



Transaction Cost Economics Identification in Malaysian Housing Development: A Preliminary Review

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Abstract: Shelter, albeit being one of the crucial physiological needs in Maslow's Hierarchy of Needs, is still considered as luxury needs as many people still struggle to afford a house especially in Malaysia. The issue stemmed from the mismatch between the affordability level and the housing prices. Many research delved from the demand and supply perspective to find the root cause, however, the problem still prevails. Hence, this research aimed to study the aforementioned issue from the transaction cost economics (TCE)'s perspective. TCE provides a platform to allow parties to deduce the invisible costs from transaction of activities. This can be done by determining the effectiveness of each transaction profile by enhancing the value between the two transactions, hence, lower the costs. This paper outlined a preliminary finding on TCE's identification in typical housing development process based on RIBA Plan of Work 2013 process protocol. RIBA Plan of Work 2013 was chosen to provide a standard platform of measurement to ensure consistency in activities listed in the pre-contract and post-contract in typical housing development process. Interviews were conducted with purposive sampling with individuals working directly with housing development. The respondents were asked to verify the list of pre-determined TCEs by indicating whether those activities constitute under the TCEs components and whether activities identified as redundant or inefficient can be removed or enhanced. Analysis conducted using the frequency analysis managed to determine the most important and also the most redundant transaction cost components in a typical housing development. The findings revealed an interesting fact where the number of transaction cost components at both pre and post-contract were higher than the anticipated number attained from literature review. Higher number of identified transaction cost components indicates higher transaction cost in housing development. This further suggested that certain activities which were found redundant or inefficient can be either removed or enhanced to lower the transaction costs. The research findings provide a useful platform to further verify the TCE in housing development. The components will be quantified to ultimately develop a framework for a best practice transaction cost economics model to apprehend unaffordable housing issues. Hence, it is noteworthy that combining TCE and Lean Management theory will enhance this on-going research on identification and quantification of the transaction costs within the housing development to address matters that cause high transaction costs that subsequently increases the housing prices.

Keywords: Transaction Cost Economics (TCE), housing development, unaffordable housing

1. Introduction

The famous Maslow's Hierarchy of needs indicates the basic human physiological needs such as food, air, water and shelter (Maslow, 1943). Hence, having a place to live is one of the fundamentals of human beings. Albeit of its importance from both human and country's performance measurement, many people struggle to afford a house (Omsmadi et.al, 2017; Baqutaya et al., 2016; Samad et.al, 2016). This scenario derived mostly from the mismatch between the affordability level and the house prices, especially in Malaysia (Omsmadi et.al, 2017; Baqutaya et al., 2016; Samad et.al, 2016; Suhaida et al., 2011). The statement is further supported by report on Residential Transaction

Data by the National Property Information Centre (NAPIC), for the first half 2020 that indicated 61.9% consumers demand residential within the price ranging below RM 300,000 (Center, 2020) whereas the average house prices in Malaysia is RM 427,882 according to Malaysian House Price Index Q2 2020 by NAPIC.

For instance, according to a recent NAPIC report, as of H12020, there are 31,661 unsold residential units in Malaysia, where Johor recorded the highest state with residential overhang. About 50% of the unsold units were priced between RM 200,001 and RM 700,000. This is in contrast with the Bank Negara Malaysia's (BNM) data in 2019, where the housing median multiple affordability score reported is 4.8, indicating the house prices in Malaysia considered to be seriously unaffordable.

Table 1 - Median Multiple: Affordability Thresholds (Bank Negara Malaysia, 2016)

Rating	House Price-to-Income Ratio
Severely Unaffordable	5.1 & Above
Seriously Unaffordable	4.1 to 5.0
Moderately Unaffordable	3.1 to 4.0
Affordable	3.0 & Below

It was also found by the BNM in 2017 that the median multiple in major cities, such as George Town (10.4), KL (6.1), Petaling (6.0, areas including Shah Alam, Subang Jaya and Petaling Jaya) and Johor Bahru (5.1) in 2014 are severely unaffordable.

