Fees paid (Professional Perception and Client’s Expectation)**

<table>
<thead>
<tr>
<th></th>
<th>Full Fees</th>
<th>Neg. Fees</th>
<th>% Fees</th>
<th>Time Charges</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional Perception means (unweighted)</td>
<td>9</td>
<td>7</td>
<td>10</td>
<td>0</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>6.32</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clients Expectation (unweighted)</td>
<td>5</td>
<td>9</td>
<td>2</td>
<td>2</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>5.46</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 7 shows the matrix of the service quality (unweighted) with the level of fees or type of fees paid by the client. The service quality means used to examine the relationship by analysis of variance (ANOVA) is that of client’s expectation and Professional Perception.

5. **Interpretation, Discussion of Findings and Conclusion**

The results of the survey shows that there are discrepancies in expectations and perceptions between professionals and the clients. Both the client and the professionals have the perceptions of service quality to be higher than expectations. The results also show that the levels of expectation from the professionals is higher than those from the clients and the level of perceptions of the professionals lower than those from the clients.
The client group rated “Responsiveness” as the most significant variable out of the five determinants of the service quality (29%), the professional rated “Reliability” as the most significant (25%). Assurance and Reliability are the next on the list of importance for the clients while Empathy and Tangible are of lesser importance as depicted in Tables 3 and 4. The professionals rated “Responsiveness” and “Tangibles” next in line of importance while Empathy and Assurance are of lesser importance. It is noted that the professional weighted tangibles and reliability 5% each above the clients group. Generally the result of overall service quality score is consistent with the level of satisfaction. The overall service quality is 0.94 (unweighted) and 0.42 (weighted) which means that the perception of service is higher than the clients expectation. However, all dimensions except reliability are potentially close to client’s expectations.

Table 5 reveals that the gap score between dimensions varies from 0.82 (tangibles) to 1.13 (Reliability). The Reliability and Responsiveness recorded greater SQ scores. Reliability is directly affected by the organization’s resources base in terms of budgets and systems, while responsiveness is directly affected by commitment and professionalism. However, the weighted scores for reliability and responsiveness are 0.23 and −0.25, therefore responsiveness is the most important dimension that providers should look into and improve in order to meet the clients expectations since clients put substantial weighting on that dimension. The table further shows that expectation for all dimensions and the result of analyses indicated that client’s expectations are generally low.

The Gap ‘G’ is the discrepancy between the professional’s perception of expectation, which indicates the level of understanding and knowledge the professionals have about their client’s expectation. The overall service quality gap score indicate that the professional over estimate clients expectations. Theoretically, this should result in a higher overall service quality but does not do all the time, as the positive gap score does not imply that the service quality meets client’s satisfaction.

Table 6 further shows that “Responsiveness” which is the most important dimension of service quality to the client has a negative gap score of −0.24, this suggesting that the professional do not allocate their resources effectively to meet clients requirements.
In summary, the study vividly revealed the following conclusions which are drawn from the findings and which need to be given serious consideration by the stakeholders in the country’s construction industry:

1. Satisfaction is widely viewed as involving both perceived quality and expectations.
2. Service quality as viewed by most organization is just a support mechanism rather than a competitive strategy.
3. Construction professional over-estimate client expectations of quality of service to be provided.
4. Generally, service performance of construction professionals is below client’s expectation.
5. Responsiveness is considered to be most important variable by the clients while Reliability is favoured by the construction professionals.
6. Service quality is not influenced by level of fees paid hence their role in environmental resource management.

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ATTITUDE OF URBAN DWELLERS TO WASTE DISPOSAL AND MANAGEMENT IN CALABAR, NIGERIA.

By

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Abstract

The problems of waste generation and management has become a serious issue of concern to many scholars in environmental studies. This paper critically examine the attitude of urban dwellers to waste disposal and management. One hundred and fifty copies of questionnaire were administered to residents in the area. Information such as the various classes of waste, frequency of waste disposal and methods of waste evacuation were obtained from the questionnaire. Finding revealed that family size has a great influence on waste disposal and generation which was evidence in the hypothesis with a calculated value of 7.32 greater than the critical value of 2.43 at 0.05 level of significance. Besides, environmental enlightenment has changed people’s attitude towards waste generation and management in the area. This was affirmed in the calculated f-value of 3.18 greater than critical t-value of 1.97 at 0.05 level of significance. However, this result indicate that effective environmental enlightenment would help avert the attitude of urban dwellers to waste disposal and management in the area.

Key Words: Urban dwellers, waste generation, attitude, waste disposal, human ecosystem.
Introduction

The problems of waste generation and management in most cities especially in developing has become one of the intractable environmental problems facing urban centres. This situation could be attributed to low level of technology that is not sophisticated enough to handle the high rate of waste generation (Baum, 1973). Human population and rural-urban migration has increase through urbanization, natural increase rate and industrialization, yet the service rendered is not sizeable enough to control the high level of solid waste generated in urban areas and these has contributed to a large extent, the nuisance and the damaging effect of the urban environment (Sule, 2004). Today, the rate at which waste is being generated is about 70% as compared to the total rate of its disposal which is 30% (Edu, 2003). No doubt Edu (2003) argued that waste could be anything which may not be directly useful or needed by man. In Nigeria, the dehumanizing effects of these circumstances in our urban lives and bright environments has often been cited and noted as contributing causes of Nigerian urban decay (Asuquo, 1979). Cross River State and Calabar in particular is not left out in this scenario despite the huge revenue allocated to waste disposal and management, the rate of waste generation and disposal is really alarming (Wegner, 1991). The region is crowded with biodegradable and non-biodegradable waste which posed great threat to urban environmental quality in the area. It is also surprise that the residents in the area are ignorance of the danger associated with indiscriminate waste disposal, even when the dump sites are provided, they still neglect it and liter their refuse on the environment. In this vein, one may ask why the residents are unable to manage their waste in an acceptable manner, what is then responsible for the negative attitude of the people towards waste disposal and management in the area? Therefore, the paper seek to evaluate the people’s attitude towards waste disposal and management with specific reference to the waste
classification, disposal method, frequency of waste disposal and waste evacuation in the area.

**Methodology**

This study was conducted in Calabar municipality local government area of Cross River State. Six major streets were randomly selected for this study which include, Akim road, Akim barracks, Mekenge layout, Odu-Ika, Akim-Ikang and Ita-Asu streets. Data such as waste classification, waste disposal, frequency of waste and evacuation methods were obtained from the questionnaire administered to the residents in the area. A sample of population of 1,000 people were used, of which 150 respondents were randomly drawn from the sample population in 75 households. However, the data obtained were analyzed using the One-way ANOVA while the independent T-test was used to evaluate the degree of significant of the variables under investigation.

**Study area**

The study area comprises of two locations in Calabar municipality namely; Akim and Big-qua clans; it is located naturally within latitudes $4^\circ-59^1$ and $5^0 – 13^1$ North of the equator and longitudes $80^- - 16^0 2^1$ and $8^0 - 8^1$ East of the Greenwich meridian. It is bounded in the north by Obutung and Ikpai clans, south by Duke Town, Efut Ekondo and Obufa Esuk clans. East by Ediba, Otop-Otop, Nyakasang, Edim-Otop, Satellite town and Unical; and west by the Calabar river estuary. The socio-economic activities of this area is characterized by the entire human study trading, farming and employees of government and private sector, artisans, full time house-wives. A number of hotels and restaurants, fast food joints, super markets and private sector which produces pure water as well as mechanic, carpentry and welding workshop. However, the rest of the activities in the area are basically domestic in nature.
Attitude of people and its effect on the environment

An understanding of the ebb and flow of individuals and collective attitudes vis-à-vis specific issues, and the mind set associated with various options, is very crucial. And this is more clearly demonstrated in environmental affairs. Social scientist psychologist have defined "attitude" as a predisposition to a specific kind of behaviour. By this began in the 1960s with an attitudinal revolution. It was sparked by growing concern about local problems and propelled by articulated warnings, notably from Rachel Carson (1960) in silent spring. We see, in retrospect that it predisposes the generation of the 1960s to embrace environmental activism. Since the 1960s throughout the democratic industrialized world, public awakening to environmental danger has consistently been the catalyst for environmental' policies and programmes. Attitude is referred to as a kind of "mental set" representing a predisposition to form a certain opinions (Kelly, 1971). This definition signifies that individual has different opinions to situation's. Most people have non-chalant attitude towards waste disposal this kind of person could be perceived as one who litters the environment like no man's business with no regards or respect to the environment. They don't consider the need to appraise or talk to people and neighbors around them for positive or negative behaviour. For example, if an individual is seen littering papers or any form of waste anywhere they do not seem to exhibit any annoyance or correction to such situation. They do not consider living in a clean as essential hence they cannot keep clean environment. They play passive role in sanitation activities and refuse to co-operate with others in cleaning up residential surroundings because of their negative attitude. Some educated and enlightened citizens also participate in these misconduct, According to Stahrl, E (1992) the main reason for the incessant growth of waste volumes in our urban centres is as a result of the ignorance of some dwellers towards the effect of indiscriminate dumping of refuse and the care free attitude of most of the dwellers, who know what should be
done but they are careless about it.... this is supported by Simon J. A.(1974) by saying that everybody wants their refuse to be taken away, nobody wants to take part in its disposal and management. Nest (1991) adds that people lack interest towards the management of the refuse they generate. According to him, although waste is generated by people, they show no concern towards its final disposal. This poor attitude may also be ascribed to the environmental protection agencies. Most times people pack their waste in dustbins for weeks without the agencies coming to evacuate them to the final point of disposition. As a result most people resort to pouring dirt recklessly on the streets, gutters expecting erosion to wash them into the river. Some dwellers also prefer to use undeveloped plots of land around their residence as the convenient point for waste disposal. Another scholar, Peter (1935) defines attitude as the mental and neutral state of mine (readiness) organized through experienced exerting a directive or dynamic influence upon individual response to all objects and situations with which it is related. The use of mental and neutral state” in the foregoing definition indicates that attitudes could not be observed directly but inferred from behaviours that is, the type of response possessed by an individual having the attitude. Observation here means that it is possible to train and motivate human being to develop attitudes and values, which culminate undesirable behaviour towards environment. The directing of behaviour towards an environment normally result in conscious utilization, manipulation and transformation of the environment in the manner consistent with the goals of environmental management, peoples negative attitude to waste disposal is a manifestation of their internal behaviour through socio-cultural and transitional orientation. It is true that if a person has a positive attitude towards an object, he/she will go a long way to support the object, so if an individual holds positive attitude to waste disposal, he will definitely increase his efforts to environmental sustenance. Attitude in this context can be defined in terms of the level of education, income rate and gender.
Odum (1986) states that society may unwillingly contribute to negative and deviant behaviour and attitudes based on the structure of its goals and opportunities. People know their own attitude not by inspecting their inside waste classification.
Findings

Classification of waste

The classification of waste as presented in table 1 shows that different types of waste were generated in the area. It was observed that vegetable was the major waste generated by the people with a value of 23.33% followed by Garbage with a value of 18.66%. Table 1 indicate that paper/grass were also generated in the area with a value of 16% compared to cans 15.33%, plastics 14.70% while wood/bones were on the least side with value of 12%. However, this result shows that majority of the waste generated in the area are biodegradable waste compared to non-biodegradable waste which when decomposed can be harmful to human health (Salvato, 1979).

Table 1: Waste classification in the area

<table>
<thead>
<tr>
<th>Variables</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Garbage</td>
<td>28</td>
<td>18.66</td>
</tr>
<tr>
<td>Vegetable</td>
<td>35</td>
<td>23.33</td>
</tr>
<tr>
<td>Paper/glass</td>
<td>24</td>
<td>16.00</td>
</tr>
<tr>
<td>Wood/bone</td>
<td>18</td>
<td>12.00</td>
</tr>
<tr>
<td>Cans</td>
<td>23</td>
<td>15.33</td>
</tr>
<tr>
<td>Plastics</td>
<td>22</td>
<td>14.70</td>
</tr>
<tr>
<td>Total</td>
<td>150</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Source: Field survey (2011)

Waste disposal methods

Figure 1 which shows the methods of waste disposal indicate that 63.67% of the people disposed their waste in cans before taking it to the final waste dump. This shows that majority of the people are more conscious to waste disposal. It was noticed in figure 1 that about 16.56% of the residents disposed their waste in their backyards; since the study area mainly an old traditional area, people don’t believe in going out
to dump site, their waste are dumped behind their houses which shows a poor attitude in the side of the people in waste management and disposal. This negative attitude can attract rodents such as rats, mosquitoes to the surrounding environment, hence causing health problems such as typhoid, malaria, dysentery, chlorella and tuberculosis (Sule, 2004). It was observed in figure 1 that 13.3% the residents in the areas walk down to where the receptacles are to disposed their waste, attend drop to drop the waste on the road side, this attitude was common among the youth in the areas. However, 5.0% of the residents dump their refuse in the pit and open space while 1.27% of the people dump their waste in gutters.

