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Challenges for Local Contractors to Compete with Other Local and Foreign Contractors in the Malaysian Construction Industry

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Abstract

Despite the benefits, globalisation and liberalisation impose challenges to local contractors. Main problem statement: The local contractors' lack of competitive advantages provides opportunities to their competitors, limiting chances to secure local projects. This study aims to appraise local contractors' competitiveness with the objective to assess the challenges to compete in the globalisation and liberalisation. Data from the questionnaire surveys on 60 Malaysian international contractors were analysed using the RASCH model. Three challenges assessed are: unstable economic situation, stiff local competition, and building reputation difficulties. The findings are aligned with the 2021-2025 Strategic Plan to encourage local contractors to venture overseas.

Keywords: Challenges, Local contractors, Foreign contractors, Malaysian Construction Industry, Globalisation, Liberalisation

1.0 Introduction

As the impact of globalisation and liberalisation, there are challenges that the local contractors are facing. From the previous studies, there are many problems encountered from the competitiveness resulted from the many consequences due to globalisation and liberalisation. Furthermore, with the competitiveness of domestic and foreign contractors, local construction markets' development will be stifled by ineffective policies on the restriction on trade and foreign ownership (Raftery *et al*., 1998; Schwab and Sala-i-Martin, 2010).

One of the main issues under the Internationalisation Thrust under Construction Industry Master Plan (CITP) 2016-2020 is an increasingly competitive local market, especially in the presence of the foreign player (CIDB, 2016a). Undoubtedly, this situation is caused by the globalisation and liberalisation. In recent years, foreign companies have been winning an increasing number and value of projects in the domestic market. Apart from specialised and highly technical projects, foreign players are also increasingly gaining various projects in Malaysia. The gradual increase in foreign players' market share over the last few years indicates the need to enhance the capabilities of local players to remain competitive compared to the foreign construction players.

Malaysian construction companies are yet to emerge on the global stage and facing a weakening in local market share (CIDB, 2016a). It is hoped that our local contractors to be more robust locally and succeeding globally. Hence, by assessing the key challenges for local contractors in the Malaysian construction industry, local contractors can formulate their strategies in competing with other local and foreign contractors towards globalisation and liberalisation in Malaysia.

2.0 Literature Review

Raftery *et al.* (1998) mention that globalisation turns out the local market to be competitive, where the local contractors will face the problem when local market development depends on the imported construction materials. This is supported by Abdul-Aziz and Wong (2008), who give example resources of the construction industry in Cambodia, where their resources are aggregates and stones. Therefore, they have to import other materials, same with the construction industry in Hong Kong, depending on the imported materials, such as cement, steel, and wood (Shen *et al.*, 2006). In large projects, local contractors might have problems if the local financial institutions cannot meet the funding needs of the local contractors due to increased imported materials (Ofori, 2000). However, in the United Kingdom (UK) construction industry, which is already a developed country, they are also affected by the growth in imported construction components and materials (Flanagan *et al.*, 2005). As the result of the globalisation process, trade liberalisation has taken part in the business environment in the local business market. Ngowi *et al.* (2005) stated that World Trade Organisation (WTO) practices had given opportunities to firms to take part in the low entry barrier market. The capable contractors can freely move to another country with their competitive advantage and strong financial capability by bringing their expertise and technology to the host country.

Kennel (2007) then pointed that the increased competitiveness may reduce the profits of local contractors. But it is different from Lewis (2007), who stressed that the competition is good for economic efficiency, but it must be toned down for small firms because they struggle to win the projects. This situation may affect small local contractors who struggle to win the projects and compete with the other large local contractors. In tendering new projects, the client might choose the contractor who bid with the lower price. This is a result of the high competition among the contractors to win the projects. However, offering low bids will reduce the contractor's profits (Tan *et al.*, 2010).

