AUTOMATION IN IBS: THE READINESS OF MALAYSIANS TOWARDS THE NEW CONCEPT OF VOLUMETRIC IBS HOUSING

[1] Mohd Zairul, [1]Mohd Azli Mohamad Jamil, [1]Aznida Azlan, [1]Ida Suriana Ismail

[1] Department of Architecture
Faculty of Design & Architecture,
Universiti Putra Malaysia,
43100 Serdang, Selangor, Malaysia.

ABSTRACT

Industrialized Building System or widely called as IBS is a new alternative in the modern construction that perceived as a 'lean construction'. Nevertheless, a volumetric type of IBS is still unknown in the Malaysian construction industry. This paper reports the potential of future housing typology in Malaysia through the introduction of volumetric IBS called 'flexZhouse' in the Malaysia housing market. Surveys were conducted towards M40 and U10 respondents throughout main cities in Malaysia that involved Penang, Johor Bahru, Selangor and Kuala Lumpur respectively. The objective of the survey is to gauge the acceptance of the volumetric IBS called 'flexZhouse'. Every questionnaire item are said to be valid because of the Cronbach's alpha greater than 0.6. Hence, the data in this study can be classified as good and adequate for this research means. The findings could lead to a new direction of housing design for Architects and the potential market for new type of IBS in Malaysia.

Kata kunci: Volumetric IBS, *Flexible house, housing market, flexZhouse*

INTRODUCTION

The trends in housing personalization are increasing in a recent housing development. Almost 9 from 10 new housing in Malaysia will experience modifications or alteration (M. N. Zairul and Geraedts 2015) This is partly caused by changes in lifestyles and preferences (Hentschke et al. 2014). Consequently, house buyers demand more options in housing design and specifications (Noguchi 2003; Yashiro et al. 2008). Industrialized Building System or widely called as IBS is a new alternative in the modern construction that perceived as a 'lean construction'. Nevertheless, the potential for volumetric IBS in the Malaysian housing market remains untapped. Volumetric IBS housing is adding to the existing IBS system offered in the country. This paper discusses the acceptance of volumetric IBS housing typology in Malaysia through the introduction of flexZhouse in the Malaysia housing market. Currently, there are six types of IBS system categorized as IBS which are, precast concrete, formwork, steel framing, blockworks, timber framing and innovative and hybrid system (CIDB 2003, 2016). However, this research will introduce the seventh component which is a volumetric IBS that has been practice widely in Australia, Japan and other developed countries (M. Zairul 2016).

LITERATURE REVIEW

Volumetric IBS is not a new term worldwide. Sekisui Heim is one of the prefabricated housing leaders in the Japanese housing market that manufacturing volumetric IBS housing. The company has been successful in promoting complete customized and personalized house options for its customers(M. Zairul 2016). Something that can be learnt from the Sekisui Heim is that the house is built with robust structural frames that will protect the occupants from any natural disaster. The house is promoted as having advanced home facilities that will enable the users to live comfortably for a long period of time. Another salient factor for Sekisui Heim is that it offers a flexible design that caters to the changing needs of the household over time through its remodelling programme. This feature supports the idea of flexibility in terms of structure and design alternatives for the customers (Furuse 2006)

Figure 1: The process of manufacturing and delivery of volumetric IBS in the Sekisui Heim factory

The business model to enhance customer satisfaction and market segments have become more popular lately. It is against the conventional system where the housing developers purchase a plot of land and build a standard design. The housing customers nowadays know their rights and demanding a unique style that reflects their lifestyle (Daud et al. 2012). The paper suggests the concept of personalization is believed to be the answer to address customer's satisfaction. Personalization can be defined as changing or allocating product and services according to the client's needs and requirements (Schoenwitz et al. 2017; Schoenwitz, Naim, and Potter 2012). A recent study by Kendall, (S. Kendall 2004; S. H. Kendall 2012) highlighted that the prefabrication of housing was considered as a process of mass customization (Hentschke et al. 2014; Piroozfar and Piller 2013) and proven previous remark from Bildsten, (2014) stressed that market demands can only be addressed if the housing industry adopted the industrialized and appropriate manufacturing concept (Loriana and Guglielmo 2009). However, this paper also notices that there are also problems if the house assumed total customization. In term of client access to design, this would require the housing supply to be changed radically. Suffian, (2013) mentioned that there are limits to the application of such strategies in the case of house building products, especially if the products are highly customized. Therefore, as suggested by Schoenwitz, Gosling, Naim, & Potter, (2013), we assert that the flexibility is not necessarily free of choice but also making a choice out of given options. Hence, this paper interested to investigate the acceptance of Malaysians on the new innovative concept of the manufactured volumetric IBS housing through flexZhouse.