Figure 1: Waste disposal methods in the area

Source: Field survey (2011)

**Frequency of waste generation**

The frequency of waste generated in the study area presented in table 2 shows that waste were disposed on daily bases with a value of 34% compared to every three days with a value of 32.67%. Table 2 revealed that in most cases waste are generated
and kept for a week before they are disposed to dump site with a value of 22.67%. It was observed that in most cases waste are kept for months and days interval before they are disposed as both had values of 49 and 1.33% respectively. This set of people who keep their waste for a longer days are too reluctant to disposed their waste. This however, represent an improper attitude towards waste disposal in the area.

Table 2: Frequency of waste disposal in the area

<table>
<thead>
<tr>
<th>Variables</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily</td>
<td>51</td>
<td>34.00</td>
</tr>
<tr>
<td>After 3 days</td>
<td>49</td>
<td>32.67</td>
</tr>
<tr>
<td>Weekly</td>
<td>34</td>
<td>22.67</td>
</tr>
<tr>
<td>Two weeks</td>
<td>8</td>
<td>5.33</td>
</tr>
<tr>
<td>Monthly</td>
<td>6</td>
<td>4.00</td>
</tr>
<tr>
<td>2.4 days intervals</td>
<td>2</td>
<td>1.33</td>
</tr>
<tr>
<td>Total</td>
<td>150</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Source: Field survey (2011)

Methods of waste evacuation

The method of waste evacuation presented in figure 2 shows that 70% of the people used manual means in evacuating their waste to the final waste dump. This is because majority of the people live at close proximity to the receptacles. Figure 2 indicate that 20.4% of the people use wheelbarrow in waste evacuation. This could be attributed based on the volume of their waste generation and accessibility to dump sites. It was also observed in figure 2 that 8% of the residents used truck especially, where their distance to dump site are far and when the debris are too large to accommodate wheelbarrows. However, only 7% of the residents evacuate their waste through other means which are easier and cheaper to them.

Figure 2: Methods of waste evacuation
Source: Field survey (2011)

Result analysis

The influence of family size on the rate of waste generation presented in table 3 revealed that the calculated $f$-value of 7.32 was obtained as the value of the influence of family size on waste generation and disposal. This value is found to be greater than the critical $f$-value of 2.43 at 0.05 level of significance with 4 and 145 degrees of freedom based on this, the null hypothesis was rejected while the attenuate hypothesis is retained. The interpretation of this result shows that family size has a significant influence on waste generation as presented in table 3. The extent to which enlightenment has brought about changes in people’s attitude towards waste disposal was reflected by a calculated $t$-value of 3.18 greater than the critical $t$-value of 1.97 at 0.05 level of significance which indicate that environmental enlightenment has a significant influence on people’s attitude towards waste disposal and management in the area.

Table 3: Family size and people’s attitude in waste generation and disposal

<table>
<thead>
<tr>
<th>Group</th>
<th>Family size</th>
<th>N</th>
<th>X</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2</td>
<td></td>
<td>28</td>
<td>33.06</td>
<td>4.86</td>
</tr>
</tbody>
</table>
To find out whether the class of family size significantly influences the rate of waste generation, the fisher's least significance difference (LSD) post-hoe test was used as shown in table 4. The fisher's least significance difference presented in table 4 shows that a significant t-values was observed between groups 1 and 3, 1, 4; 1 and 5; 2 and 3; 2 and 4; and between groups 2 and 5. There is however, significant difference between groups 1 and 2, 3 and 4 and between groups 3 and 5. The interpretation of this shows that there was a significant difference in the rate of waste generation between the group that the t-values are significant. In each of such cases, the calculated t-values are observed to be greater than the critical t-value of 1.97 at 0.05 level of significance.

Table 4: Fishers’ LSD of the influence of family size on the rate of waste generation

<table>
<thead>
<tr>
<th>Group</th>
<th>Family size</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2</td>
<td>(n₁-28)</td>
<td>33.06</td>
<td>-0.13</td>
<td>-5.22</td>
<td>-4.57</td>
<td>-4.40</td>
</tr>
<tr>
<td>3-4</td>
<td>(n₂-21)</td>
<td>-0.15</td>
<td>33.19</td>
<td>-5.09</td>
<td>-4.44</td>
<td>-4.27</td>
</tr>
<tr>
<td>5-7</td>
<td>(n₃-49)</td>
<td>-7.49*</td>
<td>-6.63*</td>
<td>38.28</td>
<td>0.65</td>
<td>0.82</td>
</tr>
<tr>
<td>8-10</td>
<td>(n₄-41)</td>
<td>-6.33*</td>
<td>-5.62*</td>
<td>1.04</td>
<td>37.63</td>
<td>0.17</td>
</tr>
</tbody>
</table>

Source: Data analysis (2011)
<table>
<thead>
<tr>
<th>11 and above</th>
<th>-4.96*</th>
<th>-390*</th>
<th>0.84</th>
<th>0.17</th>
<th>37.46</th>
</tr>
</thead>
<tbody>
<tr>
<td>Msw = 8.66</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Data analysis (2011)
Note: Group means are on the diagonal
Difference between group means are above the diagonal
Fishers’ LSD test values are below the diagonal

**Recommendations**

It has been observed that Calabar municipality accept waste disposal and management is revolutionarized the problems of waste disposal and management would continue to persist. Therefore, the following measures are hereby recommended if the negative attitude of the people to waste disposal and management must be averted.

- Effective campaign should be carried out for men to see the necessity of consciousness with regards waste disposal and management.
- Government should re-introduced the monthly sanitation in order to make a lot of urban dwellers become more conscious of the purity of their surroundings.
- Government should provide adequate funds for proper execution of environmental programmes. This would help secure new modern waste management technology that could help correct the negative attitude of citizens towards waste disposal and management.
- Open dump sites should be declared out of bound as they are always in a state of abuse.

**Conclusion**

Today, the attitude of urban dwellers to waste generation and disposal has caused great damage to the human ecosystem. The poor attitude of urban dwellers to waste generation and disposal has impacted negatively on the human health and
sanity. The study revealed that the residents in Calabar municipality were not conscious of the implication of poor waste management which has resulted to the poor nature of the environment in the area. However, since environmental enlightenment changes the people’s attitude to waste management and disposal, it is therefore the responsibility of the various agencies in the industry to ensure effective waste management and disposal in order to avoid health implications in the area.

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Role of Education in Employment opportunities for women in Iran as a important factor for the sustainability of the society

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Abstract:

Education plays an important role in a person’s life because it allows for personal growth, enrichment, awareness of environment and opportunities for social-economic improvement. It is because of education, research and application that society has progressed the way it has and it is the lack of education that perhaps can be blamed for many dark spots of human history, particularly for women. Therefore, it is only logical to think that education would be available throughout the world, to all people, of all colors, economic backgrounds, gender and ethnicity in order to safeguard the future’s wellbeing.

One of most important criteria for measuring development of one country is importance of the subject and validity women have. Whatever the effective and active attendance of women becomes more in the social affairs, the country develops more. It's clear that real importance is not apparent and effective and the attendance is not symbolic. As women are appreciated, they can undertake their main tasks, namely up bringing human and regenerating occupational opportunity that will be accomplished in the future society. Thus the recognition of women status and promoting their basis and the role of training has very important to develop occupational opportunity.

Many researchers have discovered that the road to education holds many traps and barriers. It depends much on the economy of a nation, and its religious and racial beliefs. In Iran for example, the role of education on women’s life has affected their relationship with the other gender and their role in society. Most significantly, education after the Islamic Revolution has been used to promote the ideals of Islam, and to construct the ideals of motherhood and wifehood.
**Keywords:**

Education, Employment base, active population, Women participation

**Introduction**

Higher education is a process of imparting knowledge and skills to individuals and empowers them to;

- Participate in development, decision making and democratic process. Effective education takes place when students are able to participate fully and benefit from that education.
- Disability can be explained in terms of any restriction that results from impairment and hinders a person from performing an activity within the range considered normal for a normal person (Heward, 2006, Hardman, Drew & Egan, 2005).

According to UN Convention on the Rights of Persons with Barriers that limit a person’s full participation include; negative attitude, discriminative policies and practices, and inaccessible environments as a result of these barriers, students are being excluded from accessing higher education. According to findings from a series of focused discussion groups from 12 countries carried out in late 2005 and early 2006, access to education was one the main concerns raised by these young people (Ncube & Macfadyen, 2006)

According to UNESCO (2005), inclusion as a dynamic approach of responding positively to pupil diversity and of seeing individual differences not as a problem but as opportunity for enriching learning The aim of inclusive education is to remove the historical exclusion within and outside of the school through enactment or modification of legislation, policies and educational management practices in order to promote the reorganization of the educational systems and the acceptance of all students independently of their differences, (Rustemier, 2002)

Differences among students may be related to disability, gender, size, color or ethnicity and disability is just one of these differences and does not limit ones strengths and abilities.
Inclusive education recognizes that these differences are valuable and bring creativity and through them ideas are shared and experienced. In other words, inclusion is about transforming systems to be inclusive of everyone and not about inserting persons into existing structures (UNICEF, 2009). The authors, (Heward, 2006, Hardman et al, 2005) State that effective inclusive education identifies barriers in education systems that hinder the participation of students come up with solutions. Inclusive education constitutes a paradigm based on the concept of human rights and social model that unites equality and difference as inseparable values and surpasses the formal quality model (Jonsson, 2001, P: 108).

The National Report on Women in Iran (1995) cited that Iranian female secondary school graduates now have the opportunity to further pursue their education at the university level in the fields benefiting their talents and abilities because many educational obstacles facing women have been removed. The increased opportunity for female students and faculty is related to different issues. According to the National Report on Women in Iran (1995), important factors such as establishing suitable facilities (such as educational environment segregated by gender) have promoted women’s education in many fields. This combination has merged to produce desirable effects on the educational status of women in Iran. The impact of these factors has also been seen on religious beliefs, a noticeable point. Consequently, recent studies indicate a decline in statistical differences between the number of male and female students. The National Report on Women in Iran (1995) revealed that, nationally, academic female students’ performance now stands five percent above that of male students.

Achievements of women in higher educational levels, and the number of female students in different fields, have increased noticeably in recent years, The National Report on Women in Iran (1995) indicated a comparison between academic years 1987-1988 and 1992-1993. The comparison shows the following achievements in women’s graduation from universities in the span of those five years: 1) an increase of 119 percent in the number of graduates in social sciences and humanities; 2) a two-fold increase in graduates in basic sciences; 3) an increase of 230 percent in the number of graduates in agricultural and veterinary sciences; 4) an
increase of 70 percent in technical and engineering fields and medical sciences; and, 5) an increase of 246 percent in different fields of arts.

The national Center for Education (1995), noted in their report that

Over the past two decades, (Iranian) women have made substantial educational progress. The large gaps between the education levels of women and men that were evident in the early 1970s have essentially disappeared for the younger generation. Although they still lag behind males in mathematics and science achievement, high school females on average outperform males in reading and writing, and take more credits in academic subjects. In addition, females are more likely than males to attend college after high school, and are as likely to graduate with a postsecondary degree.

Not only in the secondary education level, since the 1979 Islamic Revolution in Iran, but also the number of Iranian female students entering colleges and universities has rapidly increased. Additionally, the number of Iranian women professionally involved in higher education, either in administrative or faculty positions, has escalated noticeably.