At the same time, small local contractors have to struggle to win the projects when competing with large foreign contractors. Laryea (2010) gives an example in the Ghana construction industry, where most projects are awarded to foreign contractors. This is supported by Singh *et al*. (2010), who discusses that the small medium enterprise (SMEs) in the manufacturing sector is affected by global competition when they are difficult to survive or even maintain their business when the strong foreign manufacturers penetrate into the Indian market. Some of the measures that give competition to the Indian local firms are industrial re-licensing, the removal of the limits on the assets of large firms, policies on the liberalisation to encourage foreign direct investment (FDI) and also the increase of open general license (Singh *et al.*, 2010). Abidin *et al.* (2014) also mentioned that new and smaller firms struggle to build their reputation and seek new clients because the other big company can secure their position because of their established reputation.

The preparedness of the local contractors in competing in the local market and international market is also one of the challenges of globalisation (Raftery et al., 1998). They have to prepare in all aspects to compete with big and capable foreign contractors. Singh *et al*. (2010) report that limitations of SMEs in China are due to the low level of technology, lack of skilled workers, low level of expertise, lack of access to international markets, unsupportive legislations, ineffective incentive policies and lack of financing. If the contractors are not ready and need to improve a lot in these measures, they will be left behind. Raftery *et al.* (1998) highlight some of the preparedness for contractors that need to be done: upgrading capabilities and resources, improving efficiency, raising the quality of work, and improving the ability to secure low-cost capital resources.

Other challenges of the competitiveness in the construction industry towards globalisation and liberalisation are the workforce capability in achieving high quality of work. Some of the foreign firm working in the local market tends to bring along their workforce. Lewis (2007) questions whether the workforce brought in by foreign firms is skilled, or otherwise, they did not meet the requirement of a skilled worker. For example, in the Malaysian construction industry, around 34 per cent of the construction workforce is foreign, of which 93 per cent are low-skilled (EPU, 2015). Furthermore, the situation gets worse when the foreign workers working in the local construction market are illegal because the contractors want to save their budget without paying the immigration fee for their foreign workers' approval working in Malaysia.

One of the modes of strengthening local contractors in competing with other local and foreign contractors is consortia formation. Gruneberg and Hughes (2004) mentioned the benefits for the firms that formed the consortia: they can bid for the larger projects, take advantage of the expertise from their consortia partner and spread the risk of large projects over the firms partnering with them. Normally, the government will facilitate the formation of the consortia and firms, where they can compete for large scale of projects either locally or internationally (EPU, 2015; CIDB, 2016). However, sometimes it is involved a complicated process of consortia formation.

The increasing intensity of competitors from other local and foreign contractors also can affect the local contractors' performance. Ofori (2006) mentioned that the strong structure of the local construction industry would give strength to the local contractors' competitiveness. However, if the construction projects' orders keep decreasing due to the contractors' intensity, the local contractors might penetrate the global construction market. Birgonul and Ozdogan (2000) give an example of the Turkish contractors who penetrated North Africa and the Middle East because the rapid rise in oil prices is one of their reasons to penetrate to that countries. The other factors in the local markets that influence the firm to penetrate overseas are the production and environmental factors (Puljeva and Widen, 2007). As a matter of fact, Han *et al*. (2015) suggested that contractors must determine their competitiveness and establish their strategies to venture into the international construction market.

Table 1 shows the items for challenges of the competitiveness of the local contractors in the Malaysian construction industry. All the items were extracted from the previous literature review. The items used to assess the key challenges for local contractors in the Malaysian construction industry to compete with local and foreign contractors towards globalisation and liberalisation in Malaysia via the questionnaire survey.

