COST OF CONSTRUCTION: HOW GLOBALIZATION IMPACTS ON VERNACULAR HOUSES

Mehdi Ghafour1, Tareef Hayat Khan1,2 and Abdullah Sani bin Ahmad1

1Department of Architecture, Faculty of Built Environment, Universiti Teknologi Malaysia

2Pusat Kajian Alam Bina Melayu, (KALAM), Institute for Smart Infrastructure and Innovative Construction (ISIIC), Universiti Teknologi Malaysia, Johor, Malaysia

E-Mail: tareef@utm.my

ABSTRACT

Historically people in vernacular area did not have to pay to become a householder or a landowner, or even to buy materials. But that is not the case in modern era any more. Besides the fact that one has to buy land or house, modern materials and technology, spread out by the flow of globalization, has also been associated with increasing cost. In this study on vernacular houses in Northern Iran, traditional (Kali, Lar deh ee, and Mud Houses) and modern (load bearing brick wall structure, concrete structure and steel structure) construction technologies have been investigated with regards to their cost. Residents, experts and contractors were interviewed to collect the data. Findings showed that the perception of cost is a skewed one, and decision to choose a new material or technical over san old one needs to be rational.

Keywords: vernacular architecture, northern Iran, cost, globalization, modern architecture, materials, construction.

1. INTRODUCTION

Vernacular architecture as its nature has many beneficial experiences which has been gained through centuries of trial and error process [1-3]. People used indigenous knowledge [4] to meet their needs for shelter as well as to meet their lifestyle [5]. Traditional methods of housing construction are usually practiced for a prolonged time, but a few issues have changed that scenario in recent days. New material and technologies inflicting changes in vernacular context is not a new phenomenon, but the way they are changing the scenario in recent times is quite unheralded [6, 7].

2. BACKGROUND

Generally, sustainable development is based on three pillars: social, environmental and economic [8]. Besides satisfying one of the basic human needs i.e. shelter, housing also plays a key role in building community [9]; and therefore is a contributes to social sustainability. Housing also contributes to the majority of the built environment, and therefore, its role to environmental sustainability is also crucial. However, focusing on the last pillar, with lenses of economic sustainability, houses are among the major investments of individuals during their lifetime [10]. Indeed, 10% of the global gross domestic products are related to the housing sector, and 7% of global jobs are related to this sector [11].

Traditionally in the villages, people used to build their houses themselves with natural sources available in the context. There was no direct payment involved in order to build a house. In the urban areas, it was different, with many stakeholders involved, and professional distributing the workload. However, things are changing in the vernacular context. The demand for new houses in one hand, and the force of advertisements in the other hand started to influence vernacular people to replace old houses more often, and to construct new ones with modern materials [12, 13], often unrelated to the context. Industrial revolution provided more options for newer technology and materials to in the construction sector with sounds of development and advancement. On the other side of the coin, people now need to pay higher for these new materials, and also need to hire professionals to apply the technologies [14]. This study tried to address two research questions. First, are the new technologies bringing financial advantages than the old ones in the vernacular context? Second, what is the trade-off for accepting the newer ones if they are more costly? In this paper, the vernacular area of Northern Iran was chosen as the context.

3. CONTEXT OF STUDY

The context of this study was villages in the northern Iran, under the provinces of Gilan and Mazandaran (Figure-1). The areas are between Caspian Sea and Alborz mountains, with humid and mild climate, rice fields, forest and mountain; abundance of wood; farmer and rancher people as inhabitants.

Different types of houses exist in the vernacular area of the particular context. Three house types, namely, Kali, Lar deh ee and Mud house were categorized as ‘old’
types, while another three types, namely load bearing brick wall structure, concrete structure, and steel structure were categorized as ‘new’ types (Figure-2).

Table-1 briefly describes the characteristics of five basic elements of each type of vernacular houses in the context.

