

Initiation Economic Information for Decision Making Process in Housing Development

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Abstract— Conflict communication among developer and their team at all times happened due to limited financial information. A developer does not automatically construct a unit that will convince the recipients since they have their own viewpoint and mind of their needs, objectives, obstructions, and necessities of economic aspect. A decision is very hard to be made on the housing unit since the recipients have variance on numerous economic issues. This paper aims to identify the economic decision making information for housing development at the initiation phase in Malaysia. Delphi method is implemented in 3 rounds using a questionnaire survey which involved 34 private developers for data collection purposes. The finding shows that authority policies, a market of housing and timing (life cycle of a project) are most necessary information in the economic part. All of the economic information also illustrates that they are crucial and key factors in the decision-making process. The stages in the initiation phase require economic information in the form of a qualitative data bank of a developer.

Keywords— *Decision Making, Economic, Housing Development, Information, Initiation Phase*

1. Decision Making Economic Information Required During Initiation Phase of Housing Development

Inadequate communication between developer as decision maker, proposer and secretariat happened due to restraint of time and various distance between them in decision making process for construction development project [1]. They do not automatically construct a unit that will convince the the recipients, since they have their own viewpoint and mind of their needs, objectives, obstructions and necessities. [2] These situation concluded that

it is very hard to build a suitable typical housing unit since the recipients have variance on numerous problems.

Information is the most significant aspect of decision making particularly in altogether stage at initiation housing development process [3] and [4]. According to [5], [6] and [7], there are many categories of economic information that are crucial as a support in housing development project. Especially, in which methods of decision making are used as the main basic. Subsequently, convenience to information becomes limited due to the restricted volume of data delivered by developer [3]. All over again [7] pointed that the developer possibly will generate their individual approach based on their experiences and expertise with a simplest method by just applying the obtainable standards and rules.

Economic information is an important input for the housing development decision making process [8] (refer Appendix 1). The stages in the initiation phase require economic information in the form of equally qualitative and quantitative data. Based on [8] the process starts with explore and assess development, followed with evaluate development, pre-feasibility study, preliminary investigation, development schedule and finally feasibility study.

[4], [5], [6], [9] and [10] outlines all of economic information required in decision making process for initiation phase in development of a project. There are numerous types of information to mainly support decision making role in housing development project. Discussion based in literature review also emphasized information required in decision making for feasibility study process. In addition, the information in economic aspect is one of the basic references used in techniques or tools of decision making. In regards to information flow, the feasibility study process required numerous economic information to assist provision for decision making process [3]. Pre-feasibility study and preliminary investigation stage are most critical and uses information in decision making [3]. This

information flow is a grounded concept for data gathering.

The first and second stages explore and assess development and evaluate development that include eight information; project site, business/economic factors, technical design function, organisation, programme scheduling, system of control, dateline and budget. Nevertheless, pre-feasibility study comprises ten information; potential demand, existing supplying, competition, existing, type of prices, other developments, authority’s policies, timing, projection of expected sales and estimated. Contrastingly, the fourth stage accomplishes that it covers eleven types of information; environmental factors, past issues, site formally used, flood, neighborhood factors, nearby school, overcrowded, local traffic, regulatory factors appropriate, zoning and density. The fifth stage (development schedule) needs six information; land use study, type of development, provision of infrastructure, availability of existing services, marketing strategies and resources scheduling: financial planning. And the last stage which is feasibility study has five information; level of project need, financial, benefits of project, high demand and high profit.

2. Methodology

Delphi method is applied as the research technique. It is involved as the style of data collecting due to its competence to determine the factors encouragement in the current practice of decision making process in housing development projects and the economic information essential for the dissimilar decision making points. This application is where an arrangement and medium of a group of experts is extended after generating their views on a distinct issue and it depend on the “knowledgeable intuitive ideas of expert” [11]. A mixture of expert opinions and theoretical finding technique can bring about the research aim. In addition, the Delphi technique also conclude a better quality response as structured questionnaire, expert opinions, iterative process, namely ‘rounds’, feedback (developer opinions mediated by team) and anonymity of developers [12]. Total answers from the questionnaire are created into a list which will then be trimmed down in the second round of Delphi (R2). A smaller group of selected respondents were then given the second questionnaire form to review the answer of research aim and assistance to confirm the result. Figure 1 illustrates the process.