METHODOLOGY

Data were collected from the month of January 2018 to August 2018 in Johor Bahru, Penang, Kuala Lumpur and Selangor. The main focus of the study referred to the data generated from the questionnaire. All the data gathered are analyzed using Statistical Package for The Social Sciences (SPSS), Version 22 For Windows. Descriptive statistics described the data collection and summary of the data in the simple and easy way such as a table, figure, frequency, percentage, mean and standard deviation. Four hundred respondents of young professionals in a public and private sector were surveyed face-to-face after a short video on the application and the concept of the flexZhouse was shown to them. Respondents were chosen among young professionals in Malaysia to be analysed the demographic distribution of the respondents such as gender, age, marital status, number of children, ethnicity, job category, the level of education, monthly income, household income, current homeownership and the length of stay in current home comprised of 400 respondents. Demographic distribution of the respondents is one of the important element in this study because it may be one of the factors influencing the finding of the study.

The questionnaire was pretested with five people to ensure item clarity and survey questionnaires were reviewed based on the pre-test results. The questionnaire was designed to inquire the acceptance of to determine the flexZhouse preferences among young professionals in Malaysia. Pertaining to it, flexZhouse is seen as useful to overcome the problems faced by the young professionals in owning a home. flexZhouse is an alternative means of housing because they are considered to be inexpensive, customizable, quick to build, and redeemed as environmentally friendly. Among the necessary information required is about respondents' opinion on the introduction of flexZhouse in Malaysia. The study is hoped to provide useful information towards formulating an alternative housing scheme based on (hybrid scheme) called flexZhouse, to help the young professionals to cope with the struggles to own a home. The unique concept will tie the concepts based on leasing and selling to cater to the needs of buyers. The questionnaire was divided into three sections exploring the demographics of the respondents, general questions about flexZhouse and finally the acceptance of the concept.

RESULTS & FINDINGS

Data analyses were undertaken using the statistical package for social sciences (SPSS) and dealt mainly with the ranking of the variables based on mean values and frequency distributions. Analysis of variance (ANOVA) was undertaken to test the null hypothesis that means values of the dependent variables are equal for all groups. This enabled the researcher to clarify whether the opinions of the separate contractor groups were the same on the various issues dealt with in the study. Tables 1-17 show `F statistics (based on F-ratio or value) which tests the null hypothesis that all groups have the same mean. `F significant indicates the probability of rejecting the null hypothesis i.e. that there is no difference between the mean values of the groups. Lower probability value indicates that the null hypothesis can be rejected, suggesting that there is a difference of opinion between groups. A probability value (sig.) below 0.05 suggests a high degree of difference of opinion between groups in relation to that factor. For example, in Table 4, in relation to the production planning function, the F ratio is 0.303 and the observed significance level is 0.740.

The following table shows the distribution of frequency and percentage of the respondents by age. Based on the data obtained from the questionnaire, there were 76 respondents or 19% less than 25 years and followed by 175 respondents or 43.8% between 26 to 30 years. Then, the respondents for 31 to 35 years comprised of 101

respondents with 25.3% of the overall respondents. While the respondents who more than 36 years showed 48 respondent or 12%. This illustrated that the highest number of respondents between 26 to 30 years and the lowest allocated by the respondents for more than 36 years.

Table 1: Number of Respondents based on Age

Age	Frequency	Percentage
Less than 25 years	76	19
26-30 years	175	43.8
31-35 years	101	25.3
More than 36 years	48	12
Total	400	100

Table 2 exhibits the findings based on the ethnicity of the respondents. Based on the data obtained, there were 306 respondents or 76.5% are Malay. It was followed by 43 respondents or 10.8% are Chinese and 42 respondents or 10.5% are Indian. Next, Bumiputera Sabah or Sarawak showed 7 respondents or 1.8% and another ethnicity such as Bugis and Siamese showed 2 respondents or 0.5%. The highest number of respondents are Malay and the lowest are others.

Table 2: Number of Respondents based on Ethnicity

Ethnicity	Frequency	Percentage
Malay	306	76.5
Chinese	43	10.8
Indian	42	10.5
Bumiputera	7	1.8
Others	2	0.5
Total	400	100

Referring to Table 3, it shows the finding regarding the job category of the respondents. Based on the data obtained, there were 197 respondents or 49.3% are government employees. While private employees showed 203 respondents or 50.8% were. This illustrated that the highest number of respondents are private employees and the lowest allocated by the respondents are government employees.

