

Sales Expense Strategies for Competitive Pricing of Industrial Building System (IBS) Components.

N. D. Aziz¹, M.F. Ishak¹, M. A. Omardin¹, A. Zulkiple², Y. Mohamed³

¹Earth Resources and Sustainability Centre, Universiti Malaysia Pahang, Lebuhraya Tun Razak, 26300 Kuantan, Pahang, Malaysia

²Faculty of Civil Engineering Technology, Universiti Malaysia Pahang, Lebuhraya Tun Razak, 26300 Kuantan, Pahang, Malaysia

³CIDB Malaysia, Bahagian IBS & IBM, Putra World Trade Centre (PWTC), Jalan Tun Ismail, 50480, Kuala Lumpur, Malaysia

e-mail: nordiana.aziz@gmail.com

Abstract. The pandemic situation demand the construction player need to consider to re-evaluate architecture design. The issue of shortage of skilled workers due pandemic and method of traditional construction involving longer period and close contact among labours questioned in many countries. Therefore, industrial building system (IBS) or modular construction involves using pre-made modules created in a factory and brought to construction sites for assembly is one of method is recommended to overcome the issue during pandemic period. Nevertheless, The Malaysian IBS manufacturing player faced the difficult to achieve economies of scale due to higher capital cost and this problem caused by high operational cost in manufacturing. In marketing a product, sales expense is crucial to ensuring that a product can be sold in large quantities. In this study, sales expense variables among the established the cost control parameter required by IBS manufacturer that seeking for lower and stable market prices will be discuss in detail. To achieve the study objective. Thus, in this study, six (6) case studies from reliable data in the theme competitive pricing will be selected in this quantitative study. In a nutshell, this study explores China's perception in term of competitive pricing of IBS components as per recommendation by many scholars. Using semi structure measurement instrument, the recorded data gained in this study later, transcribed using Atlas.Ti software. Also, the study is expected might help the Malaysian IBS manufacturer to realise the sales-related expenses strategies that need to be invested that might boost IBS demand in their enterprises.

1. INTRODUCTION

Over the past end of 2019, the world has been flipped upside down, experiencing changes to accommodate the pandemic and post-pandemic life. Now the construction need to consider to re-evaluate architecture as well. The issue of shortage of skilled workers due pandemic and method of traditional construction involving longer period and close contact among labours questioned in many countries. In short, industrial building system (IBS) or modular construction involves using pre-made modules created in a factory and brought to construction sites for assembly is one of method to overcome the issue during pandemic period. Indeed, IBS promised non constructed on-site, this method allows for



quicker and more efficient work with less skilled labour. Meanwhile, The Malaysian IBS manufacturing player faced the difficult to achieve economies of scale due to higher capital cost and this problem caused by high operational cost in manufacturing. In marketing a product, sales expense is crucial to ensuring that a product can be sold in large quantities. Therefore, the manufacturers must be willing to do the sales investment in product marketing. Moreover, trust in branding will lead to a surge in consumer buying power. Despite, every companies need to use reasonable strategies in advertising, the factor effectiveness and cost justification need to be emphasized. More important, the manufacture need to emphasize the maximum return with low spend but meeting the target buyer expectation. In this study, sales expense variables among the established the cost control parameter required by IBS manufacturer that seeking for lower and stable market prices will be discuss in detail. The study is expected might help the manufacturer to realise the sales-related expenses that need to be invested that might aid them to increase IBS demand in their enterprises.

2. LITERATURE REVIEW

2.1. Social media technique

Social networks sometimes called “relationship networks,” help people and organizations connect online to share information and ideas. Market research, brand awareness, lead generation, relationship building, customer service. To enjoy higher volume order, the manufacturer need to do business expansion strategies that may help grow business to the next level. Nowadays, social media conquering the source of information gathering Social media advertising, or social media targeting, are advertisements served to users on social media platforms. Social networks utilize user information to serve highly relevant ads based on interactions within a specific platform. The benefits of social media are:

1. Consumers will be more receptive to your messages when marketing through social media.
2. Increase brand recognition.
3. Allows manufacturers to target or retarget ideal consumers.
4. Your competition is on social media.
5. Marketing on social media leads to higher conversion rates
6. Social media marketing helps improve brand loyalty
7. Social media marketing gives you the opportunity to gain new customer insights.
8. Reduce cost of adverting and sales agent

2.2. Participate in product's exhibition for potential client

In conjunction with to produce the competitive pricing, the manufacturer is advisable to participate in product's exhibition for potential client (Qiao, Ryan, Zhou & Lockyer, 2020). The increasing sales will enable more competitive product prices. Therefore, for marketing strategy, it is vital to participate in product's exhibition due to the reason of:

1. Bring your audience and own products face to face.
2. Product launch.
3. Generate new and targeted leads.
4. Learn what is and isn't working in market demand for purchasing strategy.

2.3. Electronic catalogue technique

The information phase of a typical e-commerce transaction is where suppliers and consumers gather information and explore potential market partners for goods and services. (Kong, Li, Love, 2001; Hudrasyah, Nugraha, Fatima, Rahadi, 2019). Electronic catalogues (or e-catalogues), like their printed counterparts, hold information about the products and services offered or requested by the participants and, consequently, form the basis of this phase of a transaction. Certain parts of the catalogues, such as

pricing and terms and conditions, are essential in the negotiation and settlement phases as well. The type of electronic catalogue will be online base and offline base. The online base normally allowed the potential client to request quotations worldwide. The manufacturer may update the new innovation or design via online catalogue. Moreover, potential client might impress and confident with the product displayed as linked with official website and reliable. Offline base catalogue offers the manufacturer to operates well when mobile data is off or there's no/poor Internet connectivity. This catalogue is often chosen due easy to develop using simple software. It is usually fixed and easy to share once the customer requests to view the product in detail. Rather than printed document, this new trend offers affordable pricing and versatile image.

2.4. Convenience payment transaction method

In business, payment is an essential part of streamlining the process. Incoming and oncoming payments should be on time per services to avoid multiple issues in the future. As a manufacturer, the convenience/flexibility of recipient payment method should be implemented in the organisation (Teo, Tan, Ooi, Hew & Yew, 2015). The manufacturer need to provides a prompt and excellent system to raise invoices by a business and delivered to the customer for payment within an agreed time frame. Indeed, the delayed payment might cause unrealistic cash flow, error in claims, poor financial problems and disagreement on valuation of work. The impact of delayed payment is delay in project progress which affects the schedule of work and leads to cost overrun and extension of time. To avoid this kind of excuse, the manufacturer need to prepare Convenience payment transaction method to avoid the upcoming problem. Moreover, the manufacturers are advisable to be a good payment master to any supplier that doing the business. The manufacturer should keep in mind that payment to the supplier as agreed must be made on due date. The effects of bad payment master to the supplier/ raw material supplier are the manufacturer might receive the product not as per expected, delivery delay, bad reputation and the businesses might lose the client/suppliers trust and interest

3. METHODS

The collection of data involves acquiring data from reliable case study in IBS from various construction manufacturing companies. Thus, in this study, the six (6) case studies in the theme competitive pricing will be selected in this quantitative study. Therefore, to reach aim of study, the researcher decided to explore China's perception to study in competitive pricing of IBS components. It reflects the coincidence of favourable cost conditions with improvements in China's ability to produce products that meet world market specifications.

3.1. DATA COLLECTION

In order to prepare the instrument for an expert interview, it is best to practise the open interview based on the topic. This is to provide the opportunity for interviewee to explain their reflections and outlooks and to avoid the closed questions and a prefixed guideline (Bogner & Menz, 2009; Meuser & Nagel, 2009). To sum up, the semi-structured instrument consisted of open-ended questions will be administered to avoid the potential risk of data collection interruption. The unit of analysis must have long experience in at least executive positive with combine of high knowledge with regard to the subject matter. The appointment meeting was set in private, in their office, during the expert's working hours. During the face-to-face interview, a piece of paper contained the list of all elements in a variable, included together in the instrument presented onto the interviewee's table (Adam, Gangnes & Shachmurove, 2006).