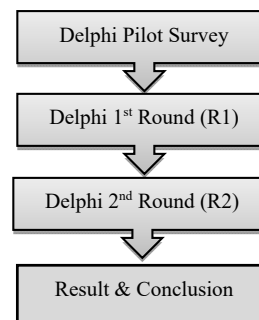


Figure 1. Main Methodology Process

3. Result and Discussion

Delphi 1st Round (R1) Survey

An overall of 34 (*n*) responses out of 50 questionnaires were recognized in R1 survey; associates to a response rate of 68 percentage. Refer the results in Table 1.

Table 1. R1 Finding

Stage/ Economic Information	A	B	C	D	E	F
1	0	0	0	28	0	0
2	0	0	22	0	6	0
3	0	0	14	7	0	0
4	0	0	11	23	0	0
5	15	0	28	0	0	0
6	0	0	28	12	6	21
7	0	0	19	6	9	0
8	5	13	0	7	7	28
9	18	22	0	0	0	0
10	6	28	6	0	0	0
11	14	20	6	0	0	0
12	19	15	6	0	0	0

- Indication of Stage:
- A: Explore and asses development
 - B: Evaluate development
 - C: Pre-feasibility study
 - D: Preliminary investigation
 - E: Development schedule
 - F: Feasibility study stage
-
- Indication of Economic Information:
- 1: Past issues
 - 2: Target customer
 - 3: Occupational of homebuyers
 - 4: Current trade area
 - 5: Market of housing
 - 6: Projected market
 - 7: Size of product
 - 8: Timing (life cycle project)
 - 9: Authorities policies
 - 10: Competition
 - 11: Existing Supply
 - 12: Potential Demand

The ranking of activities are listed under each of the Table 2 are come from mean (μ) analysis which is the information ranking determination of level of importance. The first ranking refers to the highest value of μ list but the last ranking refers to the lowest value of μ list. The 0.0000 value refers to no ranking.

Table 2. Mean analysis

Stage/Economic Information	μ	Ranking
Explore and assess development		
1. Potential demand	.5588	3
2. Existing supplying	.8235	2
3. Competition	.5294	4
4. Authorities policies	1.4412	1
5. Timing - life cycle project	.1765	6
6. Size of housing product	.0000	-
7. Projected market	.0000	-
8. Market of housing	.4412	5
9. Current trade area	.0000	-
10. Occupation of homebuyers	.0000	-
11. Target customer	.0000	-
12. Past issues	.0000	-
Evaluate development		
1. Potential demand	.4412	5
2. Existing supply	1.0294	4
3. Competition	1.8529	2
4. Authorities' policies	2.1765	1
5. Timing - life cycle project	1.1176	3
6. Size of housing product	.0000	-
7. Projected market	.0000	-
8. Market of housing	.0000	-
9. Current trade area	.0000	-
10. Occupation of homebuyers	.0000	-
11. Target customer	.0000	-
12. Past issues	.0000	-
Pre-feasibility study		
1. Potential demand	.1765	9
2. Existing supply	.3529	8
3. Competition	.5294	7
4. Authorities' policies	.0000	-
5. Timing - life cycle project	.0000	-
6. Size of housing product	.5588	6
7. Projected market	1.3824	4
8. Market of housing	2.2059	2
9. Current trade area	1.2941	5
10. Occupation of homebuyers	1.5294	3
11. Target customer	2.8824	1
Preliminary investigation		
1. Potential demand	.0000	-
2. Existing supply	.0000	-
3. Competition	.0000	-
4. Authorities' policies	.0000	-
5. Timing - life cycle project	.0000	-
6. Size of housing product	.1765	5
7. Projected market	.7059	3
8. Market of housing	.0000	-
9. Current trade area	1.0294	2
10. Occupation of homebuyers	.4118	4
11. Target customer	.0000	-
12. Past issues	2.0588	1
Development schedule		
1. Potential demand	.0000	-
2. Existing supply	.0000	-
3. Competition	.0000	-
4. Authorities' policies	.0000	-
5. Timing - life cycle project	.3529	1
6. Size of housing product	.2647	3
7. Projected market	.3529	1
8. Market of housing	.0000	-
9. Current trade area	.0000	-
10. Occupation of	.0000	-