The number of women graduating from universities and higher education institutions increased almost two-fold between 1987-1988 and 1992-1993. The number of women staff members at universities almost doubled during this same period. Among the 30,262 academics serving in the field in 1992-1993, about 18 percent were women. At present, 5.7 percent of professors, 16.5 percent of associate professors, 21.9 percent of assistant professors, and 36.9 percent of university instructors are women. A total of 2,220 women are staff members of faculties of medical sciences, which represents 18 percent of the total, (The National Report on Women in Iran, 1995).

Unemployment of women in management positions

Among great force of women w, no specialized and management positions have been engaged by selecting them. This belief is among women that they don’t apply to effective
tasks and their ability and knowledge are not used. All of them believe that occupational
capacity and mental potential are high then appointed ones. Women don't have an effective
role in making a decision and compiling politics, but they are active to execute politics and
decision of men. Objective implications of this insight in short term will be appear in the
form of disinterestedness and disesteem against society's affairs in long term is depression,
uselessness and pessimism against compilers of politics and advisors of course of action in
higher education.

Research's purpose

The aim of this research is to recognize women's status and promote their basis to make
occupational opportunity the level of participation in educational, research and executive
activities is very low in Iran. In other words, recognition of the manner of using services by
women and studying applying them in key position in the society and obtaining info based on
reality of the level of participation in social political fields.

Research's method

in this research we try to follow research scientific method, for this purpose, firstly we
should determine the problem, then after making clear our suppositions about the reason of
making problem, we should seek regularly and systematically to gather data relating to these
suppositions. We use various methods for taking data. At first, a questionnaire consists 54
questions have been prepared and studies for all women from four selected provinces in Iran.
Moreover, second-hand resources of info such as statistics and present info in libraries,
archives and other orgs and ministries are effective to complete the society.

Table (1) number and ratio of female members of parliament during six periods
of deputation in post-Islamic evolution

<table>
<thead>
<tr>
<th>Period</th>
<th>Number of women members of parliament</th>
<th>Ratio of women to men members of parliament</th>
</tr>
</thead>
</table>

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>4</td>
<td>1.85</td>
</tr>
<tr>
<td>Second</td>
<td>4</td>
<td>1.66</td>
</tr>
<tr>
<td>Third</td>
<td>4</td>
<td>1.6</td>
</tr>
<tr>
<td>Fourth</td>
<td>9</td>
<td>3.6</td>
</tr>
<tr>
<td>Fifth</td>
<td>14</td>
<td>5.5</td>
</tr>
<tr>
<td>Sixth</td>
<td>11</td>
<td>3.79</td>
</tr>
</tbody>
</table>

In election of Islamic urban and rural councils in February 1998, 97.86 men and 2.2 women are members of parliament. In this year, among women candidates in all countries, %10.8 ones of urban regions and % 6.4 rural regions are as members of Islamic council of urban and rural. (Center fir participation, 2000, p: 60)

Percentage of attending women in management jobs and also in the family as well as the parliament is related to economical development. In other words, whatever the social in equivalence is low; the development of country is higher. (Safari, 1994, p: 136)

Thoughts and behaviors of housekeeping women who work in the home are more traditional than those of working ones. Thus we conclude that regarding to the similarity of two studied groups, this difference at thoughts and minds of housekeeping and working women is due to social work places. (Jarallah, 1992, p: 11)

Rural researches show that unless high share of women in manufacturing decision relating family affairs and by increasing this share, their country in making decision. The reason of this increment is manufacturing activity of women that is a home work and as a result no salary would be paid. In other words, whatever the level of social inequivalance in mentioned indexes is lower, development of country is higher. (Safari, 1994, p: 136)

Thoughts and behaviors of rural housekeeping women show that unless relatively high share in manufacturing works, they have negligible role in manufacturing decisions that are relating to the affairs, but increasing the share of making decision of women don't lead to increase their country. The reason is manufacturing activity of women is from home tasks and as a result, they don’t receive a salary. They are form non-paid home workers. But in rural
environments as she receives as same as a worker, the power of making decision is increasing. (Mashhoor, 1976, p: 47)

Although the share of rural women with independent income is not as same as their activities, the tendency to reach the autonomy lead them to move, in the manner % 50 women from Yazd and % 28 women from Azerbaijan- west have a salary. Getting independent income doesn’t cause to separate women from human, but this salary spends to obtain life costs and train the children. (Shaditalab, 1997, p: 191)

Women and higher education in Iran

Important and effective factor to exploit appropriately material and mental resources and basically cultural, economical development is depending scientific knowledge and capacity of human force. Universities and centers of higher education in every country are best scientific place to train human force with scientific abilities and self confidence. Higher education is one of present new thoughts and solutions. Higher education is one of present fields to train specialized human forces. These days in specialized organization are one kind of investment and it is applied through economical, social, cultural and national development. Naturally, women and men working in same position have equal rights. Evidence shows that after Islamic revolution, educated Muslim women have proper position to make a decision. In this way, accessibility those to different educational levels have increased and it's most important indexes of promoting women in the society. all precise evaluations in the past and present have put the base of statistical indexes. If the opportunity women to try accompanying men or even getting ahead of them, they would be successful by removing employment family barriers and this trend is ever-increasing and to plays a sensitive role in all scientific levels. In education, according to recognize acquiring knowledge and the necessity of science for every one either man or woman, social laws cannot make obvious barriers to take the science. Practically, women encounter limitations that they don’t believe before. It's clear that quality and quantity of development of participation and attending women politics to make smooth this path. Whatever quality and quantity of their country is higher, the society takes useful and positive effects. Thus in massive politics such as 5 year programs of development, government attention to women and statistics show that attending women in medical centers,
the numbers of female students is increasing in universities as in the year 2000 more than 80 medical sciences students. It's necessary to mention that from 73357 students, 346342 persons (47.22%) are women. Also statistics of women students in the year 1999 presented 39.7% female students. Moreover, all female students and their marriage during studying so many barriers are acceptable and proper. Recognizing effective factors on falling women's status is based on the technology and the sciences to plan the future life. Women leave labor market with own desire. But it's not acceptable for developing country that suffers the lack of specialized human force. Different scientific levels of men and women's job and income is not only for Iran, but also for all countries, especially developed countries, in all countries by increasing scientific level, attending women in the society is decreasing. It seems that main reasons of isolation of women are gender position in the society. It's hoped that Iranian women can show their capacities by clear image of the status women in industrial society to promote scientific level. (Ellis, p 183)

Table (2) number of educated women in universities and higher education centers, 2002-2006

<table>
<thead>
<tr>
<th>Percentage of change number of female educated students against previous years</th>
<th>Number</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.12</td>
<td>55090</td>
<td>2002</td>
</tr>
<tr>
<td>14.15</td>
<td>62855</td>
<td>2003</td>
</tr>
<tr>
<td>4.3</td>
<td>65485</td>
<td>2004</td>
</tr>
<tr>
<td>13.82</td>
<td>74536</td>
<td>2005</td>
</tr>
<tr>
<td>17.11</td>
<td>82856</td>
<td>2006</td>
</tr>
<tr>
<td>12.8</td>
<td>69057</td>
<td>Average</td>
</tr>
</tbody>
</table>

The center Statistical Yearbook of Iran, the years 1956 to 2006
Above table show the level of changing in numbers women in universities since 2002-2006. Average annual change % 12.08 is highest positive changes in the years 2005-2009 and % 17.11 is lowest change in the years 2003-2004 with % 4.13.

Another social factor that is very important is education. The first school that was special for girls was built around 86 years ago and the data gathered in 1922 show that the number of girls and boys who registered at schools had been 7239 and 35000 respectively. (Bina, 2002) This numbers clearly show the girls retardation that year. In 1965, the percentage of educated men and women had been 22 and 7/3 respectively. In 1991, this number for men and women reached to 81 and 67 respectively. (Ghiasi, 2000)

Although, the level of women education has had a significant increase, daringly, we can say that its increase in recent 10 years is not comparable with 63 years ago. But the number of educated women has been always less than educated men. In 1956, 1 percent of rural population had been educated that reached to 54% in 1991. (Bina, 2002, P: 78)

It is a development but we must remember that 64 % of rural women are still uneducated. But the number of educated men has been always more than women. In 1991, just 50 % of rural women have been educated. (Ghiasi, 2000)

Nowadays, around 15 % of rural girls do not go to school when they are 6 to 9 year old. (Bina, 2002)

Although, this number, in comparison with previous years, is very small, but warns us about another generation of uneducated mothers. Women need have an education higher than a primary level to have an active social participation in society.

Many girls, unlike boys, still do not register at school (15% of rural and 7% of urban girls). Only 9% of all the girls who have registered at high school and 23% of the girls who have registered at secondary school are rural. In 1976 and 1992, respectively, just 30% and 28% of all the university students were girls. So, it can be said that, nearly, no change has been taken place in the number of girls. That gathered data show that the number students in agricultural and veterinary fields at ingenious level is less than one percent and at BA is around 5/5% and at MA and PhD is 4%. (Amini, A, 2001, P: 22)
The number of girls graduated from technical school and university in the technical and industrial fields that are essential for industrial society, are about 23% and 3/7% respectively. (Bina, 2002)

In the second development program, the Plan Organization had suggested that some especial policy should be adopted in order to decrease rural women deprivation.

Another social factor is marriage. The statistic show that in 1991, 2/2% of 10 to 14 year old has married. (Ghiasi, 2000), After 1976 and notably in recent years the number of girls who marry in their 10 to 14 year old has had a significant increase. Before these girls can finish their education, must take the role of a mother. An issue that is worth noting is that from 25 marriages that take place in these ages, one has been led to divorce. According to statistic, around 50% of girls get marry before 19. ( Bina, 2002)

Certainly, these women by marrying at an early age not only increase the vulnerability of family but also cannot be mothers who can motivate their children to develop

According to UNESCO statistics, adult literacy rates in Iran (age 15 and over) have increased from 63.2 percent (72.2 male and 54 female) in 1990 to 76 percent (83 male and 68.9 female) in 2000, pointing to significant progress in female literacy over the last decade. One witness's further gender equality when literacy rates for Iranian youth are taken into consideration. The youth literacy rates (age 15 to 24) have increased from 86.3 percent (91.7 male and 80.8 female) to 93.8 percent (96.2 male and 91.3 female) during the 1990-2000 period (UNESCO, 2002, P: 218).

Looking at gross enrollment ratio in early childhood care and education for children age 3 and above, one witness a shift from a GPI of 0.95 in 1990-1991, showing a disparity in favor of boys, to a GPI of 1.06 in 1999-2000, indicating a disparity in favor of girls. The same trend is expected at the higher education level. According to the Ministry of Science, Research, and Technology, there was an increase in the percentage of women enrolled in public universities from 27.3 percent in 1990 to 44.1 percent in 1999 (Ghiasi, 2000, P: 16)

The study of various educational indicators, including access to early childhood care and education, participation in primary, secondary, and higher education, and adult literacy rates, points to considerable progress made towards gender equality in Iran over the last decade.
The most significant progress has been made at the primary education level, where the gender parity index (GPI: ratio between girls’ and boys’ rates) in the gross enrollment ratio went from 0.90 in 1990-1991 to 0.96 in 1999-2000, and the secondary education level, where the GPI went from 0.73 to 0.92 during the same period (UNESCO, 2002, P: 242).

The ideal female citizen in the Islamic Republic of Iran the New Muslim Woman is the product of the coexistence of tradition and modernity. She is thus faced with a paradox (Mehran, 2003, P: 269).

An analysis of the trend in education from 1990 to 2000 points to increased gender equality at the primary and secondary school level. The trend in access to primary education in terms of gross intake rate (GIR) shows a gender parity index of 0.98 in 1990-19991 and 1 in 1999-2000, indicating parity between sexes in that year. The net intake rate (NIR) in primary education in 1999-2000 was a total of 38.4, with a male rate of 38.7 and female rate of 38, pointing to a GPI of 0.98 (UNESCO, 2002, P: 234).

We are not the guardians of women to give them something by force or take it away from them. We are only preparing the ground for women to recognize their rights and capabilities, and acknowledge their own merits. Once they have done that, they will reach their rightful position in society. And the first prerequisite is to increase women’s knowledge and education, (La’li, 1999, P: 239).