Table 1: Items for challenges of the competitiveness of the local contractors in the Malaysian construction industry

Challenges on Competitiveness	Raftery et al. (1998)	Ofori (2000)	Birgonul and Ozdogan (2000)	Gruneberg and Hughes	Flanagan et al. (2005)	Shen et al. (2006)	Ofori (2006)	Kennel (2007)	Lewis (2007)	Jensen et al. (2007)	Puljeva and Widen (2007)	Abdul-Aziz and Wong (2008)	Korkmaz and Messner (2008)	Geroski et al. (2010)	Tan et al. (2010)	Laryea (2010)	Singh et al. (2010)	Schwab (2010)	Singh et al. (2010)	Ismail (2012)	Tan et al. 2012	Kamal and Flanagan (2012)	Abidin et al. (2014)	Bhala (2014)	Han et al (2015)	EPU (2015b)	CIDB (2016a)	Ho (2016)	Time referred
Development of local market depends on the imported material	•	•			•	•						•																	5
Increase competitiveness may reduce local profits								•							•														2
Small local have to struggle to win the projects competing for large local									•																				1
Small local have to struggle to win the projects competing for large foreign									•							•	•												3
Competitiveness stifle the development of domestic construction markets	•																	•											2
Preparedness of the local contractors in competing in the local market	•																		•										2
Preparedness of the local contractors in competing in global market	•																		•										2
Workforce brought in by foreign contractors skilled/not									•																•				2
Complicated process of consortia formation to promote strong local contra.				•																					•	•			3

Table 1: Items for challenges of the competitiveness of the local contractors in the Malaysian construction industry (cont'd)

Challenges on Competitiveness	Raftery et al. (1998)	Ofori (2000)	Birgonul and Ozdogan	Gruneberg and Hughes	Flanagan et al. (2005)	Shen et al. (2006)	Ofori (2006)	Kennel (2007)	Lewis (2007)	Jensen et al. (2007)	Puljeva and Widen (2007)	Abdul-Aziz and Wong	Korkmaz and Messner	Geroski et al. (2010)	Tan et al. (2010)	Laryea (2010)	Singh et al. (2010)	Schwab (2010)	Singh et al. (2010)	Ismail (2012)	Tan et al. 2012	Kamal and Flanagan (2012)	Abidin et al. (2014)	Bhala (2014)	Han et al (2015)	EPU (2015b)	CIDB (2016a)	Ho (2016)	Time referred
Intensity of competitors (other local) affect local contractors' performance							•																						1
Intensity of competitors from foreign contractors affect local contractors' performance							•																						1
Decreasing total construction orders in domestic forced local contractors to penetrate global			•								•													•					3
New firms have to struggle to build their reputation					•								•								•	•	•					•	6
New firms have to struggle to seek new clients																							•						1
Smaller firms have to struggle to build their reputation														•				•					•						3
Smaller firms have to struggle to seek new clients																							•						1
Changes in the economic situation have strong implications on the survival of firms															•								•						2

Table 1: Items for challenges of the competitiveness of the local contractors in the Malaysian construction industry (cont'd)

Challenges on Competitiveness	Raftery et al. (1998)	Ofori (2000)	Birgonul and Ozdogan	Gruneberg and Hughes	Flanagan et al. (2005)	Shen et al. (2006)	Ofori (2006)	Kennel (2007)	Lewis (2007)	Jensen et al. (2007)	Puljeva and Widen	Abdul-Aziz and Wong	Korkmaz and Messner	Geroski et al. (2010)	Tan et al (2010)	Laryea (2010)	Singh et al. (2010)	Schwab (2010)	Singh et al. (2010)	Ismail (2012)	Tan et al. 2012	Kamal and Flanagan	Abidin et al. (2014)	Bhala (2014)	Han et al (2015)	EPU (2015b)	CIDB (2016a)	Ho (2016)	Time referred
Liberalisation trade in construction industry lower the barrier for a foreign contractor to enter domestic																								●					1
Liberalisation trade in the construction industry increased foreign direct investment (FDI)										●																			1

Source: Raftery et al. (1998), Ofori (2000), Birgonul and Ozdogan (2000), Gruneberg and Hughes (2004), Flanagan et al. (2005), Shen et al. (2006), Ofori (2006), Kennel (2007), Lewis (2007), Jensen et al. (2007), Puljeva and Widen (2007), Abdul-Aziz and Wong (2008), Korkmaz and Messner (2008, Geroski et al. (2010), Tan et al. (2010), Laryea (2010), Singh et al. (2010), Schwab (2010), Singh et al. (2010), Ismail (2012), Tan et al. 2012), Kamal and Flanagan (2012), Abidin et al. (2014), Bhala (2014), Han et al.(2015), EPU (2015b), CIDB (2016a), Ho (2016)