The preliminaries interview was done in the undeclared interview mode which this study's researcher acted as an interviewer and administrator. The participants of the preliminaries interview were consisted of three (19) experts from the Malaysia perception. The researcher tried to ensure the desired framework able to apply in local manufacturing and parallel the Malaysian government expectation. Therefore,

Table 1 shown all list involved for the preliminaries interview. They were informed as for the participatory preliminaries interview and. The experts also acted as the judge of the upcoming content validity of the questions for explanatory phase. The interviewer asked them about how clear the instructions and the difficulty of the questions. For instance, the respondents were asked about their opinion regarding the measurement instrument especially their suggestions, reactions and comments. The grammar errors and format or verb suitability were also addressed in this stage. After obtaining responses from the preliminaries interviewees (refer Table 2), the questionnaire format was revised and altered into a more appropriate one. As the preliminaries interview went smoothly, this study proceeds to use the measurement instrument to study six (6) case studies from IBS companies located at Guangzhou and Beijing as shown in Table 2. To ensure the validity of data, this study ends up by data validity with two (2) experts from Malaysia (Malaysian expert served at China and presented Malaysian government) and China perception. Table 3 shown the validators involved in this study. During this stage, the conversations are summarised and went for validation to provide validity evidence in order to support the effectiveness of a selection tool and data gained

Table 1: The sample's demographic in the preliminaries interview

No.	Gender	Position	Agency	Interviewee coding
MALAYSIA				
1.	Male	Director	Private (precast manufacturer)	P1
2.	Male	Engineer	Private (precast manufacturer)	P2
3.	Male	Project Manager	Private (IBS contractor)	P3
4.	Female	Director	Private (hybrid system)	P4
5.	Female	Director	Private (precast manufacturer)	P5
6.	Male	Director	Gov. (<i>JPA</i>)	P6
7.	Female	Manager	Gov. (<i>JPA</i>)	P7
8.	Male	Executive	Gov. (<i>JPA</i>)	P8
9.	Female	Manager	Gov. (<i>BB</i>)	P9
10.	Male	Council	Professional bodies (<i>PAM</i>)	P10
11.	Male	Senior lecturer	Gov. (IPTA) –IBS expert	P11
12.	Male	Professor	Gov. (IPTA- IBS expert)	P12
13.	Female	Senior lecturer	Gov. (IPTA)- <i>PLB</i>	P13
14.	Male	Senior lecturer	Gov. (IPTA)- <i>PLB</i>	P14
15.	Male	Director	Private (Steel manufacturer)	P15
16.	Male	Senior manager	Private (steel manufacturer)	P16
17.	Male	Senior manager	Private (IBS consultant)	P17
18.	Female	Senior manager	Private (<i>PLB</i>)	P18
19.	Male	Director	Private (<i>PLB</i>)	P19
CHINA				
20.	Male	Deputy Director	Local's observer (Malaysia Embassy)	P20
21,	Male	Manager	Local's observer (Malaysia Embassy)	P21

Remark- *JPA*(*Jabatan Perkhidmatan Awam*)- Public service Department, *BB* (*Badan Berkanun*)- Statutory Corporation, *PLP* (*Pusat Latihan Bertauliah*) Accredited Training Center, *PAM*- (*Pertubuhan Arkitek Malaysia*)- Malaysia Architectural Organisation

Table 2: The sample's demographic in the case study

Case study	Nature of business	Procurement method	Gender	Position	Interviewee coding
BEIJING					
1.	Precast concrete system	Design and build	Male	Deputy director	C1
			Female	Executive	C2
			Male	Project manager	C3
2.	Precast concrete/ Prefabricated housing (majority) system	Tendering and design and build	Male	Deputy director	C4
			Male	Operation manager	C5
			Male	HR manager	C6
3.	Formwork system	Tendering and design and build	Male	Deputy director	C7
			Male	Finance Manager	C8
4.	Precast concrete system	Design and build	Male	Sales Marketing Manager	C9
GUANGZHOU					
5.	Prefabricated Housing and steel framework	Tendering and design and build	Male	Deputy director	C10
			Female	Executive	C11
6.	Precast concrete system	Design and build	Male	Sales Marketing Manager	C12