homebuyers		
11. Target customers	.1765	4
12. Past issues	.0000	-
Feasibility Study		
1. Potential demand	.0000	-
2. Existing supply	.0000	-
3. Competition	.0000	-
4. Authorities' policies	.0000	-
5. Timing - life cycle project	.9706	2
6. Size of housing product	.0000	-
7. Projected market	1.0882	1
8. Market of housing	.0000	-
9. Current trade area	.0000	-
10. Occupation of homebuyers	.0000	-
11. Target customers	.0000	-
12. Past issues	.0000	-

Basically, the decision making process needs economic information in order to analyse future decisions. All of the economic information is crucial and key in the decision making process. The stages in the initiation phase require economic information in the form of qualitative data. Appendix 2 shows the economic information used (ranking) at initiation phase process for housing development.

Delphi 2nd Round (R2) Survey

R2 survey is to determine agreement level. The basic of the agreement level in questionnaire form in R2 survey refers to value in Table 3. The value analysis is depend on mean analysis with $n = 12$ (12 out of 34 respondents = 35 percentage).

Table 3. Value of agreement level

Agreement Level	Value
Strongly agree	5.0000
Agree	4.0000
Neither agree nor disagree	3.0000
Disagree	2.0000
Strongly disagree	1.0000

Originally, the rudimentary of result to accept or reject any variables in R2 survey was grounded on a mean (μ) value or score of 3.5000 or more (refer to Table 4). The conclusion of the analysis was referred to [13] with [14] set that the level of consensus or acceptance is 75% (≈ 3.5000 value) of 5 point Likert scale. The results demonstrate that all decision making related to the economic information that is usually carried out all through the initiation phase of the housing project development are accepted. Refer Table 5 to see the full of R2 finding.

Table 4. Value of acceptance level

Mean (μ) Value	Acceptance Level
≥ 3.5000	Accept
≤ 3.4999	Reject

Table 5. R2 finding

Stage/Economic Information	μ	Acceptance
Explore and assess development		
1. Authorities' policies	4.7500	Accept
2. Existing supply	5.0000	Accept
3. Potential demand	5.0000	Accept
4. Competition	5.0000	Accept
5. Market of housing	5.0000	Accept
6. Timing	4.9167	Accept
Evaluate development		
1. Authorities' policies	4.9167	Accept
2. Competition	5.0000	Accept
3. Timing (life cycle project)	5.0000	Accept
4. Existing supply	5.0000	Accept
5. Potential demand	5.0000	Accept
Pre-feasibility study		
1. Target Customer	4.9167	Accept
2. Market of housing	5.0000	Accept
3. Occupation of homebuyers	4.9167	Accept
4. Projected market	5.0000	Accept
5. Current trade area	4.8333	Accept
6. Size of housing product	4.8333	Accept
7. Competition	4.9167	Accept
8. Existing supply	5.0000	Accept
9. Potential demand	5.0000	Accept
Preliminary investigation		
1. Past issues	5.0000	Accept
2. Current trade area	4.9167	Accept
3. Projected market	4.9167	Accept
4. Occupation of homebuyers	5.0000	Accept
5. Size of housing product	5.0000	Accept
Development schedule		
1. Timing (life cycle project)	5.0000	Accept
2. Projected market	4.6667	Accept
3. Size of housing product	4.6667	Accept
4. Target Customer	4.3333	Accept
Feasibility study		
1. Projected market	5.0000	Accept
2. Timing (life cycle project)	4.7500	Accept