Table 3: Number of Respondents based on Job Category

Job Category	Frequency	Percentage
Government Employee	197	49.3
Private Employee	203	50.8
Total	400	100

According to Table 4, the findings illustrated the respondents based on the level of education. Based on the data obtained from the questionnaire, there were 281 of them or 70.3% are bachelor's degree followed by 111 of them which represent 27.8% are master's degree. Besides that, 8 of the respondents with 2% are Doctor of Philosophy. Thus, it shows that the highest number of respondents are bachelor's degree and the lowest was Doctor of Philosophy.

Table 4: Number of Respondents based on Level of Education

Level of Education	Frequency	Percentage
Bachelor's degree	281	70.3
Master's degree	111	27.8
Doctor of Philosophy	8	2
Total	400	100

Referring to Table 5, the findings on the monthly income of the respondents shown. Based on the data, there were 268 respondents or 67% have between RM 2501 until RM 3500 and followed by 48 respondents or 12% between RM 3501 until RM 4500. While 28 of them which represent 7% have income between RM 4501 until RM 5500 followed by 19 of them with 4.8% have between RM 5501 until RM 6500. Then, there were 8 respondents or 2% have income between RM 6501 until RM 7500 and followed by 29 respondents or 7.3% have income more than RM 7500. Hence, it shows that the highest number of respondents had income between RM 2501 until RM 3500 and the lowest are between RM 6501 until RM 7500.

Table 5: Number of Respondents based on Monthly Income

Monthly Income	Frequency	Percentage
RM 2501-RM 3500	268	67
RM 3501-RM 4500	48	12
RM 4501-RM 5500	28	7
RM 5501-RM 6500	19	4.8
RM 6501-RM 7500	8	2
More than RM 7500	29	7.3
Total	400	100

Referring to Table 6, the findings on the living in a flexZhouse of the respondents shown. Based on the data, there were 41 respondents or 10.3% are not at all interested and followed by 100 respondents or 25% slightly interested. While 177 of them which represent 44.3% have somewhat interested followed by 63 of them with 15.8% have very interested. Then, there were 19 respondents or 4.8% have extremely interested. Hence, it shows that the highest number of respondents are somewhat interested and the lowest are extremely interested.

Table 6: Number of Respondents based on Living in a flexZhouse

Living in a flexZhouse	Frequency	Percentage
Not at all interested	41	10.3
Slightly interested	100	25
Somewhat interested	177	44.3
Very interested	63	15.8
Extremely interested	19	4.8
Total	400	100

Table 7 exhibits the findings based on desire buy flexZhouse of the respondents. Based on the data obtained, there were 128 respondents or 32% are rent to own option. It was followed by 149 respondents or 37.3% are rent to buy option and 123 respondents or

30.8% are ownership. The highest number of respondents are rent to buy option and the lowest is ownership.

Table 7: Number of Respondents based on desire to buy flexZhouse

Desire to buy flexZhouse	Frequency	Percentage
Rent to own option	128	32
Rent to buy option	149	37.3
Ownership	123	30.8
Total	400	100

Table 8 exhibits the findings based on the flexZhouse affordability of the leasing selling concept. Based on the data obtained, there were 84 respondents or 21% are interested in a studio unit. It was followed by 117 respondents or 29.3% interested in a single unit and 113 respondents or 28.3% are interested in long units. Next, the premium unit showed 85 respondents or 21.3%. The highest number of respondents are a single unit and the lowest are the studio unit.

Table 8: Number of Respondents based on flexZhouse affordability

Leasing Selling Concept	Frequency	Percentage
Studio Unit	84	21
Single Unit	117	29.3
Long Unit	113	28.3
Premium Unit	85	21.3
Total	400	100

To identify the purchase of a flexZhouse in future

Table 9 represents the frequencies and percentages for the purchase of a flexZhouse in future. As shown in Table 4.19, a substantial majority of the respondents chooses very important about *"The safety tools in flexZhouse"* (59.5%) and followed by *"Quality of construction is durable and has a warranty*" (57.8%). The respondents choose important about *"Construction with varied designs"* (45%) and followed by "*Impact on the interior look of flexZhouse" (*44%). As seen in Table 4.19, the respondents showed various reactions towards the purchase of a flexZhouse. The highest mean showed respondents important about *"The safety tools in flexZhouse" (*with a mean of 4.427, SD=0.837). While the lowest mean showed the respondents moderate important about *"Construction with varied designs"* (with a mean of 3.832, SD=0.973).