Table 3: The validators for data

No.	Gender	Position	Agency	Interviewee coding
MALAYSIAN REPRESENTATIVE AT CHINA				
1.	Male	Deputy Director	Government (industrial relation)	J1
CHINA REPRESENTATIVE				
2.	Female	Researcher/ senior lecturer	Education	J2

3.2. DATA ANALYSIS

The research has chosen the Atlas.ti software among the qualitative analysis programmes as Atlas.ti belongs to the genre of Computer-Aided Qualitative Data Analysis (CAQDAS) programme. CAQDAS is said to be a somewhat lengthy acronym as compared to Qualitative Data Analysis (QDA) software (Friese, 2014). Similar to CAQDAS program, Atlas.ti does not actually analyse; it is simply a tool for supporting the process of theory building in qualitative data analysis. Atlas.ti, rather than manual tasks involved would be time-consuming and much easier to analyse data systematically. Atlas.ti presents as a tool like a query tool or the concurrence explorer (Friese, 2014). The researchers also believe that, it is socially suited to make the thinking part of qualitative data analysis visible. Atlas.ti is best encapsulated by the acronym VISE principle; stand for Visualising, Integration, Serendipity and Exploration (Friese, 2013). When beginning to see how it all might fit together, we can use the network

view function to visualise these ideas and explore them further (Friese, 2014). Rather than quantitative tools, the VISE principle in Atlas.ti is unable to do its own analysis, but more to the nature of information arrangement to deliver the semantic language.

The method data analysis via Atlas.ti software employed ‘computer assisted-NCT analyses’ introduced by Atlas.ti expertise (Friese, 2014). NCT is used due to novices to work in a systematic manner instead of declaring the software to be the method in itself. According to his study, the process of NCT (Noticing, collecting thing and thinking) started from noticing an interesting thing, collecting this thing and thinking about them and then coming up with the insightful result initially developed by Creswell (1998). More often, analysis moving back and forth between noticing, collecting and thinking. Instead of moving back and forth, the research avoids to moving backwards since employed a rare method which directs sequential process as the yield on a directed answer from the interviewer.

After the interview was conducted, the recorded MP3 audio was dragged to the Hermeneutic Unit (HU) for transcription using ATLAS.Ti 7.5 software. The HU programmed to form the particular project residing the digital domain (Friese, 2013). The recorded MP3 dragged into HU for the purpose to create transcription document. For instance, this research built up in the form of an embedded document in HU to create transcription. The relevant information highlighted and quoted to for the specified theme in the stage of thematic analysis. Later, via the application of network mapping in ATLAS.ti is crucial with the aim to clarify for any amendment or missing codes, quotation or memo needs in this study.

4. RESULTS AND DISCUSSION

The following Table 4 is the result of the interview session in preliminaries interview and case study. This study also removed an (1) element, retained three (3) elements with an (1) additional element as shown in Table 4. Meanwhile, Figure 1 shown the illustration of link of elements with variable that developed via Atlas. Ti.

Table 4: The validators for data

Variable: Sales Expenses		Action	New elements (case study)
Elements (literature review & preliminaries interview)	Meaning of code		
Use social media technique	The China’s manufacturers admitted that they tend to adopt technology for promotional purposes	Retained	Use social media technique
Selective event promotion on high potential client	The China’s manufacturers admitted that they are active in event related to product’s promotion and their government provides various incentive to attracts the manufacturer participation.	Retained	Participate in product's exhibition for potential client
Sales promotion to increase the production quantity	All of the manufacturers mentioned that they never practice item promotion in construction material but practice special price given to loyal customer or high volume purchasing,	Removed	-
Electronic catalogue technique	The China’s manufacturers admitted that they tend to adopt technology for promotional purposes	Retained	Electronic catalogue technique
	C4-C12 mentioned that most manufacturers will choose best any China’s payment transaction apps/ system that will ease them. They also mentioned that they are willing to invest any local system that offer convenience transaction that eases and fast payment method and easy to track payment/ debt.	Additional	Convenience payment transaction method