Yet another indicator of the internal efficiency of the education system is the percentage of repeaters. The repetition rate in primary education in Iran is lower for girls in Grades 1 through 5. In 1999-2000, the male repetition rate in Grade 1 was 10.2 compared to 7.9 female; 7.6 male and 4.7 female in Grade 2; 5.4 male and 2.9 female in Grade 3; 6.1 male and 3.1 female in Grade 4; and 4.1 male and 2 female in Grade 5 (UNESCO, 2002, P: 266).

The dual role and responsibility of the post-revolutionary woman is clearly reflected in the Constitution of the Islamic Republic of Iran. The latter “considers women’s employment and their social and economic activities to be very meaningful and conducive to social well-being” while, at the same time, emphasizing the role of the woman “as a mother and her significance in maintaining strong family bonds and affectionate relationships. (Women’s Bureau, 1997, P: 58).
According to the enumeration in 1986, the proportion of men to women is 105%. Regarding the equal number of men and women, it is expected that both men and women enjoy the same social services and have the same opportunities for economical participation. But the statistics show that men activity is much more than women economical activity. This difference, regarding the kind of their job, is clearly shown in their employment statistics. For example, among 1054000 people who have scientific and specialized jobs, just 243000 of them are women while the number of men reaches to 719000. Also, at the high ranking official and administrative level, while the number of women is 2000, the number of men at these levels is 43000. With a brief glance at conditions of women education, you can clearly understand this issue. (Mohammadi, 2002, P: 82).

Table (3) the number and proportion of the educated people who are 6 and more year old between 1976 and 1986

<table>
<thead>
<tr>
<th>1976</th>
<th>1986</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Men &amp; Women</strong></td>
<td><strong>Woman</strong></td>
</tr>
<tr>
<td>Number</td>
<td>Percent</td>
</tr>
<tr>
<td>Total Urban</td>
<td>12877075</td>
</tr>
<tr>
<td>Rural</td>
<td>8628239</td>
</tr>
<tr>
<td></td>
<td>4248836</td>
</tr>
</tbody>
</table>


Although, in years between 1976 and 1986, the number of educated women increased and from 35/5% educated women in 1976 reached to 52/1% in 1986, but on the one hand, the level of educated men is still in a lower position and on the other hand, in 1986, the number of the rustic women who were educated was at the lowest level (36%). Despite of an increase in
The level of education in the mentioned period, the number of educated women in urban areas has been more than rural areas in 1976 that was because of the emigration of villagers to the cities and not because of the lack of equipment for education in villages.

On the other part, the increase in the number of educated people has been more in those less than 15 year old ones and the rate of education in adulthood has had a little increase. Considering the effect of higher education for women on decreasing the births, we must prepare the situations for them to continue their learning and be efficient in country’s economic expansion.

**Conclusions**

One of the most important motivations that make women to work out of house is making money to support their family and if the men’s income was enough to support their family, women have not a strong tendency to work.

First, women mention many factors as the blocks to progress in their employment that contrary to public opinion is not richness or lack of interest or little education but the main reason is the children existence in family because women are forced to sacrifice and stay at home and take care of their children. Second, for some women, not a single factor, but a combination of some factors prevents them from working out of house. We hope that by adopting suitable strategies, women can progress and develop their opportunities to have economic activity.

The universities are not aware that their institutions are discriminative against students with differences including physical, intellectual, sensory, ethnic, or emotional. HE institutions to become sensitive and responsive to the diverse context of students conditions (Anittos et al, 2008, P: 27)

Higher education has a responsibility to restructure its programmers to include; provision of assistive Devices, accommodation of academic flexibility, supporting aids and services, modification of the classroom environment, sign language interpreters and note takers among others. Higher education policy should recognize and appreciates differences among students
who enroll or intend to get into higher education programmers and such formulation of such policy ought to involve people with disability in planning, implementation and evaluation.

In order to establish equality of opportunities between men and women, they must give equal salary and fringe benefits. The above social phenomena have a close relationship with each other. We must study them to change women circumstances in labor market. But it will not be an easy work because regarding the predominant social and cultural values most people think that men are superior to women in political, social and economic issues.

Suggestions

The Ministry of Labor in collaboration with other ministries should impose a ban on any sexual discrimination and give women an equal opportunity to get jobs congruent with their education.

The women must determine the kind and direction of development programs by accessing to better health, gaining more income, learning new skills and technologies, and having equal rights with men and having control over their own body.

The employed women with higher education, the employed women with more experience and married women believe that discrimination, education factors and economic issues are very influential in occurring occupational problems and the administrators must pay attention to these issues.

The governments must pay more attention to the women activities in their home and provide them social insurance and encourage them to have a job of their own and see their homework as a job.

The ministries and Social Security Organization should decrease the time that women work, so that women deal with other works related to their family.

Establishment of consulting centers for women and training them in dealing with their social and familial problems.

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Customer Satisfaction Measurement and Analysis Using Six Sigma in Telecom Sector of Pakistan

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Abstract: Six Sigma has been considered as a powerful business strategy that employs a well structured continuous improvement methodology to reduce process variability and waste within the business processes along with an effective application of statistical tools and techniques. The objective of the study measures the customer satisfaction in Telecom sector of Khyber Pakhtoonkhawa (KPK) province of Pakistan by using the six sigma methodology. The study further elaborates a mixture of tools and techniques within the Six Sigma methodologies to achieve substantial financial benefits and customers' satisfaction. The results of Pareto chart shows that there are number of problems which are facing by the existing customers in the customer service centre i.e., network problems, sim registration problems, billing issues, sim blocking issues, etc.

Keywords: Six sigma; Customer satisfaction; Telecom sector; Pareto chart; Pakistan.
1. Introduction

During the last few decades, many quality improvement methodologies have been used extensively by organizations to improve products and services. Techniques like continuous quality improvement (CQI) and total quality management (TQM) have been used to provide modest, incremental improvements, whereas techniques like reengineering and Six Sigma have been used for making drastic changes to existing processes.

Six Sigma is a disciplined approach to improving product, process and service quality. Linderman et al. (2003) define Six Sigma as an organized and systematic method for strategic process improvement and new product and service development that relies on statistical methods and the scientific method to make dramatic reductions in customer defined defect rates. Six Sigma has evolved significantly and continues to expand to improve process performance, enhance business profitability and increase customer satisfaction. Quality management has been an extremely important management strategy for achieving competitive advantages and improvements. Traditional quality concepts like Statistical Quality Control, Statistical Process Control, Zero Defects and Total Quality Management, have been major key players for many years; While Six Sigma is a more recent initiative quality improvement to gain popularity and acceptance in many industries as well as service industries across the world (Hendry and Nonthaleerak, 2005). The basic elements of Six Sigma like Statistical Process Control, Failure Mode Effect Analysis, Gage Repeatability and Reproducibility and there are other tools that have been on reduction of rejects and enhancing the quality. Six Sigma provides a basic framework in which all these tools can be performed with management support (see, Bhargava et al. 2010).

According to 3D Educators (2011), Six Sigma Green Belt training provides participants with enhanced problem-solving skills, with an emphasis on the DMAIC (Define, Measure, Analyze, Improve and Control) model. Six Sigma Green Belt certification helps the employee serve as a trained team member within his or her function-specific area of the organization. This focus allows the Green Belt to work on small, carefully defined Six Sigma projects, requiring less than a Black Belt’s full-time commitment to Six Sigma throughout the organization (see, Figure 2).
3D Educators (2011) further elaborates six sigma models for practitioners (see, Figure 3) on the following points:

- Communicating a business strategy across the organization
- Integrating with Lean Manufacturing, TOC, & other improvement methods
- Applying the DMAIC improvement process
- Selecting successful Six Sigma projects and project teams
- Planning and executing projects
- Significantly increasing profitability through Six Sigma projects
- Selecting the right statistical tools

This study has been carried out at Ufone Franchises in Abbottabad, Pakistan, to finds the customer satisfaction using a step-by-step application of the Six Sigma DMAIC (Define–Measure–Analyze–Improve–control) approach to eliminate the defects. This has helped to reduce defects and customer problems at customer service centre of Ufone franchise, Abbottabad. It will eventually lead to improve productivity and on time delivery to customer. The objectives of the study examine the efficacy of Six Sigma quality initiatives in the telecom service industry. This paper provides insights into some aspects of the Define, Measure, and Analyze phases of the DMAIC strategy application to selected Ufone franchises. The results find that the
potential for achieving and sustaining lower costs, greater efficiency, reduced cycle times, and overall improved customer care, exists with careful planning and properly executed Six Sigma programs designed for telecom sectors.

This paper is organized in five sections. Section 2 shows a literature review. Section 3 provides data source and methodological framework. The empirical results are presented in Section 4, while the final section concludes the study.

2. Literature Review

Several facets of Six Sigma have been analyzed in the previous researches, with highlights on success factors and possible limitations. In the face of overwhelming voices on the merits and power of Six Sigma, the fact remains that Six Sigma is most effective when an organization already has a firm idea of what forms of products and services are in alignment with the organization’s goals and customer expectations. Six Sigma is suited to problems in which the output can be readily measured. The methodology is meant to be implemented by a hierarchy of specially trained personnel—the ‘Belts’ of various colors. Thus there is now a fast-growing industry of Six Sigma consultants and training programs, with widespread certification activities conducted in an unregulated variety of ways.

According to Harry and Schroeder (1999), six Sigma is a powerful breakthrough business improvement strategy that enables companies to use simple and powerful statistical methods for achieving and sustaining operational excellence. It is a business strategy that allows companies to drastically improve their performance by designing and monitoring everyday business activities in ways that minimize waste and resources while increasing customer satisfaction. The Six Sigma approach starts with a business strategy and ends with top-down implementation, having a significant impact on profit, if successfully deployed. The process improvement methodology that has been used extensively in industry is Six Sigma.

In the Financial Times (Tomkins, 1997), GE explained the Six Sigma quality initiative as “a program aimed at the near elimination of defects from every product, process, and transaction” (p. 29). This continuous improvement concept was introduced at and popularized by Motorola in 1987 in its quest to reduce defects of manufactured electronics products. The basic concept of Six Sigma is a disciplined, quantitative approach for improvements, based on defined metrics, in manufacturing, service, or financial processes.

Hahn et al. (1999) describe the Six Sigma initiative and its impact on major corporations like AlliedSignal, GE, Motorola, and Polaroid. They explain the DMAIC process and the major elements of the Six Sigma implementation. They also note that the initial emphasis of Six Sigma was in manufacturing, but now it is being applied in key areas beyond manufacturing and beyond what would traditionally be considered quality. Some of the areas where Six Sigma methodology is being applied are voice of the customer, value chain analysis, customer satisfaction, and financial and banking services.

The success or failure of Six Sigma deployment in a business process hinges on selecting projects that can be completed within a reasonable time span (four to six months) and will deliver a tangible (quantifiable) business benefit in financial terms or customer satisfaction. The selection of suitable projects in a Six Sigma program is a major factor in the early success and long-term acceptance of Six Sigma within any organization. According to Adams et al (2003), during black
belt training before project identification is the classic—getting the cart before the horse’. The project selection process must listen to three important voices: the voice of the process, the VOC and the voice of strategic business goals. According to Snee and Rodebaugh (2002), there are four key phases to the development of a mature project selection process: to identify the black belt projects to be worked on in early stages of Six Sigma, to create a Project Hopper (i.e. a collection of projects), to check that the project is linked to the strategic improvement of the organization and to create an improvement system that manages all the improvement efforts of the organization.

Antony (2004) stressed the importance of the following guidelines when selecting any Six Sigma project: a linkage to a strategic business plan and organizational goals; a sense of urgency (how important the project is); the project scope (achievable within four to six months); the project objectives must be clear, succinct, specific, achievable, realistic and measurable; the project selection criteria must be established; the project must have the approval and support of senior management; there must be a focus on CTQ; and project selection should be based on realistic and good metrics (DPMO, yield, process capability, etc.). The aforementioned guidelines also emphasized in the existing literature of Six Sigma. Snee (2005) has drawn attention to barriers in project success and concluded that a common theme of these barriers is that they are all management related. QSG (1993) believe that systemic approaches to business excellence transcend industry boundaries. They also recognize that a deep understanding of a particular industry can be useful for certain types of engagements. Figure 4 shows lean six sigma diamond.