4. Discussion and Conclusion

Housing developers favor to practice economic information as a contribution for the decision making process. There are many types of economic information which act as the key support when making a decision in housing development project which is basic information used in techniques or tools of decision making. The stages in the initiation phase involve economic information in the form of both qualitative and quantitative data used in the decision making process for housing development projects which can in conclusion support produce the most perfect decision. As

shown, competition, projected market of housing, past issues and life cycle project are the highest economic information required during decision making process for housing development. Appendix 2 demonstrates the finding of decision making economic information required at the initiation phase process for housing development. Essentially, developers are stagnant missing in the skill of selecting the accurate economic information at the right stage but the gap is too minor. Improvement of skill must be greater than before and developers should not be easily gratified or contented with their success as the information technology world changes pace is faster than ever in the coming years.

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Appendix

Appendix 1: Initiation phase process for housing development.

Appendix 2: Decision economic information required at initiation phase process for housing development

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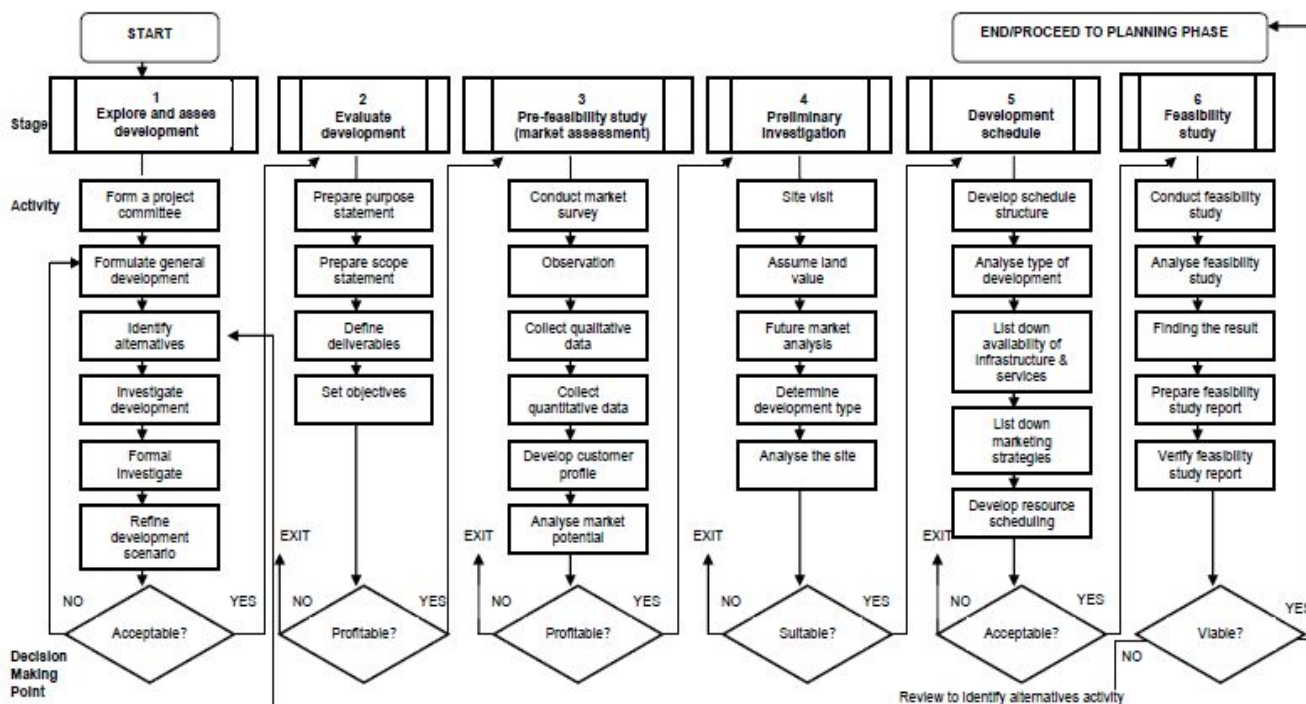
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Appendix 1: Initiation phase process for housing development



Appendix 2: Decision economic information required at initiation phase process for housing development