1.1 Problem Statement

In response to the issue highlighted, many research delved into finding the root cause of high housing prices. Most research studied from both the supply and demand analysis perspectives. The findings delineate the needs to fulfil government’s policies as one of the key factors that increase the housing prices (Othman, A, 1999; Samad et. al, 2106; Mustafa et. al, 2016). Interestingly, research by Cruz (2008) suggested the way to apprehend unaffordable housing is through transaction costs analysis. It was found that unbundling property transaction costs provides economic transaction efficiencies and able to identify transactions that can be either removed or reduced to lower the transaction costs. This was done through identification of components in housing development costs. In addition, countries with serious housing affordability problems generally have high transaction costs and weak protection of property rights (Cruz, 2008). Hence, a step toward more economic and environmentally sustainable decision-making is needed.

It is suggested that to bring down transaction costs and enhance transparency, certain taxes and fees can be removed. Hence, through the identification of the components of transaction cost economics in typical housing development, it is beneficial to reveal the cost-effectiveness of resilient housing development investments in tackling the issues of unaffordable houses (Whittington & Young, 2013; Williamson, 1981). It also serves as a useful framework for analyzing uncertainties in transaction environments (Rajeh et al., 2013) especially in a high-risk environment of a construction project (Li et al., 2014) as well as highlighting the hidden costs within the housing development transaction costs in hope to find solutions to unaffordable housing issues. This research provides an insight of relevancy of components of transaction costs within the pre and post-contract of typical housing development projects to lower the transaction costs and subsequently tackling the issues of unaffordable houses.

2. An Overview of Transaction Cost

Ronald Coase first introduced the concept of transaction costs in 1937 by defining these costs as ‘the costs of using the price mechanism in the market’ in his journal “The Nature of The Firm” (Ronald H. Coase, 1937). A transaction cost is defined as a cost incurred in making an economic exchange. He then, successively further studied and concluded that there are costs related to searching for relevant prices, negotiating, and making a contract (Coase 1992, Coase 1988, Coase 1960).

This concept was further elaborated by Oliver Williamson, who defined transaction costs as the costs of running the economic system (Williamson, 1981). When a good or service is transferred across a technologically separable interface, a transaction occurs (Williamson, 1985).

Nowadays, the term transaction costs are used to describe all the costs incurred in setting up, making, and maintaining a transaction. North & Wallis (1994) differentiate the difference between transformation costs and transaction costs in 1994, which transformation costs are incurred when the physical traits of a good or service are changed while transaction costs, on the other hand, are incurred when the property rights on a good or service change. Li et al. (2014) further distinguish that transaction costs and production cost are not the same. While production costs are the costs of converting inputs into outputs, transaction costs occur from the economic exchange. The costs incurred by activities such as preparing a bid document, estimating, drawing up a contract, administering the contract, and dealing with any deviations from contract conditions are also essential. These costs are known as transaction costs in the study of economic organizations (Ronald H. Coase, 1937).

These transactions have both positive and negative impacts on the overall transactions. For instance, in positive transaction costs, it seeks to make decisions increasing the efficiency of the activity/ies and hence increases the profitability of the transactions. Some transactions which would otherwise be utility increasing may not occur when transaction costs exist.

However, there are contradictions in defining “transaction costs” (Morteza Farajian, 2010). The term “transaction cost” is not consistently defined in the construction industry because the concept of transaction cost is not completely accepted by all players in construction projects. Therefore, it is not clear whether transaction costs can be reduced, mainly because they are not defined systematically and consistently (Li et al., 2014).

2.1 Transaction Cost Economics Application in the Construction Industry

Transaction Cost Economics (TCE) refers to a theory and methodology to relatively evaluate the cost-effectiveness of institutional arrangements in managing transaction (Whittington & Young, 2013). It allows players in an organization to have a better understanding of the hidden costs associated with pre-contract and post-contract of project work (Rajeh et al., 2013). Given the fact that TCE is an important component in any construction, hence it is obvious to assess the transaction costs in construction (Rajeh et al., 2013). TCE has been successfully applied into various industries to analyze on the cost-effectiveness of their activities and performances and also other different purposes as depicted in the following figure. For example, a research by Liang and Huang (1998) incorporate TCE to find the best business integration decision and model for electronic markets whereas DJ. Yates and Greenwood (2006) applied TCE to analyze the organizational behavior in the construction industry.