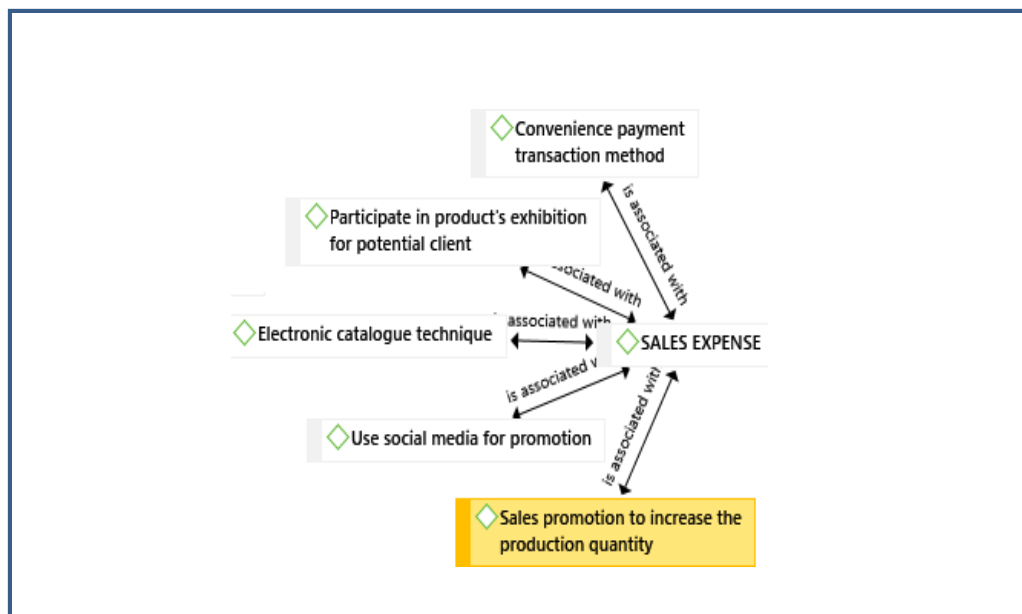


Figure 1 The tree network that linked among codes with SALES EXPENSE variable.

4.1 Use social media technique

All interviewee C1-12 admitted that they tend to adopt technology for promotional purposes. Therefore, the element for 'Use social media technique' is valid and retained in the study.

4.2 Selective event promotion on high potential client.

All interviewee C1-12 admitted they are active in event related to product's promotion and their government provides various incentive to attracts the manufacturer participation. The element for 'Selective event promotion on high potential client.' is valid and retained in the study.

4.3 Sales promotion to increase the production quantity

All of the case studies participations mentioned that they never practice promotion in construction material but practice special price given to loyal customer or high volume purchasing. The pattern of construction materials is differing than domestic material/ products as keep rise per annum due of higher demand in market. Nevertheless, due high competition among IBS manufacturer, they promised in providing the best price to attract clients. Indeed, the element of 'Sales promotion to increase the production quantity' removed from the list of elements in sales expense variable.

4.4 Electronic catalogue technique

The China's manufacturers admitted that they tend to adopt technology for promotional purposes. The element 'Electronic catalogue technique' retained in this study.

4.5 Convenience payment transaction method

According to several participants, whereby C4-C12 promotes China's payment transaction using their apps through WeChat. They mentioned that most manufacturers will choose best any China's payment transaction apps/ system that will ease them. They also mentioned that they are willing to invest any local system that offer convenience transaction that eases and fast payment method and easy to track payment/ debt. Thus, the element 'Convenience payment transaction method' added in this study.