Table 9: Frequencies and percentages for interest to purchase a flexZhouse

Statement	**1**	**2**	**3**	**4**	**5**	**Mean**	**SD**
Resale value and property appreciation	5 (1.3%)	19 (4.8%)	53 (13.3%)	146 (36.5%)	177 (44.3%)	4.177	0.92
Overall value	4 (1%)	13 (3.3%)	39 (9.8%)	169 (42.3%)	175 (43.8%)	4.245	0.834
Availability of financing to pay market purchase price	5 (1.3%)	13 (3.3%)	54 (13.5%)	174 (43.5%)	154 (38.5%)	4.147	0.861

Quality of the surrounding neighborhood	2 (0.5%)	16 (4%)	61 (15.3%)	153 (38.3%)	168 (42%)	4.172	0.865
Ability to quickly construct by the developer	7 (1.8%)	28 (7%)	85 (21.3%)	160 (40%)	120 (30%)	3.895	0.97
Construction with varied designs	8 (2%)	35 (8.8%)	75 (18.8%)	180 (45%)	102 (25.5%)	3.832	0.973
Construction with many features	6 (1.5%)	28 (7%)	81 (20.3%)	167 (41.8%)	118 (29.5%)	3.907	0.951
Quality of construction is durable and has a warranty	4 (1%)	8 (2%)	39 (9.8%)	118 (29.5%)	231 (57.8%)	4.41	0.823
Impact on the interior look of flexZhouse	5 (1.3%)	20 (5%)	77 (19.3%)	176 (44%)	122 (30.5%)	3.975	0.9
Impact on the exterior look of flexZhouse	4 (1%)	25 (6.3%)	81 (20.3%)	165 (41.3%)	125 (31.3%)	3.955	0.924
The safety tools in flexZhouse	5 (1.3%)	9 (2.3%)	34 (8.5%)	114 (28.5%)	238 (59.5%)	4.427	0.837
The guard services in the flexZhouse compound	6 (1.5%)	15 (3.8%)	53 (13.3%)	139 (34.8%)	187 (46.8%)	4.215	0.916

Table 10 represents the frequencies and percentages for the perception of introducing the flexZhouse concept. As shown in Table 10, a substantial majority of the respondents chooses to agree about *"flexZhouse will reduce wastage in terms of cost for renovation in the future by allowing for customization benefits"* (59.5%) and followed by *"flexZhouse allow me to add additional features easily*" (49.3%). The respondents also choose very agree about *"flexZhouse is good for singles"* (37.5%) and followed by "*flexZhouse is good for those who just start a new life" (*36.5%). As seen in Table 4.20, the respondents showed various reactions to the perception of introducing the flexZhouse concept. The highest mean showed respondents agree about *"Although present housing allows customization, it often involves high financial commitment" (*with a mean of 4.14, SD=0.86). While the lowest mean showed the respondents moderately agree about *"At present, there are no consultation services (before and after sales, design and technical issues)"* (with a mean of 3.46, SD=1.03).

Table 10: Frequencies and percentages for the perception of introducing the flexZhouse concept

Statement	**1**	**2**	**3**	**4**	**5**	**Mean**	**SD**
Present housing market delivers standardized products	10 (2.5%)	21 (5.3%)	139 (34.8%)	175 (43.8%)	55 (13.8%)	3.61	0.877
Present housing often leads to alterations of layouts to meet the new needs	6 (1.5%)	24 (6%)	110 (27.5%)	185 (46.3%)	75 (18.8%)	3.747	0.88
Although present housing allows customization, it often involves high financial commitment	5 (1.3%)	7 (1.8%)	72 (18%)	159 (39.8%)	157 (39.3%)	4.14	0.858
At present late delivery of home is common	7 (1.8%)	21 (5.3%)	140 (35%)	165 (41.3%)	67 (16.8%)	3.66	0.878