**Table-1.** Brief details of different types of construction materials and technologies used in different types of houses (source: authors)

<table>
<thead>
<tr>
<th>Types</th>
<th>Elements</th>
<th>Foundation</th>
<th>Floor</th>
<th>Wall</th>
<th>Roof</th>
<th>Attachment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kali</td>
<td>4 wooden pads</td>
<td>Wooden trunks and a mesh of woods which makes the floor</td>
<td>Wooden trunks as the horizontal elements make the wall</td>
<td>Two-pitch tin covered gable roof with raw wooden structure underneath</td>
<td>Door and windows</td>
<td>Outdoor WC and bath</td>
</tr>
<tr>
<td>Lar deh ee</td>
<td>Sandy short thick wall</td>
<td>Filled by hardcore stone and finishing by compacted mud</td>
<td>Mesh of cut wood filled by mud</td>
<td>Four-pitch tin covered gable roof with cut wood structure underneath</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mud Houses</td>
<td>Short thick wall constructed with sand and mortar of mud</td>
<td>Thick mud wall</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Load bearing wall Structure</td>
<td>Reinforced strip foundation</td>
<td>Filled by hardcore stone and finishing by compacted mud</td>
<td>Load bearing (35 cm thick) brick wall confined with reinforced concrete</td>
<td>Galvanized four-pitch gable roof with the steel profile underneath the structure</td>
<td>Prefabricated doors and windows</td>
<td>Indoor WC and bath</td>
</tr>
<tr>
<td>Concrete structure</td>
<td>Reinforced concrete footing foundation</td>
<td></td>
<td>Reinforced concrete column and (20 cm thick) brick wall with cement mortar</td>
<td>Waffle roof insulated by insulation</td>
<td></td>
<td>Modern sanitary</td>
</tr>
<tr>
<td>Steel structure</td>
<td></td>
<td></td>
<td>Steel column and (20 cm thick) brick wall with cement mortar</td>
<td>Galvanized four pitch gable roof with steel profile structure underneath</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. **COST OF CONSTRUCTION**

In analysing the cost of the building, several items are needed to be counted. Expenditure on materials, manpower, and machine are the major parts of construction cost. Materials must be bought, men must be paid, and machine must be rented or bought. Total money spent in the process can be counted as the construction cost.
Traditionally, the villagers built vernacular houses with their own hands and with indigenous skills. They used locally available materials; the family members and neighbours collaborated; and there was no need for any machine. So presumably, it would not cost much. Modern construction materials started to be used in the vernacular area as the result of development of technologies in the city area, as industries started to grow around. For example, flattened tin cover that is made from recycled oil containers, started to replace the straw and wooden sheets as roof coverings. At the same time industrial nails had been released in the markets. That was the starting point when people in the village had to start paying for the construction materials. Even though they did not have to pay for any machine immediately, construction of roof needed skilled men. Ever since the industrial brick entered the region, cost of the materials and labor had also increased. Recently, concrete structure and steel structure entered the vernacular area which requires exclusive materials, specific machines and professional labor. Thus, compared to the past, cost of construction is getting more, and cost calculation is getting more complicated.

4.1 Cost measurement

In a research [16], the author decomposed the cost of construction into final input corresponding to the activity and wage rate of different labor class.

\[ \text{cost} = \sum_{i} \sum_{j} c_i a_{ij} x_j + \sum_{q} \sum_{j} w_q d_{qj} x_j \]

Here, \( c_i \) is the cost coefficient of the \( i_{th} \) final input corresponding to the \( i_{th} \) activity; \( w_q \) is the wage rate corresponding to the \( q_{th} \) class of labor. The requirement of the \( i_{th} \) final input to produce unit output of \( j_{th} \) activity is given by element \( a_{ij} \). \( x \) is the level of production activity, defined later more explicitly, indicating the technical alternatives of production.

There are two approaches by which the cost of construction can be estimated. One is the calculation of construction elements in layers. Traditionally, it was been done by the engineers who calculate all the elements of the building in numbers, areas volumes and then multiple it into the unit price in the market and finally determine the whole price of the material. Concurrently, the wages had to be taken to account too. This method nowadays can be done by using software, which accelerates the process of calculation.

Another approach is the standard price that is given by contractors as the whole specification set [17].