![Figure 4: The Lean Six Sigma Diamond](source: QSG (1993))

Kannan (2003) examine Leveraging Lean Six Sigma in Business Process Outsourcing. The figure 5 shows the as-is state of most processes under transition from the client to the service provider in the usual outsourcing initiative.
Typical steps in the BPO transition process include:

i. Process transition. Observing, participating and training in the process; documenting the process and key Critical to Quality (CTQ) or Service Level Agreement (SLA) measures; forming a process team; training the team; and running a pilot effort in parallel to the regular operation of the process.

ii. Transfer to regular BPO operations group. Once the process team is in place with the BPO service provider and it has been executing the process for a certain period of time, it is transitioned to their operations group for ongoing operations.

iii. Measure and report SLAs and metrics. BPO contracts may specify SLA measures like average handle time (for phone processes) or network availability (for network management processes). Service providers often measure a number of additional metrics that help them evaluate the performance of their own employees and/or to make sure that the business process is executed well.

iv. Statistical process control check. Optionally, many service providers make sure that key performance indicators are in statistical process control. If they're in process control, only minor adjustments are made to the process, often necessitated by people turnover or other more minor factors. If KPIs aren't in statistical process control, then root causes may be addressed and adjustments to the process made appropriately.

According to Kannan (2003), the above as-is state of BPO transitions and operations, there's no fundamental innovation or reengineering of the business process. There may be minor adjustments or tweaks, but nothing more. This hardly heralds business transformation in the making. He suggests the to-be state, where the business process is improved continuously using lean Six Sigma (see, figure 6).
The first set of steps are the same as in the as-is state -- process transition, transfer to operations, measure and report SLAs and statistical process control check. Here's what's added.

- **Six Sigma efforts.** These help ensure that the process is in statistical process control whether the process runs as-is or when any fundamental change to the process is implemented. All KPIs need to be stable and in statistical process control! Defects need to be identified and minimized, moving from lower sigma levels towards a Six Sigma level.

- **Process leaning.** This involves a number of tools and techniques that provide continuous improvement to all aspects of a business process -- turnaround time, accuracy, error rates, currency-related effectiveness metrics, customer satisfaction levels and so on. The tools you'll find of value include value stream analysis (making sure that each process step is adding value to the customer and non-value adding steps are completely eliminated or speeded up), failure mode and effect analysis- FMEA (analyzing and minimizing risks due to failure of process steps), service blue printing (analyzing customer touch points and minimizing the chances for making mistakes) and Poke Yoke methods (mistake proofing).

- **Process redesign/innovation.** These flow naturally after an extended period of process leaning and use of Six Sigma. Radical process redesign may not work as well as process innovation and redesign born out of an extended period of deep analysis and understanding of existing processes.

Six Sigma has been widely publicized in recent years as the most effective means to combat quality problems and win customer satisfaction. As a management initiative, Six Sigma is best suited to organizations with repetitive operations for specified outcomes. It aims at preventing non-conformance to defined formats and contents of outcomes, generally identified as defects in products and errors in transactions (Goh, 2002). The success of Six Sigma applications is
reported in terms of sigma levels and the benefits reflected by some financial bottom line. A number of high-profile companies have attributed to Six Sigma the substantial gains in the few years over the turn of the century—coincidentally, also a high-growth period for the broad US economy.

3. Methodology

Six Sigma refers to the philosophy and methods used to eliminate defects in their products and processes or services. A defect is simply any component that does not fall within the customer’s specification limits. Each step or activity in a company represents an opportunity for the defects to occur and six-sigma programs seek to reduce the variation in the processes that lead to these defects. Six sigma advocates see variation as the enemy of quality and much of the theory underlying Six Sigma is devoted to dealing with this problem.

Six Sigma approach ensures that the defects and the problems within the system are greatly minimized. Six Sigma also help us identify the problems and measures that can be adopted to reduce these problems or defects.

3.1. Data collection

Four main problems which are identified as:

i. To identify the overall problems in the customer service centre.
ii. To identify the problems faced by the existing customers of Ufone at customer service centre.
iii. To identify problems faced by new customers in the system.
iv. To identify the problems faced by the customers of Ufone in customer service centre.

A sample of 100 customers was taken who represented the overall population. A questionnaire has been used with 5 main problems associated with customer service:

a. Staff cooperation
b. Skills of the staff
c. Time taken to solve the problems
d. Guidance provided by the staff
e. Customer’s satisfaction of the student affairs service.

The sixth question was about their personal opinion about any other problem that they might have faced with the customer care service. The questions were dichotomous in nature that is in the form yes or no. The questions were created in such a manner that checking the option ‘no’ referred to the problem. The actual questionnaire is attached to the index in the end.

4. Results and Discussion

The results of the questionnaires are given in Table 1 below:
The above table shows the percentage of the responses as provided by the respondents. Respondents rate the cooperation and skills 50% each in both ‘yes’ and ‘no’ column. However, respondents are strictly rate the time element i.e., 90 percent say ‘no’ response and 10 percent say ‘yes’ responses. Forty percent respondents not satisfy the proper guidance provided by the Ufone franchisers. To represent the responses with ‘no’, in the Pareto chart, the scale of 0-10 points was selected (shown in the table 2).

To find out the problems with the existing customers, a separate survey was conducted. A sample of 100 customers was taken. The ratio of male and female customers was kept constant. The survey was conducted carefully and respondents were asked to fill the questionnaires in the supervision and guidance of the group members in order to avoid any errors. The questionnaire had 10 different questions and all the questions represented a problem that can be or is encountered by the customers in the customer service centre. The questionnaire was designed in such a manner that the responses ‘yes’ showed the problem. The percentage of the respondents
of said yes or no was calculated. On the basis of that percentage a scale was created from 0-10 which showed the intensity of the problems, 0 being the least problematic and 10 being the most problematic issue. Pareto chart for problems was made on the basis of this scale. Following is the Table 3, which showed the percentage of responses as given by the respondents from various departments.

### Table 3: Ufone various Departments

<table>
<thead>
<tr>
<th>Questions</th>
<th>Responses in YES %</th>
<th>Responses in No %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Customers ignored</td>
<td>40</td>
<td>60</td>
</tr>
<tr>
<td>2. Busy in office work</td>
<td>66</td>
<td>34</td>
</tr>
<tr>
<td>3. Early wind up</td>
<td>23</td>
<td>77</td>
</tr>
<tr>
<td>4. Illegitimate advantage of seniors and females</td>
<td>66</td>
<td>34</td>
</tr>
<tr>
<td>5. Slow service</td>
<td>43</td>
<td>57</td>
</tr>
<tr>
<td>6. Customer biasness</td>
<td>63</td>
<td>37</td>
</tr>
<tr>
<td>7. Busy in other activities like phone calls etc.</td>
<td>80</td>
<td>20</td>
</tr>
<tr>
<td>8. Asking customers to come back later</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>9. Technical problems</td>
<td>2</td>
<td>98</td>
</tr>
<tr>
<td>10. Lack of quick responses.</td>
<td>57</td>
<td>43</td>
</tr>
</tbody>
</table>

Following Table 4 represents the scale of degree of problems used for the Pareto chart 2.

### Table 4: Degree of Problems

<table>
<thead>
<tr>
<th>Problem</th>
<th>Occurring scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Customers ignored</td>
<td>4</td>
</tr>
<tr>
<td>2. Busy in office work</td>
<td>6.6</td>
</tr>
<tr>
<td>3. Early wind up</td>
<td>2.3</td>
</tr>
<tr>
<td>4. Illegitimate advantage of seniors and females</td>
<td>6.6</td>
</tr>
<tr>
<td>5. Slow service</td>
<td>4.3</td>
</tr>
<tr>
<td>6. Customer biasness</td>
<td>6.3</td>
</tr>
<tr>
<td>7. Busy in other activities like phone calls etc.</td>
<td>8</td>
</tr>
</tbody>
</table>
8. Asking customers to come back later 5
9. Technical problems 0.2
10. Lack of quick responses. 4.3*

*here in the 10th question 'No' response represents the problem. That's why scale 4.3 converted from 43% is taken.

To identify problems of the new customers in the system another questionnaire was designed which contained questions regarding the problems that might be faced by the new customers on first entering the centre. The questionnaire had 5 main problems written in the form of questions, these problems were:

a. Presence of staff
b. Directions needed
c. Consulting more than 1 person in centre
d. Revisiting centre
e. Customer satisfaction.

Following are the Table 5 that shows the responses of the students.

Table 5: Students’ Perspective

<table>
<thead>
<tr>
<th>Problems</th>
<th>Responses in YES %</th>
<th>Responses in NO %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Presence of staff</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>2. Directions needed</td>
<td>80</td>
<td>20</td>
</tr>
<tr>
<td>3. Consulting more than 1 person</td>
<td>20</td>
<td>80</td>
</tr>
<tr>
<td>4. Revisiting customer service centre</td>
<td>80</td>
<td>20</td>
</tr>
<tr>
<td>5. Customer’s satisfaction</td>
<td>80</td>
<td>20</td>
</tr>
</tbody>
</table>

Table 6 representing the scale of degree of problems used for the Pareto chart 3.

Table 6: Scale of Degree of Problems

<table>
<thead>
<tr>
<th>Problem</th>
<th>Occurring scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Presence of staff</td>
<td>0</td>
</tr>
<tr>
<td>2. Directions needed</td>
<td>8</td>
</tr>
<tr>
<td>3. Consulting more than 1 person</td>
<td>2</td>
</tr>
<tr>
<td>4. Revisiting customer service centre</td>
<td>8</td>
</tr>
<tr>
<td>5. Customer’s satisfaction</td>
<td>2</td>
</tr>
</tbody>
</table>
Six sigma techniques have been used in this study. Pareto chart is a technique that plots the problem in a graph. The problems are plotted against a scale of intensity e.g. in our study the scale set was 0-10. 0 is the least intense and 10 being the most intense value of problem. These charts help to breakdown a problem into the relative contributions of its components. They are based on the common empirical finding that a large percentage of problems are due to small percentage of causes.

Figure 7: Pareto Chart 1

The Pareto chart in Figure 7 shows the level of problems in the customer service centre. Problems were classified in 5 main categories which are:

- Cooperation of the staff
- Skills of the staff
- Time taken to solve the problem
- Guidance provided
- Customer Satisfaction

A sample of 100 customers was taken. The frequencies of these problems are:

- Cooperation: 5
- Skill: 5
- Time: 9
- Guidance: 4
- Satisfaction: 6 Out of 10

These frequencies are then plotted in the graph which represented the data in the form of the chart. The chart shows that the major problem in the customer service centre encountered by the customers is the time taken to solve the problem with the maximum value of 9; second major problem is the customer’s satisfaction of the service of centre with the value of 6 out of 10. Some
customers have mentioned that their problem persisted even after visiting the centre. Then staff cooperation and skills required are needed to be addressed. Both of these had a value of 5 each. Last problem was the guidance needed by the customers, with the value of 4 out of 10.

Figure 8: Pareto Chart 2

Figure 8 shows the problems of the existing customers in the customer service centre, usually for matters like network problems, sim registration problems, billing issues, sim blocking issues, etc. In the chart there are 10 main problems shown along with their intensity. The chart clearly shows that the main problems that the customers are having is that the staff is usually busy in other activities with the scale of 8 out of 10. Following this are the problems, like, busy in office work and illegitimate advantage of seniors and female customers. Round 63 percent customers said that there is biasness i.e. the staff prefers those who are known to them or the ones with references etc. At the scale of 5 which shows a moderate level problem is that the customers are asked to come back later for the problem. This causes delay and cause customers to wait. Slow service and lack of quick responses at the intensity scale of 4.3 which means these issues also need attention although it’s not a big problem but the six sigma approach refers that even the slightest of the problems should be eliminated. Next is the problem that customers that are waiting in line are sometimes ignored by the staff. This problem can be eliminated if problems like busy in other activities, office work, staff biasness will be addressed. Lastly the
technical problems such as problems in computer, databases etc are the least intense with the ranking of only 0.2 which is almost negligible.

Figure 9: Pareto Chart 3

Figure 9 shows the problems associated with the new customers that visit the customer service centre for the first time. These customers have to wait for a while to get new connections. The above chart shows that the problem relating staff presence is equal to zero i.e. the staff is on the desk at all times. After that it’s been noted and the chart proves that customers require additional guidance and directions for smooth service availability. This is one of the main problems that centre needs to address. Similarly revisiting service centre also stays on top at frequency of 8.