Fig. 1 - Previous researches on transaction cost economics

Nonetheless, there are costs associated with the emerging of unexpected occasions during construction, which resulted in higher transaction costs incurred during the construction stage compared to the procurement stage. Therefore, it is a crucial task in defining transaction costs which cover both project pre-contract and construction stages (Li et al., 2014). It is commonly understood that the transaction costs in the construction phase may be much higher than the transaction costs in the procurement phase (Turner, Si mister 2001; Hughes et al. 2006; Whittington 2008; Lingard et al. 1998). Hence, this strengthens the fact that there is a need to define transaction costs in the construction industry in a way that covers not only the pre-contract phase but also the construction phase of a project.

The application of Transaction Cost Economics concept is expected to improve the project performance as it facilitates better contractual procedures, encourage long term strategic methods of procurement, improve cost estimation, and determine most workable contractual ways under a particular situation, which can assist in improving whole procurement process (Dudkin & Vällilä, 2006; Ho & Tsui, 2009; Soliño & Gago de Santos, 2010; Rajeh et al., 2013).

2.2 Key Characteristics of Transaction Cost Economics

Transaction Cost Economics (TCE) debates that transactions have distinct characteristics that, in combination with the traits of alternate governance structures, produce different production and transaction costs (Williamson, 1981), and the key characteristics are as follows (Boudreau et al., 2007):

Table 2 - Key characteristics of transaction cost economics

Key Characteristics	Descriptions
Asset Specificity	Dependencies between buyers and suppliers, and are thus committed into the transaction for a considerable period after (Williamson, 1981)
Uncertainty	Mostly influenced by environmental variability and behavioral uncertainty (Rindfleisch and Heide 1997)
Frequency of Transactions	Can affect and influence both transaction and production costs even though in the age of the Internet, there are many high volume transactions that can be executed electronically (Watson, Zinkhan, and Pitt 2004; Chatterjee, Segars, and Watson 2006; Glassberg and Merhout, 2007)

2.3 Types of Transaction Cost

Generally, transaction costs are classified into searching and information costs, bargaining and decision costs, and policing and enforcement costs (Williamson, 1981). The explanation is as follows:

2.3.1 Searching and Information Costs

In this context, searching and information costs are related to costs involved in contract drawing up (Wink Junior et al., 2011), information gathering for identification and evaluation of potential trading partners (Dyer, 1997), and for information searching regarding process and product such as source searching (Liang & Huang, 1998).

2.3.2 Bargaining and Decision Costs

While bargaining and decision costs are related to costs involved in contract signing (Wink Junior et al., 2011), agreement negotiating and writing up (Dyer, 1997), and costs involved at negotiating stage regarding negotiating of terms between parties (Liang & Huang, 1998).

2.3.3 Policing and Enforcement Costs

Policing and enforcement costs are related to contract monitoring and enforcing (Wink Junior et al., 2011), agreement monitoring in ensuring pre-set obligations fulfilled by each party in contract, and ex-post bargaining and trading partner sanctioning on contract disobeying and breaching matters (Dyer, 1997).

2.4 Transaction Cost Components

In the construction industry, the transaction cost components are classified into pre-contract cost and post-contract costs. According to research by Li et al. (2014), at pre-contract, transaction costs consist of the costs involving researching market, financing chances exploring, economic feasibility study conducting, negotiation or bidding, and the cost of managing of pre-contract project which carried out day-to-day.

Whereas, post-contract costs in general procurement cover the costs of monitoring and control, dispute resolution costs and costs of implementation. Costs of monitoring and control are derived from transition observation and verifying compliances. Dispute resolution costs incurred from the resolution of conflicts and implementation costs come from renegotiation and refinement (Li et al., 2014). It can be further categorized into variable or fixed components and the components are either visible (transparent) or hidden (non-transparent).