3.0 Methodology

3.1 Population and Sampling Design
The population of this study is 112 Malaysian international contractors, as recorded by CIDB (2016b), who have been venturing overseas projects since 1986 and are still actively venturing overseas. The invitation to the organisations to participate in the questionnaire survey was sent via the online survey. The data collection was conducted for four months, between March and June 2016. The total response is 97 respondents, but the total valid questionnaires are 60 respondents, while 37 respondents are not incomplete responses.

3.2 Design of Questionnaire Survey
The survey is designed to elicit respondents' opinions concerning the challenges for local contractors in the Malaysian construction industry to compete with local and foreign contractors. The level of importance of the factors of the challenges by local contractors in the Malaysian construction industry is rated according to the five Likert scale; 1=not very important, 2=somewhat important, 3=moderately important, 4=important, 5=extremely important.

Table 2: Items construct for challenges on the competitiveness of the local contractors in the Malaysian construction industry

No	Items	Coding
1	Development of local market depends on the imported material	E1_import
2	Increase competitiveness may reduce local profits	E2_profit
3	Small local have to struggle to win the projects competing large local	E3_win_loc
4	Small local have to struggle to win the projects competing large foreign	E4_win_foreign
5	Competitiveness stifle the development of domestic construction markets	E5_stiffle
6	Preparedness of the local contractors in competing in local market	E6_lcl_market
7	Preparedness of the local contractors in competing in global market	E7_glob_mrket
8	Workforce brought in by foreign contractors skilled/not	E8_skilled
9	Complicated process of consortia formation to promote strong local contractor	E9_consortia
10	Intensity of competitors (other local) affect local contractors' performance	E10_intensity_lcl
11	Intensity of competitors from foreign contractors affect local contractors' performance	E11_intensity_frgn
12	Decreasing total construction orders in domestic forced local contractors penetrate global	E12_orders
13	New firms have to struggle to build their reputation	E13_new_build
14	New firms have to struggle to seek new clients	E14_new_seek
15	Smaller firms have to struggle to build their reputation	E15_small_build
16	Smaller firms have to struggle to seek new clients	E16_small_seek
17	Changes in economic situation have strong implications on the survival of firms	E17_survival
18	Liberalisation trade in construction industry lower the barrier for foreign contractor to enter domestic	E18_barrier
19	Liberalisation trade in construction industry increased foreign direct investment (FDI)	E19_FDI

3.3 Analysis
All the data gathered from the questionnaire survey were analysed via the Rasch model using WINSTEPS version 3.69.1.16 software. Data were analysed via Rasch model analysis consisting of five method analyses which are the reliability and validity analysis, organisation misfit analysis, unidimensionality analysis, item misfit analysis and item measure order analysis.

4.0 Findings

4.1 Reliability and Validity Analysis

The input for the key challenges on competitiveness is 60 respondents with 19 items measured. However, Table 3 shows 55 respondents (non-extreme) are reported due to 5 persons being deleted. A total of 1045 data points arising with it yields a Chi-Square value of 2107.15 with 969 degrees of freedom and p=0.0000. The Global Root-Mean-Square Residual (excluding extreme scores) was 0.6899. Cronbach's alpha (α) is 0.81, indicating good internal consistency reliability of the items in the scale in measuring single latent trait or construct.