Finally it must not be forgotten that the cost of building actually consists not only the cost of construction, but also the cost during usage [18]. Houses not only deteriorate during usage, but inhabitants also inflict renovations and alterations [19, 20]. It would be a waste of money to build a very light and unstandardized cheap building, if it needs high cost of maintenance, high cost of heating, cooling and so on, during the whole lifespan of the building. Indeed, studies clearly indicate that the cost of construction not necessarily has to be barest minimum if the material have lower embodied energy [21]. In addition, materials or technics that needs high cost for repairing and maintenance jobs during renovation or transformation are also expensive in the long run.

4.2 Factors affecting cost of construction

A more sophisticated research reveals that cost of construction can depend on many factors as the variety of the issues related with building construction are getting more complicated. During the first step, the factors that can influence the cost of construction are priority of clients, identity and nature of the project, responsible personnel of the development, choice of procurement options, prevailing markets and legislative constraints [18].

Another significant factor is the design. Factors that are responsible to have impact on the design can consequently affect construction cost. They are, for example, plan shape, size of building, wall to floor ratio, degree of circulation space, story height, total height of building and grouping of building [18, 22-27].

There are factors such as choice of material, attitude towards sustainability, the nature of the site, location (value of land), physical site condition, availability of services, resource availability, climate, the method of procurement, which also have important influences on the construction cost [18].

Moreover and from the other perspective, the national or international financial problems may increase or decrease the cost of construction e.g. inflation, exchange rates etc. [28].

In vernacular areas, many of above factors should not, or even could not be considered, because the society is small. Although there are many factors affecting cost of construction that prevail there, but due to the smaller scale, cost of construction is limited to only material expenditure and wages.

4.3 Story of being householder

In the vernacular context, the story of construction starts from the basic need for shelter. Traditionally when households need to have an individual house, it is most likely that they will get the land from parents, family, or ancestors. Then the household decides the housing characteristics, such as area, type, number of story etc. Usually the ideas come from within family or the neighbours before it is finalized. Related people collaborate in the construction process.

 Nowadays, the story is almost the same, but the processes are different. Density has increased, and new people entered by buying land from owners who need to sell them for money. There is also a choice to make from either traditional or modern types of construction. Then the decision has to be made whether the construction should be managed by themselves or there is a need to employ professionals. Moreover, if households decide to apply for financial loan from banks, they must employ architects and engineers to prepare the drawing and to
supervise the construction process. Then they need to get the permission from the related government organizations, which are usually offered to the new construction systems, not to the traditional systems. Otherwise, if they do not need to apply for loan, they have the option whether to employ architect and engineers or not to employ.

The householders have to pay for materials, workers’ wages and engineers’ salary, if any, directly or through third party known as the contractor. Contractors can be employed for part of construction, separately, or for the whole construction.

During the construction, some elements are necessarily to be done exactly under the engineering constraints, such as foundation, floor, wall, and roof; but others, such as attachments could be chosen from a variety of forms, brands, quality and taste of householders.

5. METHODOLOGY

Cost is one of the strongest indicators of measuring building performance regarding material and construction technique [29], and was the subject matter of this study. The objectives were firstly to search the probable increase or decrease in the cost of the house as users are changing from old to new typologies; and secondly, how they are responding to those changes. There were two sets of samples. The first set included users of different types of houses, and the second set included local experts. For the first set, all six types of houses were represented fairly evenly, but the houses were randomly selected. A questionnaire survey was conducted that included both structured questions, and unstructured interview. The questions were arranged in five parts based on each of the five elements of construction that were found to be related to the context. These were foundation, floor, wall, roof, and attachment [30].

In each part, the first question was related to the cost of construction of the individual houses. The second question inquired about the cost of the particular typology. Concurrently, during the unstructured interview, differences between the cost of their own house type, and of the other types were asked. Coding was done before immersing into them in search for themes. Descriptive, Process, Holistic, and Hypothesis coding were used in first cycle of coding, and embedded themes derived from patterns of second cycle coding, a method referred to relevant researchers [31].