The chart basically shows that problem of providing proper guidance and direction to customer should be addressed immediately. By fixing these problems the service rate and the overall service of the customer service centre can be improved to a great degree.

5. Summary and Recommendations

The objective of the study is to measuring and analyzing customer satisfaction in Ufone franchise in Abbottabad, KPK province of Pakistan by using six sigma applications. The results of Pareto chart shows that there are number of problems which are facing by the existing customers in the customer service centre i.e., network problems, sim registration problems, billing issues, sim blocking issues, etc.

On the basis of certain findings, there are some recommendations for Ufone franchise for better complacency and customers’ satisfaction i.e.,

i) Cooperation of the staff is very important especially in this kind of sector where the whole business entirely depends upon customer’s positive feed-back and satisfaction level, as many other alternatives can easily be obtained.

ii) Customer service center’s staff should be enough trained so that they can better deal customers according to their specific problems. There should be minimum response time to customer’s problems. This can again increase the credibility of Ufone service as compared to other cellular networks.
iii) Enough guidance needed to be provided to the new as well as existing customers. This will lead more customers’ satisfaction and more usage of the service.
iv) Staff of customer service centre should be available for guidance and help, this can increase customer trust on the reliability of the centre and quality of services can also be enhanced.
v) Customer service centre can follow six sigma approaches to manage their existing customers as well as attracting new ones. This will not only improves their process but will also lead to strong customer base and financial benefits.

References


URBANIZATION OF ARABLE LAND IN LAHORE CITY IN PAKISTAN; A CASE-STUDY

By
Khaliq-Uz-Zaman

Abstract This paper is intended to explore the extent of converting arable land for urban use and the pace of construction activities on the residential housing schemes. In most of the schemes more than half of the plots are inbuilt because by-laws are very flexible and owners of vacant plots have no fear of cancellation and they consider this investment a better safeguard against inflation. Moreover, speculators invested their money in the plots because no cost / taxes are involved in the keeping of vacant plots. By implementing strict by-laws and imposing capital gains tax on vacant land and converting the collected taxes from the schemes to create revolving funds for house building for really needy, low-middle income groups, the extent of conversion arable land into housing schemes can be reduced

Keywords speculators, pace, conversion, vacant plots, density, land policy.

I- INTRODUCTION

Cities throughout the developing world are facing challenges as they attempt to cope with unprecedented population growth. They are considered the engines of economic and social progress that embody the diversity and energy of human pursuits Lash (1996). Moreover, they offer employment opportunities, entertainment, potential efficiencies and other amenities. Pakistan like other developing countries in the region has witnessed accelerated process of urbanization. The country experienced massive urban population explosion. This resulted in server pressure on the urban land and infrastructure of big cities. According to Siddiqi (2004) the total population of Lahore district was 6.32 million, while the migrants among them were 1.03 million, which constituted about 16.4 percent of the whole population. Thus the area is faced with growing educational, water, sanitation, conversion of arable land for urban use and other social problems because of squatter settlements that are rapidly emerging to house these migrants. The impact of urban area on the surrounding productive farmland is an issue of growing concern. Pakistan is one of the most urbanized countries in South Asia while its metropolitan city Lahore is the second highest as compared to other cities. The overall populated urban area in Pakistan is 36 (%) while 84 (%) of the Lahore population resides in Metropolitan city area (Government of Pakistan 2011). Lahore is expanding, growing and delivering economic incentives and amenities at the cost of productive agricultural lands. These trends may put severe strain on Pakistan’s ability to increase food production in parallel with population growth. This issue concerning the protection of farmlands from housing schemes at the surrounding of the big cities in Pakistan is not properly addressed at government level and city planners are not clear regarding moving forcefully towards managing farmlands as sustainable basis. However, the good news is that many efforts are under way to explore policy instrument in areas such as provision of housing within manageable cost and need oriented basis.
Urban growth in Lahore continues to ascend according to 1981-98 population census but at a slower rate on average by comparison to previous census 1972-81 because much of the population shift involves movement away from concentrated urban centers to vast, sprawling metropolitan regions or to small and intermediate size cities. With its explosive growth which is under way at 4% per year, this trend is projected to continue for several decades and is expected to be about 54% urban by 2025 in Pakistan and 90% in Lahore alone Elahi (2010). Lahore harbors huge populations of the urban poor who are shut off from them the benefit of economic growth. In spite number of vacant planned developed housing schemes, many live in vast squatter settlements. This situation creates pressure on surrounding lands and natural resources.

The pattern of urban growth in Pakistan and its metropolitan, Lahore is not much different from what occurred a century ago in Europe and North America. Many of the forces driving urbanization today are the same chief among them the shift from agriculture to industry and services and the concentration of economic opportunities in urban area Arif (1999).

Economic growth during last four decades remained undeniably more favorable in Pakistan and particularly in Lahore which committed irrevocably to urbanization at an accelerating pace. This situation in the urban Lahore has increased housing backlog progressively; from a shortage of 30% dwelling units against demand, in spite of converted 114,630 suspended hectares of fertile land for construction of housing units Haque , (2007) and Elahi , (2010). A remarkable number of plots are yet lying idle in colonies equipped with all immediately demanded utilities. This has become policy concerning matter Bajwa , (2007) So to identify the causes of slow pace of construction of houses in such schemes this paper is prepared for action oriented policy recommendations.

2- OBJECTIVES OF THE PAPER

The purpose of this research is to study urban land growth and housing of peripheral housing schemes by taking Lahore city in Pakistan as case study. This paper intends to 1) examine the pattern of land use activities in urban areas, 2) determine the tempo or pace of urbanization pattern, 3) identify the causes of low pace of house building units in the residential scheme, and 4) suggest action-oriented policy recommendation measures.

3- METHODOLOGY

Considering the scope and objectives of the study, both the primary and secondary data approach are adopted. Primary data means information observed and collected directly first hand to ascertain the extent of house building construction activities and to investigate the problems of low pace of construction specifically to address the problems in question through face to face interviews, by calling individuals and through informal interviews from focus groups (Property dealers, builders, owners of plots, town planners and presently residents of the housing schemes). Secondary data was collected from the agencies dealing with the construction sector i.e. Lahore Development Authority (LDA), House Building and Finance (HBF), Defense Housing Authority (DHA) etc. More specifically, data was gathered from relevant documents published by relevant public and private sector agencies (population census, agriculture census, Punjab development statistics and Pakistan economic survey). The analysis presented in this paper is based on discussions with Senior Town, planners, policy makers dealing with housing and urban development, builders, real property agents and individual owners of plots and residents. It has also relied heavily on the research interest and direct observation of the author concerning the interaction between planning regime and other development of Lahore.
The conversion of arable land in Pakistan cities for urban use is divided into two categories. Categories are planned new expansion areas and unplanned informal settlements on either private land or mixed private and state land (Slingsby, 1991). According to published data by Governorate of Punjab in 1999, 49% of overall urban Punjab and 15% of Lahore populations live in informal settlement known by slums and katchi abadis. Statistics of land development pattern in Lahore district were derived from the data obtained from LDA and agricultural / population census conducted during past 40 years. According to LDA, 254 schemes have been approved in urban area of Lahore since 1970. Out of which 231 schemes were established by private / Employees Cooperative Housing Authorities, 14 by LDA itself and 9 by DHA.

Slingsby, 1991 discussed that the value of planned land with services equals two times the value of unplanned land as slums are developed for providing affordable shelter to low income groups. Table 1 illustrates that during past 40 years, districts in Lahore reached a total urban area of 114,630 (ha) i.e. 64.7% (52nd place in Pakistan). About 18% conversion of agriculture land was acquired under existing land acquisition procedures prevailing under the present 1984 land Acquisition Act which according to Ellis, (2007) needs to be reviewed to permit speedy and efficient acquisition for shelter when the acquisition is executed by the public sector. In this regard, there is need for a specialized study of the procedure that relates to acquisition, transfer, assessment of price and other to envelop clear recommendation on which government can act. The remaining 82% was acquired for industrial and Government Mega Projects and for informal settlements.

Table 1: Agricultural Land Conversion in Lahore Metropolitan District of Pakistan

<table>
<thead>
<tr>
<th>Period</th>
<th>Total area Hectares</th>
<th>Cultivated Area Hectares</th>
<th>Overtime(%) Change in Cultivated Area</th>
<th>Use of converted Cultivated Areas (Hectares)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Urbanize Land</td>
</tr>
<tr>
<td>1972</td>
<td>177204</td>
<td>166862</td>
<td>94.2</td>
<td></td>
</tr>
<tr>
<td>1972-1980</td>
<td>177204</td>
<td>163413</td>
<td>92.2</td>
<td>10342</td>
</tr>
<tr>
<td></td>
<td>182.6 (5)</td>
<td>2794.4 (81)</td>
<td>229.5 (7)</td>
<td>242.8 (7)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3449 (100)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>13791</td>
</tr>
</tbody>
</table>
In Lahore, land development was undertaken through Housing and Physical Department, LDA, DHA, Private Developers and Cooperative Housing Schemes. Data in Table 1 shows that 8% land was developed by Private / Cooperative Housing Schemes, 5.3% by LDA, 6% by DHA and 82% by the mixture of Government Authorities and informal sectors. In Lahore, about 3,016 ha of agricultural vast areas on the fringes of the city are being converted to urban use annually. If present land use policy and norms are not modified then remaining total cultivated area of 52,332 ha will be exhausted in year 2030. According to Dowall, (1995) ever-increasing numbers of housing schemes in urban areas of Pakistan are not only reducing the cultivable area but also affecting crop production.

According to Government statistics given in Table 2, wheat, rice, maize, sugarcane, vegetables and fruits production dropped considerably during the corresponding period (1987-2008). About 114,630 ha decreased in the cultivated area that were eaten up by housing schemes, which are the major reason for the decrease in major crops production. Housing schemes owners usually, walled their lands even if they were not in use, leaving several hectares of agricultural land uncultivated for years. According to Saleem (2007) an influx of smuggled Chinese production into the Pakistan market had destroyed several industries whose owners invested whatever left with them in the real estate. Big land owners followed industrialist and set up housing schemes, on their farmland. Government should bring industrialists back into productive activities to stop the spread of housing schemes. Generally, the rate of agricultural land conversion into housing schemes was higher than the rate of population Growth and people demand for accommodation, the government must check tendency because population growth should soon lead to more land use by housing schemes.

Table 2: Percentage change overtime in the production of different crops grown in Lahore as a result of decreased cultivated area

<table>
<thead>
<tr>
<th>Crops</th>
<th>Production 000 tons</th>
<th>Percentage Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1986-87</td>
<td>2007-2008</td>
</tr>
<tr>
<td>Wheat</td>
<td>155.71</td>
<td>89.20</td>
</tr>
<tr>
<td>Rice</td>
<td>83.30</td>
<td>53.40</td>
</tr>
<tr>
<td>Maize</td>
<td>19.10</td>
<td>6.10</td>
</tr>
<tr>
<td>Sugarcane</td>
<td>49.90</td>
<td>17.50</td>
</tr>
<tr>
<td>Vegetables</td>
<td>7485.00</td>
<td>2825.00</td>
</tr>
<tr>
<td>Fruits</td>
<td>44335.00</td>
<td>32199.00</td>
</tr>
</tbody>
</table>
In Lahore, inadequate housing production is not due to the lack of serviced land, but it is cramped in the hands of speculators and too expensive. Dowall, (1996) inferred that in underdeveloped countries, governments sponsor land developers and are charged with the responsibility of developing and distributing residential plots to residents. Over the past ten years in Pakistan, these developers have had a difficult time because they have been setting their allotment prices at cost recovery and transferring a considerable “development gain” to allottees. Since there is no guarantee that the allottees are of low or moderate income, the transfer of this gain serves little social purpose. In fact, it creates speculative demand for plots. Dowall suggested that development authorities would have been better off if charged full develop value prices for the allotment and use the additional revenues to build low cost housing or cross-subsidize the sale of plots to accurately targeted low income households. Market pricing could be achieved by disposing of plots by auction. He further suggested that land conversion can be reduced by implication subdivision standards on Land use and infrastructure utilization. The efficiency of subdivision and plot cost can be influenced by (a) plot frontage; (b) block length; (c) street width and infrastructure standard.