Table 3: Summary of 55 measured (non-extreme) person to assess the key challenges for local contractors

	TOTAL SCORE	COUNT	MEASURE	MODEL ERROR	INFIT		OUTFIT	
					MNSQ	ZSTD	MNSQ	ZSTD
MEAN	70.9	19.0	1.14	.34	1.03	.1	1.01	.0
S.D.	7.2	.0	.84	.03	.36	1.1	.35	1.1
MAX.	86.0	19.0	3.17	.43	2.18	2.7	2.18	2.8
MIN.	55.0	19.0	-.41	.29	.36	-2.4	.36	-2.5
Real SMSE	0.37	TRUE S.D.	0.76	SEPARATION	2.06		Person RELIABILITY .81	
Model S.E.	0.34	TRUE S.D.	0.77	SEPARATION	2.27		Person RELIABILITY .84	
S.E. of Person MEAN = .11								

The value of person reliability is $\beta = 0.81$ with 0.11 Standard Error (SE), suggesting that the respondents were competent to answer the questionnaire survey (Fisher, 2007). This indicates that the 19 items in assessing the key challenges for local contractors in the Malaysian construction industry to compete with local and foreign contractors towards globalisation and liberalisation in Malaysia have an excellent range of difficulties in measuring the organisation ability. Organisation fit statistics investigation on outfit on Mean Square (OMNSQ) and z-score (OZSTD) show that the OMNSQ is 1.01 and OZSTD is -0.00, which is near to expectation value of 1 and 0. This reveals that 19 items are targeting the correct type of respondents in measuring the latent traits and produced data is at a reasonable prediction level of the responses to the items. The maximum organisation ability is $\beta_{max} = +3.17$ *logit* and the minimum measure is $\beta_{min} = -0.41$ *logit*. The organisation mean is $\beta_{mean} = +1.14$ *logit* reveals that the majority of the organisations find it easy endorsing the key challenges for local contractors in the Malaysian construction industry to compete with local and foreign contractors towards globalisation and liberalisation in Malaysia.

Table 4 provides the summary of 19 measured items to assess the key challenges for local contractors in the Malaysian construction industry to compete with local and foreign contractors, the Item Reliability is $\mu_{item} = 0.94$ with SE = 0.21, suggesting that the instrument has a good fit to the model (Fisher, 2007). The Item Mean is set to $\mu_{mean} = 0.00$ *logit* to ensure that each respondent has a 50:50 chance, which matched their ability to respond to the item. The OMNSQ of item fit statistics is 1.01 and OZSTD is -0.20, which is on the expectation 1 and 0. This shows that most of the items targeted the organisation distribution, which shows the excellent targeting of the items to organisations. The maximum item ability is $\mu_{max} = +2.14$ *logit* and the minimum measure is $\mu_{min} = -1.77$ *logit*.

Table 4: Summary of 19 measured items to assess the key challenges for local contractors

	TOTAL SCORE	COUNT	MEASURE	MODEL ERROR	INFIT		OUTFIT	
					MNSQ	ZSTD	MNSQ	ZSTD
MEAN	205.1	55.0	.00	.20	.98	-.3	1.01	-.2
S.D.	24.4	.0	.91	.02	.41	2.3	.41	2.3
MAX.	245.0	55.0	2.14	.24	1.88	4.4	1.83	4.0
MIN.	137.0	55.0	-1.77	.16	.35	-4.3	.37	-4.3
Real SMSE	.21	TRUE S.D.	.89	SEPARATION	4.14		Item RELIABILITY .94	
Model S.E.	.20	TRUE S.D.	.89	SEPARATION	4.45		Item RELIABILITY .95	
S.E. of Item MEAN = .21								

The difference between Organisation Mean ($\beta_{mean} = +1.14$ *logit*) and the Item Mean ($\mu_{mean} = 0.00$ *logit*) is slightly different and indicates a strong match between the organisations and item locations with their distribution. Overall, this shows that that the 19 items have a good spread to assess the key challenges for local contractors in the Malaysian construction industry to compete with local and foreign contractors towards globalisation and liberalisation in Malaysia.