For the second set of sample, the local experts were asked to rank the types of construction against the criteria of cost. The ‘average’ from their answers represented the priority of each construction type under the criteria of cost. This was later used to validate the responses of the residents. The sample included architects as well as the ones who are familiar with the vernacular and modern architecture in the context.

6. DATA COLLECTION AND RESULTS

Data has been collected in various ways. As the first step, users’ opinion about the cost of their houses was the main target. They have been asked about the money they spent for every element of the house, and about the average normal cost of the construction of their house type.

Average price of each element of every construction had been calculated. However, before that, it was converted to current rate in order to tackle the issue of inflation. Moreover, to be comparable, the price was displayed in a unit scale. All the prices were then divided by the area of house to show the price of one square meter of the construction (Figure-3). In order to make it comparable, the average cost of each construction type had been calculated and shown in Figure-4. The ranking by the local experts of the cost of each type of houses were calculated to average, and showed in Figure-5.

In addition, cost estimation was also procured through local contractors who have the experiences of constructing in the region. They know all the price of materials, delivery cost and wages; and their data showed the cost as a whole (Table-3).

Besides the actual cost of each element, all the respondents were also asked about any special cases that affected the costing. It could give more knowledge on various obstacles that affects cost.
7.2 Descriptive Analysis

7.2.1 Kali houses

Kali houses in this region, which is mostly known in other countries as log houses, are the oldest type of house. They were usually built when no current technology and material existed. The basic material was the trunk of trees, which could be easily found, and was collected from the local forest. The people did not have to pay either for the materials or for the wages of the workers. The only expenditure was for the materials for roof or for the attachments, which might have been improved later on. Therefore, the users suggested it was the cheapest among old methods (Figure-4). However, in contrast, experts opined that constructing a Kali house was relatively the most expensive among the old tyes (Figure-4). That is because to construct a Kali house, a considerable bulk of trunks was needed, which could be considered very expensive in relation to recent days (Table-3).

7.2.2 Lar deh ee houses

The users considered the cost of Lar deh ee houses higher than Kali (Figure-4). But, experts considered it lower (Figure-5). Contractors ranked the cost of Lar deh ee types as the second lowest price (Table-3). Figure-3 showed that the cost of attachment is significantly higher than other elements. Referring to the above data, we see that the age of attachments is considerably less than other elements. Moreover, the newer the houses, the costlier the attachments.

7.2.3 Mud houses

Mud houses had the lowest cost from the view of both experts and the contractors (Figure-5 and Table-3). Users also ranked it low, just a little more expensive than the Kali houses (Figure-4). Among the elements, attachments had the most portion of the cost of constructions usual (Figure-3).

7.2.4 Load bearing wall structure houses

This system is known as one of the cheapest new technology (Figure-4 and Figure-5). Distribution of the elements’ cost in the building is pretty much equal (Figure-3). The emergence of this system into the countryside merges between the past and the present. Indeed, the load bearing walls were the first signs of new and modern technology. Contractors had mentioned that the price of this construction is roughly the same as Lar deh ee houses (Table-3).

7.2.5 Concrete structure houses

The second most expensive method was concrete structure construction system from the users’, experts’, and contractors’ perspective (Figure-4, Figure-5, and Table-3). The main part of cost was attributed to the roof, which usually is a waffle slab construction (Figure-3). The cost of materials and the cost to deliver the materials to the village make it more expensive than the other roof types. Moreover, all structures, such as foundation, columns and beams must be strong enough to bear the highly weight of the roof. That also adds to the cost.

7.2.6 Steel structure houses

Figure-4, Figure-5 and Table-3 ascertains that construction cost of steel structure has the same ranking from users’, experts’, and contractors’ evaluation as the most expensive construction methods among all systems. In this system, foundation and floor have the major portion of the cost of construction (Figure-3).