5. CONCLUSION

This study discussed sales expense variables among the established the cost control parameter required by IBS manufacturer that seeking for lower and stable market prices. In this study, six (6) case studies from reliable data in the theme competitive pricing will be selected in this quantitative research. The researcher explores China's perception in term of competitive pricing of IBS components as per recommendation by many scholars. Using semi structure measurement instrument, the recorded data gained in this study later, transcribed using Atlas.Ti software. The study began with preliminaries studies among Malaysian experts and the measurement instrument format was revised and altered into a more appropriate one. As the preliminaries interview went smoothly, this study proceeds to use the measurement instrument to study six (6) case studies from IBS companies located at Guangzhou and Beijing. To ensure the validity of data, this study end up by data validity with two (2) experts from Malaysia (Malaysian expert served at China and presented Malaysian government) and China perception. The result of the interview session in preliminaries interview and case study mentioned that an (1) element removed, retained three (3) elements retained with an (1) additional element add on in this study. Therefore, the result might aid the Malaysian IBS manufacturer to realise strategies the sales-related expenses strategies that they need to be invested that might increase their IBS demand.

The authors would like to thank Universiti Malaysia Pahang for supporting this study through financial grant RDU190340

6. REFERENCES

- Adam, F. G., Gangnes, B., Shachmurove, Y. (2006) Why is China so Competitive? Measuring and Explaining China's Competitiveness. *The World Economy*. (pp. 95-122). <https://doi.org/10.1111/j.1467-9701.2006.00773.x>Citations: 64
- Bogner, A., & Menz, W. (2009). The Theory-Generating Expert Interview: Epistemological Interest, Forms of Knowledge, Interaction. In B. Kittel, C. von Ossietzky, & B. Rihoux (Eds.), *Interviewing expert* (pp. 43–80). United Kingdom: Palgrave Macmillan.
- Chiu, Y. B & Rushuang Ren, R (2019) Trade Balance, Savings Rate, and Real Exchange Rate: Evidence from China and Its Trading Partners, *Emerging Markets Finance and Trade*, 55:2, 351-364, DOI: 10.1080/1540496X.2018.1431882
- Friese, S. (2013). *ATLAS. ti 7 User Guide and Reference*. USA: ATLAS.ti Scientific Software Development. <http://doi.org/10.1080/1369118X.2013.870379>
- Friese, S. (2014). *Qualitative Data Analysis with ATLAS. Ti* (Second edi). USA: Sage Publications.
- Hudrasyah, H, Nugraha, M. Y. C, Fatima, I., Rahadi, R. A. (2019). E-Catalogue Attractiveness Study to Increase Suppliers Participation Volume: 4 Issues: 20, pp.14-31, *International Journal of Accounting, Finance and Business (IJAFB)*.
- Kong, C.W., Love, H., Li, P. E. D. (2001) An E-Commerce system for construction material procurement, *Construction Innovation*, Volume 1, Number 1, 2001, pp. 43-54(12). DOI: <https://doi.org/10.1191/147141701701571607>
- Lin, C., Xu, X.-P., and Du, S.-J., 2019. Analysis and evaluation of international competitiveness of china's state-owned technology enterprises in marine industry. In: Gong, D.; Zhu, H., and Liu, R. (eds.), *Selected Topics in Coastal Research: Engineering, Industry, Economy, and Sustainable Development*. *Journal of Coastal Research*, Special Issue No. 94, pp. 687–691. Coconut Creek (Florida), ISSN 0749-0208.
- Meuser, M., & Nagel, U. (2009). The Expert Interview and Changes in Knowledge Production. In B. Kittel, C. von Ossietzky, & B. Rihoux (Eds.), *Interviewing expert* (pp. 17–42). United Kingdom: Palgrave Macmillan.
- Qiao G., Ryan C., Zhou C., Lockyer T. (2020) The Entertainization of Business Event: The Case of Alibaba Computing Conference in Hangzhou. In: Ratten V. (eds) *Entrepreneurship and the Community*. *Contributions to Management Science*. Springer, Cham. https://doi.org/10.1007/978-3-030-23604-5_7

Teo, A.-C., Tan, G.W.-H., Ooi, K.-B., Hew, T.-S. and Yew, K.-T. (2015), "The effects of convenience and speed in m-payment", *Industrial Management & Data Systems*, Vol. 115 No. 2, pp. 311-331. <https://doi.org/10.1108/IMDS-08-2014-0231>

Reproduced with permission of copyright owner. Further reproduction prohibited without permission.