At present housing projects are sometimes abandoned due to insufficient funds	6 (1.5%)	18 (4.6%)	102 (25.5%)	170 (42.5%)	104 (26%)	3.87	0.902
At present, there is no consultation services (before and after sales, design and technical issues)	13 (3.3%)	57 (14.3%)	127 (31.8%)	139 (34.8%)	64 (16%)	3.46	1.025
Current renting options do not permit much freedom for tenants to have the flexibility of space customization	3 (0.8%)	14 (3.5%)	94 (23.5%)	186 (46.5%)	103 (25.8%)	3.93	0.834
Current physical housing scenarios give customers fewer options to 'grow' and 'shrink' with the home	2 (0.5%)	20 (5%)	108 (27%)	188 (47%)	82 (20.5%)	3.82	0.83
Current physical housing scenarios do not cater for future spatial requirements	0 (0%)	34 (8.5%)	119 (29.8%)	187 (46.8%)	60 (15%)	3.682	0.829
The inflexibility of the current housing causes people to move to other housing to suit their changing conditions	1 (0.3%)	29 (7.3%)	97 (24.3%)	183 (45.8%)	90 (22.5%)	3.83	0.867
The function of housing should change from the provision of shelter to serving multiple purposes	6 (1.5%)	17 (4.3%)	96 (24%)	193 (48.3%)	88 (22%)	3.85	0.862
Developers in Malaysia are currently not responsive towards a buyer-centric (friendly) approach	6 (1.5%)	37 (9.3%)	119 (29.8%)	151 (37.8%)	87 (21.8%)	3.69	0.962
flexZhouse is catered for long lifespan through the customization options	2 (0.5%)	27 (6.8%)	132 (33%)	179 (44.8%)	60 (15%)	3.67	0.829
the flexZhouse concept will support growing household needs	2 (0.5%)	22 (5.5%)	104 (26%)	193 (48.3%)	79 (19.8%)	3.812	0.83
flexZhouse will reduce wastage in terms of cost for renovation in the future by allowing for customization benefits	2 (0.5%)	15 (3.8%)	96 (24%)	211 (52.8%)	76 (19%)	3.86	0.779
flexZhouse will help young starters to customize their home according to changing preferences	3 (0.8%)	12 (3%)	76 (19%)	195 (48.8%)	114 (28.5%)	4.012	0.814
flexZhouse will help young starters to customize their home according to financial capabilities	6 (1.5%)	11 (2.8%)	89 (22.3%)	177 (44.3%)	117 (29.3%)	3.97	0.872
Customers are willing to pay a higher price for a better customized home	8 (2%)	42 (10.5%)	109 (27.3%)	149 (37.3%)	92 (23%)	3.687	1.003
If FlexZhouse concept is eco-friendly I would love to live in it	5 (1.3%)	16 (4%)	79 (19.8%)	178 (44.5%)	122 (30.5%)	3.99	0.881
The flexZhouse is affordable	5 (1.3%)	15 (3.8%)	106 (26.5%)	176 (44%)	98 (24.5%)	3.867	0.869

Leasing concept is preferable to me	17 (4.3%)	41 (10.3%)	119 (29.8%)	145 (36.3%)	78 (19.5%)	3.565	1.048
Selling concept is preferable to me	7 (1.8%)	22 (5.5%)	114 (28.5%)	173 (43.3%)	84 (21%)	3.762	0.904
Leasing and selling concept will give benefit to young professionals	4 (1%)	12 (3%)	91 (22.8%)	187 (46.8%)	106 (26.5%)	3.947	0.837
flexZhouse is good for singles	2 (0.5%)	15 (3.8%)	75 (18.8%)	158 (39.5%)	150 (37.5%)	4.097	0.865
flexZhouse is good for those who just start a new life	3 (0.8%)	13 (3.3%)	63 (15.8%)	175 (43.8%)	146 (36.5%)	4.12	0.841
flexZhouse allow me to move elsewhere	6 (1.5%)	20 (5%)	99 (24.8%)	182 (45.5%)	93 (23.3%)	3.84	0.889
flexZhouse allow me to add additional features easily	3 (0.8%)	22 (5.5%)	89 (22.3%)	197 (49.3%)	89 (22.3%)	3.867	0.846
flexZhouse is flexible compared to existing conventional house	2 (0.5%)	13 (3.3%)	101 (25.3%)	184 (46%)	100 (25%)	3.917	0.819

Table 11 represents the frequencies and percentages for the supply chain and financial aspects. As shown in the table, a substantial majority of the respondents chooses agree about *"Moratorium"* (49.5%) and *"The rent to own option*" (44.5%). While the minority of respondents choose "*Timely delivery period of home to the buyers"* (44.3%) and *"The rent to buy option"* (43.3%). As seen in Table 14.1, the respondents showed various reactions towards the supply chain and financial aspects. The highest mean showed respondents agree about *"Timely delivery period of home to the buyers" (*with a mean of 4.065, SD=0.804) for supply chain and *"The rent town option"* (with a mean of 3.912, SD=0.867) for financial. While the lowest mean showed the respondents moderately agree about *"Moratorium"* (with a mean of 3.792, SD=0.875) for supply chain and *"The rent to buy option"* (with a mean of 3.907, SD=0.872) for financial.