8. QUALITATIVE ANALYSIS OF COST

To get the perception of cost was not a straightforward calculation from market rates. It is more a perception. That was evident from the responses from the users, whose responses seemed to be biased by personal ideas. Therefore, a more in depth data was searched through open-ended questions to users, as well as to experts. The questionnaire used for the quantitative analysis also contained a section for open-ended question, while informal interviews were conducted with the experts in order to get their insight.

8.1 Open ended questions to households

Responses to the open-ended questions were logged through key words. These key words were converted to anecdotes. From anecdotes, coding was done. The coding consisted of common words used to describe cost related issues for vernacular houses. In Table-2 rows show the different house types. First group of columns shows codes for every construction elements that were logged from residents’ responses in questionnaire they
described about cost of their house particular types. In the next column, a brief discussion about the first cycle codes were drawn, and then the second cycle codes were displayed in the last column.

### Table-2. First and second cycle coding yielded from interview

<table>
<thead>
<tr>
<th>Types</th>
<th>First cycle coding</th>
<th>Discussion</th>
<th>Second cycle coding</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Kali</strong></td>
<td>Local material</td>
<td>Two most important factors affecting the cost of buildings are material and wages which in traditional construction been ignored with local material and self-constructing.</td>
<td>Local material Self-construction</td>
</tr>
<tr>
<td></td>
<td>Self-construction</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Lar deh ee</strong></td>
<td>Local material</td>
<td>Advanced technologies prepared the way to use processed instead of raw material such as timbers which used instead of logs. Processed material both decreases the use of raw material and also optimises functionality.</td>
<td>Local material Self-construction</td>
</tr>
<tr>
<td></td>
<td>Self-construction</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Processed material</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Mud Houses</strong></td>
<td>Local material</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Self-construction</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>New material</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Load bearing brick wall</strong></td>
<td>New material</td>
<td>People could save the worker’s wages by attending as the workers in construction assisting the mason or roof builder.</td>
<td>Semi-attendance in construction</td>
</tr>
<tr>
<td><strong>Concrete structure</strong></td>
<td>New material</td>
<td>The cost is out of people's hands and they cannot have a control on it.</td>
<td>Uncontrolled</td>
</tr>
<tr>
<td><strong>Steel structure</strong></td>
<td>New technology</td>
<td>All costs are out of their control except in some parts of the process decreasing the workers wage by attending as construction workers.</td>
<td>Uncontrolled</td>
</tr>
</tbody>
</table>

### Table-3. Cost estimation of each construction type by contractors

<table>
<thead>
<tr>
<th>Construction types</th>
<th>Kali</th>
<th>Lar deh ee</th>
<th>Muddy</th>
<th>Load bearing brick wall</th>
<th>Concrete structure</th>
<th>Steel structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price per square meter (IRR)</td>
<td>+20,000</td>
<td>5,000-8,000</td>
<td>-5,000</td>
<td>5,000-8,000</td>
<td>8,000-10,000</td>
<td>9,000-11,000</td>
</tr>
</tbody>
</table>

### 8.2 Interview with experts

Deep semi structured interview has been conducted and the focus was about material usage, builders, amount of householder attendance and their role. These focal points were taken from second cycle codes of open ended questions. Through content analysis, and by immersing into the vignettes, certain themes were constructed which were discussed in the next section.

### 9. DISCUSSION AND FINDINGS

The quantitative analysis hinted answers to the research questions, and qualitative analysis reinforced them. It was obvious that the new construction materials and technologies cost more. Interestingly, it was found that there are more factors other than plain manufacturing cost that are responsible for that. Even more interesting was to find how users rate the old methods as cheap, which they are actually not. And there were some concerns about their attitude towards selecting new ones. All these are elaborated below.