5-PACE OF URBANIZATION IN LAHORE DISTRICT OF PAKISTAN
Urbanization refers to the rise in proportion of total Population living in urban areas. (Jone, 1991). A better way to explain the urbanization process is to look at the pace of urbanization. The pace of urbanization represents the change in the levels (proportion of urban population in the total population over a period of time). Two indices have been used in this study to measure the pace of urbanization: One which is called, “Conventional Index”, gives the percentage in the proportion of urban population in the total population, over a given period of time. For example, if the percentage of urban population in total population in 1951 was $P_{51}$ and the corresponding percentage in 1961 was $P_{61}$ then the conventional index of urbanization is given by:

$$\frac{P_{61} - P_{51}}{P_{51}} \times 100$$

The second index used in this study is called the Eldridge index which indicates change in proportion of urban population as a ratio to the maximum possible percent change. From the earlier example index for the Inter-census period 1951-61 is given by:

$$\frac{P_{61} - P_{51}}{100 - P_{51}} \times 100$$

Both indices provide an indication of the time dimension of the process of urbanization. The difference between the two indices is in the nature of denominator used, since the enumerator is the same in the two cases. The Conventional Index (which indicates the change with respect to initial level of urbanization) is greatly influenced by the initial level of urbanization. When the initial level is low the index tends to be inflated and vice-versa. The Eldridge Index on the other hand measures the change in proportion urban in the light of the extent to which
maximum possible urbanization (100%) remains to be achieved from the level of previous census. This index may be considered better of the two as it is less influenced by the initial level of urbanization.

Table 3 shows that the pace of urbanization in Lahore as indicated by both indices, suddenly jumped in the inter-census period 1951-61 (which predominantly reflects the post independence effect for the period between 1947 and 1951), the Eldridge index having gone down from the level of 21.76% for 1951-61 to 20.91% for 1961-72. For the next inter-census period of 1972-81, the Eldridge index became negative (4.53%). The next inter-census period of 1981-98 however, shows a sudden retardation in the pace of urbanization, when the Eldridge index for this period became much lower (-11.85%).

Population of Pakistan which was estimated at about 33.82 million (with 17.8% urban share) at the time of first population census 1951, after independence, increased to 173.5, million in 2010 (with 36% urban share) (table 2). The total population at Lahore in 1951 was 1.13 million (with 75.73% urban share) increased up to 8.83 million (with 87% urban share) in year 2010.

In terms of absolute number, the population living in urban areas of Pakistan and Lahore increased from 6.02 and 1.13 million in 1951 to about 63.05 and 7.72 million in 2010. The present urban population exceeded the total population of the country and Lahore district in 1951. The average annual growth rate of urban population of Lahore declined from 4.72% for the inter census period of 1961-72 to 3.32% for the 1981-98 period. The urban population share in Lahore decreased from 84.3% to 82.44% during 1981-98 census data. The reason for slackening the tempo of urbanization during the 1980-98 might be due to the communities adjacent to large cities have been counted as rural in 1998 census as compared to 1981 census when they were considered urban due to updating of delimitation of areas. Arif, 1998 indicated that urban enumeration is very difficult and has not been conducted exhaustively. In big cities of Pakistan like Lahore, large segments of population earning their livelihood leaving their dependents or partially dependents in their original residents towns/villages, remit money and send material goods at original residences, and visit their dependent family members to support financially weekly or on monthly basis in spite of settled since years at their working cities. At the time of enumeration they avoid to include themselves as urban citizens of these cities on any status because the majority don’t own a house, consequently, enumerated proportion of urban population seems as lower side in Lahore, where as the facts are contradicted.

The population density per (km²) of different census conducted in Pakistan in different period which is one of the determinant factors of quality of life Leautir, (2006). The average population density per km² in Pakistan comes to 218 in 2010 compared with 43 km² in 1951 while in Lahore comes 4,983 km² as compared to 640 km² in 1951. The relative increase density in Lahore during the period of 1951-72 was 128% as compared with 149% during the year 1981-2010. This may indicate the living condition in Lahore is more stressed than overall Pakistan because of less space availability per person. According to Mirza, (1977) this phenomenon of urbanization must, therefore, be restricted through concerted and integrated programs of socio-economic uplift of rural environment with adequate job
opportunities by establishing industry in non urban areas and the ancillary socio-cultural services net work.

**Table 3: Population size, density, change overtime and growth rate of total and urban Population in Pakistan and Lahore (1951-2010)**

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Population Size Millions</td>
<td>Pakistan</td>
<td>33.82</td>
<td>42.98</td>
<td>65.32</td>
<td>84.25</td>
<td>130.58</td>
<td>173.5</td>
</tr>
<tr>
<td></td>
<td>Urban</td>
<td>6.02</td>
<td>9.66</td>
<td>16.59</td>
<td>23.84</td>
<td>42.46</td>
<td>63.05</td>
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<tr>
<td>Annual Growth Rate</td>
<td>Pakistan</td>
<td>2.45</td>
<td>3.66</td>
<td>3.05</td>
<td>2.61</td>
<td>2.05</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Urban</td>
<td>4.92</td>
<td>4.73</td>
<td>4.38</td>
<td>3.45</td>
<td>3.35</td>
<td></td>
</tr>
<tr>
<td>Population Density /Sq.km</td>
<td>Pakistan</td>
<td>42.5</td>
<td>54.0</td>
<td>82.0</td>
<td>105.8</td>
<td>164.0</td>
<td>218</td>
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<tr>
<td></td>
<td>Urban</td>
<td>60.47</td>
<td>71.74</td>
<td>43.70</td>
<td>78.10</td>
<td></td>
<td>48</td>
</tr>
<tr>
<td>Percentage Change overtime.</td>
<td>Pakistan</td>
<td>27.08</td>
<td>51.98</td>
<td>29.02</td>
<td>55.10</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Urban</td>
<td>60.47</td>
<td>71.74</td>
<td>43.70</td>
<td>78.10</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>Pace of urbanization Eldridge index</td>
<td>Pakistan</td>
<td>5.72</td>
<td>3.63</td>
<td>3.89</td>
<td>6.97</td>
<td>5.04</td>
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<tr>
<td></td>
<td>Urban</td>
<td>5.72</td>
<td>3.63</td>
<td>3.89</td>
<td>6.97</td>
<td>5.04</td>
<td></td>
</tr>
<tr>
<td>Percentage of Total:</td>
<td>Pakistan</td>
<td>17.8</td>
<td>22.5</td>
<td>25.4</td>
<td>28.3</td>
<td>32.5</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>Urban</td>
<td>17.8</td>
<td>22.5</td>
<td>25.4</td>
<td>28.3</td>
<td>32.5</td>
<td>36</td>
</tr>
<tr>
<td>Annual Growth Rate</td>
<td>Pakistan</td>
<td>3.69</td>
<td>4.27</td>
<td>2.87</td>
<td>3.46</td>
<td>2.83</td>
<td></td>
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<tr>
<td></td>
<td>Urban</td>
<td>3.69</td>
<td>4.27</td>
<td>2.87</td>
<td>3.46</td>
<td>2.83</td>
<td></td>
</tr>
<tr>
<td>Population Density /Sq.km</td>
<td>Lahore</td>
<td>640</td>
<td>918</td>
<td>1460</td>
<td>2001</td>
<td>3566</td>
<td>4983</td>
</tr>
<tr>
<td></td>
<td>Overall</td>
<td>44.25</td>
<td>58.90</td>
<td>36.68</td>
<td>78.53</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Percentage Change overtime.</td>
<td>Lahore</td>
<td>44.25</td>
<td>58.90</td>
<td>36.68</td>
<td>78.53</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Overall</td>
<td>44.25</td>
<td>58.90</td>
<td>36.68</td>
<td>78.53</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Population Size Millions</td>
<td>Lahore</td>
<td>0.86</td>
<td>1.32</td>
<td>2.20</td>
<td>2.99</td>
<td>5.21</td>
<td>7.72</td>
</tr>
<tr>
<td></td>
<td>Urban</td>
<td>0.86</td>
<td>1.32</td>
<td>2.20</td>
<td>2.99</td>
<td>5.21</td>
<td>7.72</td>
</tr>
<tr>
<td>Annual Growth Rate</td>
<td>Lahore</td>
<td>4.4</td>
<td>4.72</td>
<td>2.80</td>
<td>3.32</td>
<td>3.32</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Urban</td>
<td>4.4</td>
<td>4.72</td>
<td>2.80</td>
<td>3.32</td>
<td>3.32</td>
<td></td>
</tr>
<tr>
<td>Percentage Change overtime.</td>
<td>Lahore</td>
<td>53.49</td>
<td>66.67</td>
<td>35.91</td>
<td>74.25</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Urban</td>
<td>53.49</td>
<td>66.67</td>
<td>35.91</td>
<td>74.25</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>Pace of urbanization Eldridge index</td>
<td>Lahore</td>
<td>21.76</td>
<td>20.91</td>
<td>-4.53</td>
<td>-11.85</td>
<td>25.97</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Urban</td>
<td>21.76</td>
<td>20.91</td>
<td>-4.53</td>
<td>-11.85</td>
<td>25.97</td>
<td></td>
</tr>
<tr>
<td>Percentage of Total:</td>
<td>Lahore</td>
<td>75.73</td>
<td>81.01</td>
<td>84.98</td>
<td>84.3</td>
<td>82.44</td>
<td>87</td>
</tr>
<tr>
<td></td>
<td>Urban</td>
<td>75.73</td>
<td>81.01</td>
<td>84.98</td>
<td>84.3</td>
<td>82.44</td>
<td>87</td>
</tr>
</tbody>
</table>

**6- PACE OF HOUSE BUILDING**

A housing scheme is fully colonized when no vacant plot is available within the housing scheme to be allotted to any prospective house builder. District Lahore comprises the city of Lahore and its suburbs. River Ravi flows on the North and West side of the district across
which lies district Sheikhupura, Kasur on the south and Indian border on the East and North East.

The district is spread over an area of 1,772 km² comprising new towns namely 1) Nishtar Town, 2) Shalimar Town, 3) Aziz Bhatti Town, 4) Ravi Town, 5) Data Ganj Bakhsh Town, 6) Allama Iqbal Town, 7) Wagha Town, 8) Samanabad Town and Gulberg Town and the second biggest city of Pakistan and provincial capital of Punjab.

In 1966, Lahore Master Plan was prepared to control the unplanned growth of Lahore and in 1975 Lahore improvement trust (LIT) was converted into LDA. Major development started after the formation of LDA which is principal public body involved in supply of residential plots and look after the private housing schemes in Lahore. The Lahore cantonment Board, Housing and Physical Planning Department, Defense Housing Authority Cooperative housing societies have also been involved in housing and land development in the city (Anjum, 2007).

Data regarding the size of housing schemes and information about their inception date was obtained directly from LDA and DHA and further through field visit construction pace was calculated by observation, discussion with the house builders, residents, and real property agents involved in these schemes. Data obtained was analyzed and presented in table 4.

During 1970-2010, about 231 housing schemes were developed by private developers and cooperative societies on 9,288 hectares, DHA Lahore since 1973 developed 9,000 hectares of land in 9 phases, 55 sectors and LDA developed 14 regular schemes on 6,123 hectares. These schemes mostly expanded along North, South areas while DHA developed large Tracts of
land located in the South-Eastern part of the Lahore. The city has expanded along with three major highways, Grand Trunk Road, Ferozepur Road and Multan Road. Data presented in Table 4 indicates that 11, 90, 55 and 75 private cooperative housing schemes were developed during 1970-80, 1980-90, 1990-2000 and 2000-2010 respectively. House construction activities have been almost completed on the scheme established during seventies. The 15% schemes established during the eighties have still 50% vacant area respectively. On the whole during last four decades 50% area has been developed in the shape of houses in 49% schemes established in different times. The regular houses schemes developed by LDA during seventies i.e. Iqbal Town, Model town extension, Faisal town, Township and Green Town fully colonized at the extent of about 98% schemes developed during eighties i.e. Johar town (30% vacant), Subzasar (20% vacant) Tajpura (5% vacant) while schemes established during nineties and recent past decades almost vacant i.e. Jubilee town (99% vacant) Mohlanwal (99% vacant) in LDA Avenue still work in progress since 2003. DHA Phase-1, commenced and completed during 1978-1982 Phase II, 1981-1984 Phase III 1983-1988, Phase IV, 1986-1993, and is almost colonized at the extent of 98%. In Phase V and VI mushroom of houses at rapid speed is very visible. The development work in Phase VII, VIII, and IX is under progress. DHA Lahore reflects a modern segment of Pakistan where all residents are enjoying a high quality life with excellent facilities for education, health, business and security. Anjum (2007) observed that DHA strategy worked well in ensuring rapid colonization in 1st five phases of the housing scheme.