Table 11: Frequencies and percentages for the supply chain and financial aspects

Statement	1	2	3	4	5	Mean	SD
Timely delivery period of home to the buyers	2 (0.5%)	7 (1.8%)	84 (21%)	177 (44.3%)	130 (32.5%)	4.065	0.804
Moratorium (18 months grace period to further change the interior/exterior of home)	8 (2%)	19 (4.8%)	98 (24.5%)	198 (49.5%)	77 (19.3%)	3.792	0.875
The rent to own option	6 (1.5%)	11 (2.8%)	100 (25%)	178 (44.5%)	105 (26.3%)	3.912	0.867
The rent to buy option	4 (1%)	16 (4%)	100 (25%)	173 (43.3%)	107 (26.8%)	3.907	0.872

Table 12 represents the frequencies and percentages for the ownership of flexZhouse. As shown in the table, a substantial majority of the respondents chooses agree about *"I would like to recommend flexZhouse to others"* (46.3%) and followed by *"I will consider purchasing a unit in a flexZhouse apartment*" (44.8%). The respondents choose moderately agree about *"The probability that I will choose the flexZhouse is very high"* (35.3%). As seen in Table 4.31, the respondents showed various reactions towards the

ownership of the flexZhouse. The highest mean showed respondents moderately agree about *"I would like to recommend flexZhouse to others" (*with a mean of 3.757, SD=0.839). While the lowest mean showed the respondents also moderately agree about *"The probability that I will choose the flexZhouse is very high"* (with a mean of 3.55, SD=0.913).

Table 12: Frequencies and percentages for the ownership of flexZhouse

Statement	1	2	3	4	5	Mean	SD
The probability that I will choose the flexZhouse is very high	14 (3.5%)	24 (6%)	141 (35.3%)	170 (42.5%)	51 (12.8%)	3.55	0.913
I will rent/purchase a unit in the near future	7 (1.8%)	29 (7.3%)	124 (31%)	175 (43.8%)	65 (16.3%)	3.655	0.896
I will consider purchasing a unit in a flexZhouse apartment	9 (2.3%)	25 (6.3%)	131 (32.8%)	179 (44.8%)	56 (14%)	3.62	0.881
I would like to recommend flexZhouse to others	6 (1.5%)	14 (3.5%)	123 (30.8%)	185 (46.3%)	72 (18%)	3.757	0.839

Reliability

Table 13 showed the reliability of the item in questionnaire. The result is range between 0.733 to 0.933. Based on the result showed Cronbach Alpha of purchase of a flexZhouse are 0.922, perception introduce the flexZhouse are 0.933, Besides that, supply chain and financial aspect is 0.733 and ownership of flexZhouse are 0.898. Every questionnaire item is said to be valid because the Cronbach's alpha greater than 6. So, the data in this study can be classified as good and adequate for this research means.

Factor	Cronbach Alpha	No of Item
Interest to purchase of a flexZhouse	0.922	12
Perception Introduce the flexZhouse	0.933	28
Supply Chain and Financial aspect	0.733	4
Ownership of flexZhouse	0.898	4

CONCLUSION

The summary showed perception on the new concept of volumetric IBS house through flexZhouse project among young professional in Malaysia. The study conducted among the young professionals from the main cities in Malaysia such as Selangor, Kuala Lumpur, Johor and Penang comprising government and private sector officers. Housing ownership among young professional has been a controversial issue due to the increasing house price, contract basis employment status and insecure relationship. According to the input obtained from the questionnaires, majority of them stated that flexZhouse is a nice idea for new housing concept in line with current development and urbanization. The study reveals that there is a potential for the flexible IBS house in the Malaysian housing market especially in the main cities in Malaysia. However, several considerations as highlighted earlier should be taken into considerations before the concept being implemented. The study also shows that the concept of flexZhouse need to provide more explanation and information regarding the detailing of the business model for further understanding among the young professional. Besides that, the location for flexZhouse need to highly consider attracting the attention among the potential buyer.

Nevertheless, this research contributes to enhance the IBS scope of studies in the context of Malaysia.

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