### 9.1 Availability and transportation cost is the key

What globalisation offered to Cost is that, new material that is produced far from these villages can now be easily delivered to the site. However, globalisation plays two roles. Firstly, international products are being sold in all distinct parts of the world, and secondly, there is the development of transportation that accelerates the distribution of these materials. While availability could reduce the price, higher transportation can increase the price significantly. One of the reasons of higher cost of new material and technologies right now from the users' point of view in this region is undoubtedly transportation. Traditionally available materials did not need any expenses for transportation, while new materials must be delivered to the site from somewhere far from the site. Unfortunately there are some new materials available in nearby shops, but because people now have access to more information, they might sometimes prefer to use a particular material that needs to be delivered from far. These deliveries impose higher cost of construction. Increase in availability or reduction in transportation cost might someday bring down the cost of new materials and technology, but nowadays, people might adapt themselves with the situation. Accepting the new technologies and materials need adaptation of paying more. If the income increases significantly, then this can be logical. But in
most cases income level did not drastically change, therefore it puts a question mark on such adaptability.

9.2 ‘Old technologies are cheaper’ is a skewed perception

Comparing the results from quantitative analysis, we found a significant difference between cost of old and new construction types, if we consider buying them from market at the time of the event. All old houses were constructed very cheap, and without any considerable expenditure. On the other hand, new houses with modern technologies and material cost very high. There can be several significant reasons. For example, traditionally, they did not pay for construction in general. They used locally available material and collaboration of other people as workers. So, they actually did not have to ‘buy’ the materials from the market. The size of houses was also smaller than new construction, and therefore, they could afford them with less cost.

Their expenditure for the old houses was limited to the only roofing and attachments. Nevertheless, for the new houses, concrete, steel or brick are not available free, and they must pay for the material. Moreover, there is additional cost for workers or engineers, as these construction needs skilled professional. Therefore, the expenses increased manifold. Quoting from one particular household,

“Whenever we needed a house, we went to the forest a couple of weeks before, and cut the trees, brought them to the courtyard, and let them dry. But nowadays it is forbidden to cut the trees.”

It is not only that local materials are not available any more, but also the overall concern about protecting the earth has increased. Therefore, even if someone wants to use local materials, it is not free any more. Therefore, though the households from the old typologies still perceive the older houses were cheaper, in fact, that perception is skewed as the materials cost was not within their calculation. This story is an evidence that nowadays it is not possible to construct even the traditional house with the same price of past. They are not allowed to cut the trees to make wood, but they must instead buy the wood from the market that is very expensive, even more than that of brick. Therefore, when one builds a brick house instead of Kali, it does not come as a surprise.

In addition, wages are not free these days either. People may had times to collaborate in the others construction process in the past, but these days they do not have that [32]. They are too busy with modern tight scheduled lives, and there is no time to allocate in order to help others in construction even for a short time. Quoting from another respondent:

“Nowadays people do not stay in the village at daytimes. Free people to collaborate you in construction rarely to be found.”

However, there are still some realistic reasons. Generally, new construction workers must be more professional than past ones. Secondly, the sizes of new construction are generally bigger, and needs more time than that of the past ones. It means the numbers of people and the time of collaboration is too much to ask free collaboration from neighbouring people. If the older days also required such professional involvement, it could have been much more expensive than one can perceive. Thus it could be concluded that the people should adapt themselves with the new condition and new calculation about cost of old houses. In this regards globalisation would help them in adaptability.

9.3 Consumerism always plays a role in cost

However, only that may not be the biggest issue to bring down the cost. Demands were less in old days. Houses usually consisted of small rooms, detached kitchen, outdoor bath and washroom and without separate guest room and bedroom, which nowadays seem to be necessary in the house. This is a shifting from satisfying ‘needs’ to satisfying ‘wants’. One respondent said:

“…. How can you accommodate new furniture in traditional houses? Who can live without them today? … People find a way to afford to have new construction materials and technology even with selling their pieces of agricultural land…”

Looking at the traditional houses, there were no large furniture like sofa, TV set, grand refrigerator etc. The rooms were full of small necessary things and multifunction. Activity of talking each other, eating, sitting and even sleeping occurred in the same place. However, lifestyle has changed. Of course, consumerism plays a role, but we cannot defy the flow of scientific inventions, which made our lives easier. New lifestyle needs more equipment, more diversified needs for spaces. New houses therefore contain plenty of rooms or specific spaces for various activities with their related furniture, which are not that small and more sophisticated.