7- FACTORS AFFECTING THE HOUSE BUILDING IN LAHORE.

There is multiplicity of housing related issues in the country and especially in metropolitan cities like Lahore, Karachi and Islamabad, mainly generated by population explosion which grow from 84.254 million in 1981 to 130.580 million in 1998 census, the total number of housing unit throughout the country, was 19.3 million 67.7 % housing was in rural areas and 32.3 per cent in urban areas. The following factors are affecting the House Building in Lahore.

7.1 Availability of Transport and Security

Availability of transport to the job market is the most important factor in determining not only the value of land but also the house building pace in urban areas. Physical security comes first. Men should be able to leave their families and go to work without fear of them being harmed in their absence. Anjum, (2007) concluded that more closely a new housing scheme is located from the existing built up area, the more it will have the chance to be colonized rapidly. Since it gives the potential occupiers a sense of security, closeness to build up area also gives feeling of being part of the city rather than an isolated place and this adds to the attractiveness of the scheme.

Table 4: EXTENT OF COLONIZATION AND URBANIZATION IN LAHORE METROPOLITAN

<table>
<thead>
<tr>
<th>Year of Establishment</th>
<th>Range of % constructed area</th>
<th>Extent of colonization</th>
<th>Average area (Kanal)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No.of</td>
<td>% of</td>
</tr>
<tr>
<td>Schemes</td>
<td>schemes</td>
<td></td>
<td></td>
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<tr>
<td>---------</td>
<td>---------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1970-80</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-25</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25-50</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50-75</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Above 75</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1980-90</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>0-25</td>
<td>8</td>
<td></td>
<td></td>
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<tr>
<td>25-50</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50-75</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Above 75</td>
<td>57</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>90</td>
<td></td>
<td></td>
</tr>
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<td>1990-2000</td>
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<td></td>
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<tr>
<td>0-25</td>
<td>35</td>
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<td></td>
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<tr>
<td>25-50</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50-75</td>
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<td></td>
</tr>
<tr>
<td>Above 75</td>
<td>8</td>
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<td></td>
</tr>
<tr>
<td>Overall</td>
<td>55</td>
<td></td>
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<tr>
<td>Above 2000</td>
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<tr>
<td>0-25</td>
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<td>50-75</td>
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</tr>
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<td>Above 75</td>
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<td>Overall</td>
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<tr>
<td>Overall</td>
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<tr>
<td>Above 75</td>
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<tr>
<td>Overall</td>
<td>231</td>
<td></td>
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</tr>
</tbody>
</table>

Note: one Kanal is equal to 4500 sq.feet.

7.2 Availability of High Order Services and Facilities:
Piped water supplies, electricity, gas, sewerage, street lights, parks, schools, community centers are very important determinants of house building. These services have not only contributed to swift sale of plots but also rapid house building.

7.3 Prices of House and Land
In house building, profitability or rate of net return is not a single factor. There are many other motives which contribute to growth of houses. House building is generally done to fulfill ultimate desire of having a shelter ownership. This provides the inhabitants secure and safe guard environment to enjoy the blessing of settled life under available resource. The housing units which have been built and sold to the people have been beyond the reach of low income classes on account of the price of plot and the down payment demanded. If land is developed.
and given at a reasonable price to the people who will actually live there, they will manage to set up shelter suited to their own needs. Property prices have increased 3 to 4 times after 9/11 events, when remittances sent by overseas Pakistanis than direct beneficiary was the stocks and real Estate Business However, it was just the paper of plots and built up houses that changed hands new house building didn’t take place. These phenomena, which many believe was the result of rising inflow of remittances, more liquidity in the banking sector and lack of any other profitable and secure ventures for the holders of the black money in the country. Shortage of housing units is forced by the land mafias, and become impossible for the middle class families to even dream of a house in the big cities. Nationally, the average occupancy rate per dwelling is over sized and estimates unmet annual demand. For housing unit’s property bubble created a severe situation for real middle class buyers. The presently available housing or land stock has become extremely expensive during the recent past. For example, a plot measuring 5 marlas (1125 sq.ft) in LDA schemes in Lahore which had a price tag of Rs. 0.3 million in 2000, is now being sold at Rs. 2 million. Similarly constructed house supply is experiencing a meteoric rise. This situation occurred due to lack of capacity and capability in the planning and implementation agencies Mohan, (1982). A lot of town planning will also be required if the cities are not to grow haphazardly.  

7.4 Speculation

Generally, the element of speculation has been lowering down the construction activities even for the plots purchased on subsidized rate or gifted to the needy households. With the passage of time, this has become money generating practice and the professional speculators have become beneficiaries of this. Though such subsidized public schemes are developed and implemented to narrow the gap of supply and demand of housing sector, yet the speculators avail the benefits of such policy and each plot is sold on an average 3 to 4 times before the house construction is completed on it (Illis, 2007). In entire Lahore, 2,584 person who had no shelter as reported in 1998 census while the number of persons per housing units has increased from 6.9 in 1980 to 7.1 in 1998. Housing availability in Lahore increased from 0.45 million in 1981 to 1.07 million in 2011 at a rate slower than population growth (from 2.99 million to 9.052 million over the same period ) implying thereby that house have been congested with time of slow tempo of construction and high growth rate of population. Most of the plots in these schemes are those in which house has not been constructed. About 75 per cent vacant plots are in the hands of professional speculators. They have invested their money because no cost/tax involved in keeping a vacant plot. By laws are very flexible and owners of vacant plots have no fear of cancellation plots. They have alternate residences like Government and family etc. About 10 per cent plots are in the custody of those who are really needy but due high cost of construction material they are unable to build their house. Financial institutions provide loan on a very high rate of interest and obtaining loan from these institutions is another serious problem. About 10 per cent plots are in the hands of those who earned black money and keeping vacant plots are best safe use of such money. Investment in trade/industry is very risky 5 per cent kept vacant plots because they think, this investment is better safeguard against inflation.
7.5 Nuclear Family:
In Pakistan, expansion of nuclear families is on the rise percentage of population below. Poverty line stands anywhere between 25 and 30 per cent. For housing pertinent to low and however middle income group land is a key asset that ascertains gradual development and improvement in housing conditions. Over the period of time status of land has changed. It used to be a social asset which was provided to the needy through state support. Now it has become a commodity which is openly traded in the market and attributing towards complexity in construction activities.

7.6 Socio Economic Factors
An estimated 0.065 million persons arrives every year in Lahore. They usually stay with friends or relatives until they find a job after they call of their families and live in rented shelters in cheaper areas. These constitute irregular employees, skilled laborers, the industrial proletarian and lower level white caller’s workers. Their financial conditions do not permit them to think about house building in Lahore Siddiqi (2004).

7.7 Small Businessmen and the Traders
For this group, ideal place for them is to function where competition is not too stiff. The manufacturer and whole sellers usually move to places that are becoming submarkets and are in the process of consolidating themselves provided that they are easily accessible from other industrial and communication terminals. They are able to find cheaper premises and labor for their work in these settlements.

8- ACTION ORIENTED POLICY RECOMMENDATIONS
This section outlines below a general framework for undertaking urban land policy reforms, however, it is not claimed what constitutes an optimal urban land policy and only offered what can be considered as a preliminary set of guidelines for carrying out urban land policy. In the light of above diagnostic analysis following recommendations for improvement of house building development are given.

1- Compliance to building bylaws regarding fixed period by the LDA and/or other concerned agencies
2- Plot once allotted may be canceled after the termination of construction period and it should be auctioned in the open market and income earned through this exercise may be fixed as for revolving loan fund for house construction in the same scheme on a very low rate of interest.
3- Adoption of built lease and transfer (BLT) policy by House Building Finance Corporation
4- Create a database of needy and non owners Along with keeping in view their monthly income and status in order to provide them with an installment at very low interest rate
5- Facilitate loans for purchasing plots from the financial institutions and rate of interest may be fixed keeping in view the appreciation in the property.
6- Critical public facilities such as parks, open spaces and urban services, which the private sector cannot profitably produce and sell, are impossible to provide without
government intervention. Thus the solution to ineffective urban land policies is not to do away with government interventions and policy initiatives. Housing projects/schemes are not designed keeping in view the needs of those interested in purchasing housing units and plots. A review of integrated Master plan for Lahore (IMPL) by World Bank revealed that, it does not have a strong strategic orientation or clearly vision for the future development of the city based on a consensus among the stakeholders, Land subdivision regulation could exacerbate the slow pace of construction in Lahore. Land supply for housing requires a targeted approach to reach out to the beneficiaries. It is important to make sure that subsidies for land, water supply and other services are carefully targeted to those who are really in need of them. Land must be recognized as being valuable in its natural state and not simply be seen as raw material for urbanization according to this study the 15% schemes established during eighties has still 50% vacant residential area respectively. On the whole during last four decades 50% residential area has been developed in the shape of houses in 49% schemes established in different times. If these plots were fully occupied at their planned densities they could accommodate 21 per cent of the added urban population the track record of development authorities to develop residential projects is poor and much of their land is vacant in Lahore 30% of land is owned by government if it were placed on the market, could provide opportunities for residential, commercial and industrial development.

7- Studies undertaken in 10 cities throughout Pakistan including Lahore suggested that households should pay a premium to obtain land located in planned areas ranging between 2.1 and 3.5 times the value of land in unplanned area because services are available and title to land is more certain. This amount is used as a revolving fund for shelter project. Both the LDA and the Punjab Development of cities Act, 1976 permit development authorities to mobilize funds through issuance bonds or borrowing from various types of lenders. Management of urban land is growing concern of development specialist. Beneficiaries of various Public housing schemes have received financial benefit from those schemes which are 6 times greater than they paid to the authorities who developed those schemes Dowall (1996). Property taxes recover only a fraction of their potential, capital gains taxes have been not received and vacant developed land is not taxed at all despite the gains made by the allottees and speculators of public housing schemes when they received plots. To discourage the speculators to keep vacant for long time and encouraged a construction activities, a clear policy of recouping some of value accruing to the beneficiaries of publicly developed housing schemes need to be articulated which would incorporate reforms of property taxes, possible re-introduction of capital gains taxes, usage of betterment taxes and recovery of profits through direct participation in schemes. The intent of this taxation policy will mobilize resources stabilize land markets and reduce extent of arable land conversion Ellis (2007).
9- CONCLUSION

The purpose of this paper is to discuss the nature of problems associated with urban land issues and explore various strategies and instruments available to urban land managers for achieving specific objectives of housing schemes developed for house construction. It has been determined that during last 40 years 11,4630 ha of arable land was converted for urban use out of which 18 percent converted land is under 252 housing schemes. It has also been examined that in 49% schemes 50% plots are those on which house have not been constructed and 75% of these plots are in the hands of professional speculators, those raised the cost of plots and house building reached beyond the low middle income group. Effective land use policies, building by laws and standards that addressed backlogs of houses in Lahore have not adequately enforced. In efficient tax policies are significant factors encouraging speculators to keep plot vacant unproductively at no cost consequently development authorities have insufficient resources to finance urban services and for accelerating house building activities for the city which is growing at unprecedented rate in which housing availability increased slower than population growth since last many decades. To discourage the speculators to keep vacant residential plot for long time and encourage a construction activities, a clear policy of recouping some of value accruing to the beneficiaries of publicly developed housing schemes need to be articulated which would incorporate reforms of property taxes, possible re-introduction of capital gains taxes, usage of betterment taxes and recovery of profits through direct participation in schemes. The intent of this taxation policy will mobilize resources, stabilize land markets and reduce extent of arable land conversion.

REFERENCES