Fixed cost components are those costs that are not dependent upon the implementation strategy and cannot be managed or reduced during implementation. Variable cost components, on the other hand, differ during the implementation of the investment decision and are a function of the underlying implementation strategy. Variable cost components make up the majority of total transaction costs.

Visible or transparent cost components are those costs whose fee structure is known in advance, such as percentage of trading profit or traded value, for instance, fees, commissions, taxes and spreads. Hidden or non-transparent cost components are those costs whose fee structure is unknown and unclear. The cost structures for these hidden components are typically estimated using statistical models. Non-transparent transaction costs comprise the greatest portion of total transaction cost and provide the greatest potential for performance enhancement. Traders and algorithms can be used to identify the essentiality of these components in order to add value to the implementation process (Kissell, 2013).

2.5 Transaction Cost Components in Housing Development

The typical housing development process was integrated with the RIBA Plan of Work 2013 to have a consistency of activities involved in the overall development. The RIBA Plan of Work is a process protocol and management tool

that serves as a foundation or guideline for the architects' profession and the construction industry by providing a shared framework for the organization and management of building projects and is used worldwide. It also provides important work stage reference points used in a multitude of contractual and appointment documents and best practice guidance (RIBA, 2013). The integration of a typical housing development process with the RIBA Plan of Work 2013 is depicted in the following figure 2:

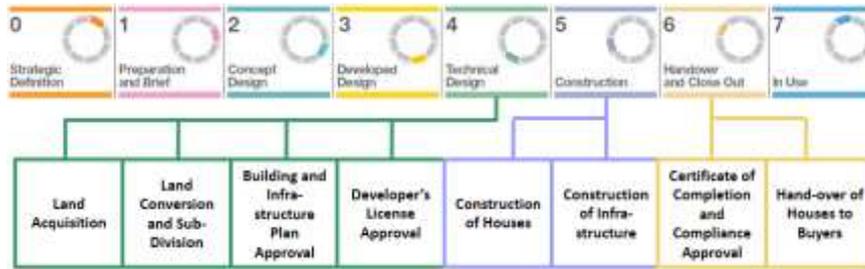


Fig. 2 - Typical housing development process based on RIBA

Coupled with the RIBA Plan of Work 2013, Lean Construction, which is a theoretical inspiration for the formulation of a new theory-based methodology for construction (Koskela et al., 2007) is believed to be able to highlight inefficient economic activities. Through the application of lean production in project management in typical housing developments, identification of redundant and insignificant activities can be made in order to remove unnecessary and redundant process.

Essential features of Lean Construction include a clear set of objectives for the delivery process, aimed at maximizing performance for the customer at the project level, concurrent design, construction, and the application of project control throughout the life cycle of the project from design to delivery (Aziz & Hafez, 2013). The principle application of Lean Construction will be able to result in different way to manage construction activities and it requires changing the way construction have been done (Howell & Ballard, 2010).

Hence, by studying the TCE together with Lean Construction, analysis on the essential or relevancy of any particular activity/ies can be identified to improve production and performance. There is similarity between the two theories that analyze the essentiality of a particular activity, in which TCE analyze in term of costs while Lean Construction analyze in term of processes involved. Both theories can be analyzed using RIBA Plan of Work 2013 as the standard process mapping tool widely used in housing development in Malaysia.

Having explained the TCE, Lean Construction and the typical housing development process, the following is the proposed conceptual framework for this research. It is a combination of TCE components coupled with Lean Construction Theory based on RIBA Plan of Work 2013 in Malaysian housing development.