Moreover, knowledge also makes people more concerned. Promotion in hygienic forces lead people not to choose traditional style of houses, where detached kitchen, bath and washroom were not equipped with hygienic material that increase the risk of bacteria and related diseases.

Last but not the least, consumerism is further aggravated with the consequence of globalization. Globalization through media changes the acceptance of the people about necessary parts and parcels of life. As Western lifestyle is more dominant in this particular era we are living in, their media can inflate local people’s dream towards that somewhat non-contextual unrealistic standard, and people, as tempted as they are by instinct, are likely to chase them without considering the cost unless some local entrepreneurs attempt to successfully educate them down.

9.4 Attachments have the power to outweigh other elements as far as cost is concerned

Referring to the data, another interesting finding was that the cost of construction from the contractors’ perspective showed that Lar deh ee could cost the same as the load bearing brick wall houses. Even though the issue of wages and building material cost is momentarily overlooked, one can expect Lar deh ee to be much
cheaper. But, common trend to use expensive attachments brought these two types to equivalent cost as this particular element outweighs the other elements significantly. The vast range of attachments with various brands and prices can play a role here, and it is added with the fact that the cost of attachments also increased steadily through time.

Indeed, among the elements of the houses, attachments are considered as most expensive elements. They are also likely to be replaced several times by more expensive and modern ones. The other elements such as foundation, columns etc. cannot be updated or replaced. Therefore, the households may not be able to replace them. The only element that could be replaced was the attachments, which eventually provided them with the opportunity to improve their social status, or signs of luxury and wealth. The household that has constructed a house with old type could not readily replace the whole house, but the desire to show improved status is always on the card. Attachments gave them that opportunity.

10. CONCLUSIONS

The question is where to put a stop when cost is concerned. Let us quote one more respondent and try to find out:

“...Having a new house, however be fashioned these days, but is very expensive. There are people who started new construction with new technology and material but in the middle, their budget expired and they left the construction unfinished for months, even years. They express deep regret for selecting this type of construction, but at that time they could not resist the temptation...”

Building a house for the family is every human’s basic need, and eventually becomes a dream. However, if dream becomes powerful and begins to follow desire, not only the need, then it blurs the actual need through illusion, and man starts to make mistakes and wrong decision. Cost of construction is one of the strongest factors of housing, and logically, the cheapest the cost, the best is that option. People in the vernacular area of Northern Iran throughout history, built their houses traditionally with minimum expenditure. It is so true to any vernacular area in the world. Unlike their urban counterparts, they respond to newer interventions a bit later. Some can spot that as lack of knowledge, some can label them as less smart or less updated, but that eventually helps them to keep their desires in control, and dreams realistic and close to actual needs. However, when modern revolutionary methods of communication of present days penetrates their world without being rationally controlled, their ‘desires’ win over ‘needs’, and the people can easily fall prey to temptations from which no ordinary human are immune. It is not to say that all of such modern elements have the same impact, not even to say that all new inventions should be obstructed. Eventually there is the strong possibility for them to choose newer technologies even it might cost more, somewhat irrationally, considering their upgraded lifestyle and affordability. One can blame the power of stronger forces such as globalization that create that inflated mirage; others can blame local people’s ignorance. Even though the results could be fatal for the locals, this tendency is usual for humans. It is only the counter plan by local prudence that can intervene this trend and educate locals to filter down the choices rationally while giving proper respect to indigenous knowledge and technology that needs to be remembered in order to keep the continuity of local knowledge and maintain one’s self esteem and identity. It is so important to every human being, both individually, and as groups. In fact, knowledge in the mix of new and old can always open a new window, and construction in the vernacular area is no exception, but its acceptance must be rational. The phenomenon of cost was just used in this article as a vehicle to deliver this awareness.

ACKNOWLEDGEMENT

Research Management Center (RMC) of Universiti Teknologi Malaysia (UTM), and the Ministry of Education (MOE) of the Government of Malaysia are acknowledged for the funding of the research through grant numbers Q.J130000.2421.03G20, R.J130000.7909.4S104, and Q.J130000.2521.12H71.

REFERENCES