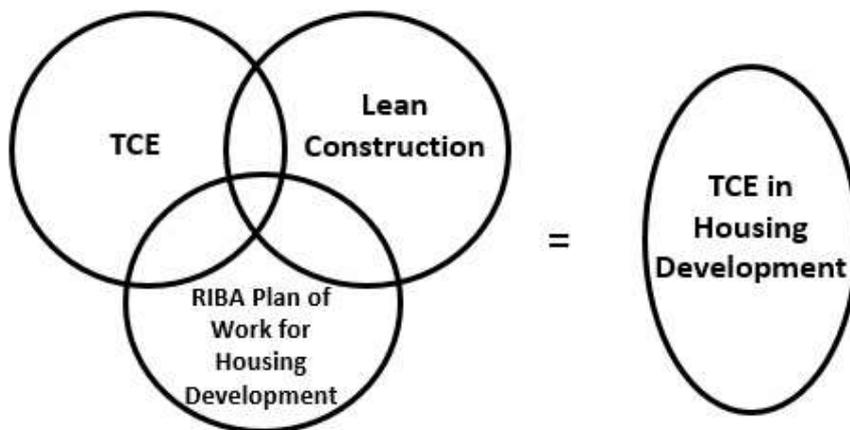


Fig. 3 - Proposed conceptual framework of research

From the study of the proposed conceptual framework, the following is the anticipated corresponding TCEs according to housing development stages. Overall, there should be 26 transaction cost components based on the literature review conducted derived from the RIBA Plan of Work 2013 and Lean Construction.

Table 3 - Anticipated TCE in housing development

Housing Development Stage	Project Stages	Transaction Cost Components derived from RIBA Plan of Work 2013
Pre-Contract	Strategic Definition	Initial considerations in assembling the project team Establish Project Program Review Feedback from previous projects Negotiation of contract
	Preparation and Brief	Prepare Project Roles Table and Contractual Tree and continue assembling the project team Review Project Program Prepare Handover Strategy and Risk Assessment Agree Schedule of Services, Design Responsibility Matrix and Information Exchanges and prepare Project Execution Plan including Technology and Communication Strategies and consideration of Common Standards to be used
	Concept Design	Review Project Program Prepare Sustainability Strategy, Maintenance and Operational Strategy and review Handover Strategy and Risk Assessments Undertake third party consultations as required and any Research and Development aspects Review and update Project Execution Plan Consider Construction Strategy, including offsite fabrication, and develop Health and Safety Strategy
	Developed Design	Review and update Sustainability, Maintenance and Operational and Handover Strategies and Risk Assessments Undertake third party consultations as required and conclude Research and Development aspects Review and update Project Execution Plan, including Change Control Procedures Review and update Construction and Health and Safety Strategies
	Technical Design	Review and update Sustainability, Maintenance and Operational and Handover Strategies and Risk Assessments Prepare and submit Building Regulations submission and any other third party submissions requiring consent Review and update Project Execution Plan Review Construction Strategy, including sequencing, and update Health and Safety Strategy
	Post-Contract	Construction
Handover and Close Out		Conclude administration of Building Contract Carry out activities listed in Handover Strategy including Feedback for use during the future life of the building or on future projects Updating of Project Information as required

3. Research Methodology

Since this research nature seeks to identify the components of transaction costs in pre and post-contract works, the most suitable research approach is qualitative approach. This approach was used to collect the data and achieve the

research's objectives. Data collection via interview will benefit this research as the technique will elicit the respondent's perspective on the research topic. The respondent chosen for the research is usually considered an expert and will be able to share their insights regarding the research topic (Mack et al., 2005). An insightful interview will be able to produce rich and meaningful data which will help achieving the objectives of the research (Knox & Burkard, 2016).

The semi-structured interview contents were divided into two section, which Section A is Respondent Background comprises of respondent's position, organization and work experience in construction industry and housing development. Whereas Section B is identification of transaction cost components in housing development, comprises of procurement practice used to identify transaction cost components, components at each project stage, additional components, categorization and quantification of components, and also suggestion of expert to reduce transaction costs in housing development.

Purposeful sampling was used as this research sampling. This involves identifying and selecting individuals or groups of individuals that are especially knowledgeable about or experienced with a phenomenon of interest (Cresswell & Plano Clark, 2011) which we called as experts. The identified respondents for this research are professional architects, surveyors, local authorities, developers, state governments and master builders that have extensive working experience in construction industry, having current, recent or direct involvement in dealing with housing development at pre and post-contract stages and having knowledge and experience with regard to identifying TCE in housing development process. The respondents were asked to verify the list of pre-determined TCEs by indicating whether those activities constitute under the TCEs components and whether activities identified as redundant or inefficient can be removed or enhanced.

The data collected from the semi-structured interview were analyzed using content analysis. Content analysis provides rich and detailed data. The answers from the reliable experts will be able to identify the components of transaction cost within the pre and post-contract of a typical housing scheme development project with its categorization and types.

Frequency distribution were also used to identify the most frequent categorization and types of transaction cost components identified by the experts. It can be useful to determine the most important and also most redundant transaction cost components based on the categorization of transaction cost components.

4. Findings and Discussion

The analysis was based on Qualitative approach for research objectives. The data collected from the interviews were interpreted and analyzed in detail and the results were presented and discussed. The components of transaction cost within pre and post-contract work of a typical housing scheme development were identified based on frequency distribution and accompanied by explanation or justification from the respondents interviewed where applicable.

The following Table 4 summarize the number of overall transaction cost components within typical housing scheme development project based on literature review and actual identification by the respondents.

Table 4 - Number of overall transaction cost components based on literature review and actual identification

Stages	Literature Review	R1	R2	R3	R4	R5	R6	R7	R8
Pre-Contract	20	22	3	17	15	22	20	2	20
Post-Contract	6	5	1	7	8	7	7	-	7
Total	26	27	4	24	23	29	27	2	27

The result showed that the number of overall transaction cost components identified by R5 (Sunway) are the highest with 29 components, followed by R1 (Majlis Bandaraya Iskandar Puteri), R6 (UEM) and R8 (Sime Darby) with 27 components. These findings are all higher than what was found from the literature review.

R2 (Land Surveyor) has a low number of overall identified transaction cost components as he is mostly involved at the earlier part of the housing development process. Interestingly, R7 (SAP) indicated the lowest number of overall identified transaction cost components stated derived from the RIBA Plan of Work 2013 and Lean Activities. R7 is in the opinion that the identified transaction costs cannot be included as the costs for the aforementioned tasks are already included somewhere in the development cost, which includes Professional Fees and salaries of the Developer's staffs.

Based on the literature review conducted, there should be 26 overall transaction cost components derived from the RIBA Plan of Work 2013 and Lean Construction. The result showed that the actual identified transaction components differs from the anticipated number from the literature review. 4 of the respondents identified higher number of transaction cost components than the anticipated ones, as they added in additional components that is relevant to be identified.

It was also found that the RIBA Plan of Work 2013 and Lean Construction is an “ideal guideline” to construction industry. However different organizations modified them to suit their business strategies and financial stability. Therefore, the result deduces that some developers and even Local Authorities identified more transaction cost components than the anticipated ones because construction projects are complex and have different nature and complexity for different projects. Some developers cannot afford to absorb these transaction cost components, that is why they included those costs into their housing prices which eventually increasing housing prices.

5. Conclusions and Recommendation

This paper provides an insight and illustration of components of transaction costs within the pre and post-contract of a typical housing development projects. The findings revealed the number of identified transaction cost components at both pre and post-contract were higher than the anticipated from literature review. Higher number of identified transaction cost components translates higher transaction cost in housing development. Analysis conducted using the frequency analysis managed to determine the most important and also the most redundant transaction cost components in a typical housing development which suggested that certain activities which are redundant or inefficient to be either removed or enhanced to lower the transaction costs. The research findings will be based for further research to quantify the transaction cost components to support the findings and ultimately develop a framework for the best practice transaction cost economics model to apprehend unaffordable housing issues. The output of this research is to promote economic transaction efficiencies in the housing scheme development project and beneficial to industry players involved in the housing scheme development.

Identification and quantification of the transaction costs within the housing development will be able to help apprehend unaffordable housing issues, however, it is suggested to conduct a wider scope of investigation on other factors that may contribute to high development costs which eventually increases housing prices.

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