4.2 Organisation Misfit

Identification of the organisation misfit analysis is important to ensure that all the respondents are fit to answer the questionnaire survey. The organisation misfit analysis revealed that out of 60 respondents, five respondents exhibited as the misfit organisations. As shown in Table 5, Cronbach's alpha is α = 0.81, which is lower than before identifying misfit organisations. Organisation Reliability also shows lower than before identifying misfit organisation which is β = 0.81, which shows excellent reliability.

Table 5: Organisation misfit analysis to assess the challenges for local contractors in the Malaysian construction industry to compete with local and foreign contractors

Items	Before identifying misfit organisation (n=60)	After identifying misfit organisation (n=55)
Cronbach's alpha (α)	0.84	0.81
Organisation		
Reliability Index	0.84	0.81
Separation	2.33	2.06
Mean	1.16	1.14
S.D.	0.94	0.84
Max	4.58	3.17
Min	-0.40	-0.41
Item		
Reliability Index	0.94	0.94
Separation	3.87	4.14
Mean	0.00	0.00
S.D.	0.80	0.91
Max	1.88	2.14
Min	-1.45	-1.77
Standardised Residual Variance		
Raw variance explained by measures	40.6%	41.8%
Unexplained variance in 1st contrast	19.3%	19.6%

The raw variance explained by measures is also higher after identifying misfit organisation, which is 51.5 per cent and 53.6 per cent before identifying the misfit organisation. Unexplained variance in the 1st contrast is lower after the organisation misfit is deleted, from 7.6 per cent to 7.4 percent. Thus, the analysis shows that the valid respondents are reliable and valid, finally formed a good measurement.

4.3 Unidimensionality Analysis

The principal component analysis (PCA) shows the raw variance explained by measures is approximately 41.8 percent is lower than the expected target of 42.0 percent as shown in Table 6, which shows good quality criteria of variance in data explained by measures as stated by Fisher (2007). Unexplained variance in the 1st contrast is in poor quality criteria (Fisher, 2007), which is 19.6 per cent. However, it can be concluded that the 19 items to assess the key challenges for local contractors in the Malaysian construction industry to compete with local and foreign contractors towards globalisation and liberalisation in Malaysia have one single overarching dimension.

Table 6: Table of standardised residual variance (in Eigenvalue units) to assess the challenges for local contractors

		Empirical		Modelled
Total raw variance in observations	32.6	100.0%		100.0%
Raw variance explained by measures	13.6	41.8%		42.0%
Raw variance explained by persons	4.1	12.5%		12.5%
Raw variance explained by items Raw	9.6	29.3%		29.5%
unexplained variance (total) Unexplained variance	19.0	58.2%	100.0%	58.0%
in 1st contrast	6.4	19.6%	33.7%	

Table 7 shows the standardised residual loadings for item (sorted by loading) to assess the key challenges for local contractors in the Malaysian construction industry to compete with local and foreign contractors towards globalisation and liberalisation in Malaysia. There are ten items ranging from 0.18 *logit* to 2.14 *logit* and 12 items ranging from -1.11 *logit* to -0.86 *logit*. The range of Infit MNSQ is within 0.35 *logit* to 1.88 *logit* while for the Outfit MNSQ is within 0.37 *logit* to 1.83 *logit*, which shows that there are no misfit items among the 19 items. Overall, all 19 items are unidimensional with good internal consistency and measure what it should be measured.

Table 7: Standardised residual loadings for item (sorted by loading) to assess the challenges for local contractors

Contrast	Loading	Measure	MNSQ		Item
			Infit	Outfit	
1 1	0.86	0.77	1.06	1.01	E11_intensity_frgn
1 1	0.85	0.92	0.88	0.92	E10_intensity_lcl
1 1	0.79	2.14	1.88	1.83	E1_import
1 1	0.78	0.86	1.18	1.24	E12_orders
1 1	0.53	0.25	0.61	0.67	E6_lcl_market
1 1	0.47	0.18	0.39	0.41	E14_new_seek
1 1	0.13	0.39	0.62	0.71	E16_small_seek
1 2	-0.86	-1.17	0.87	0.86	E13_new_build
1 2	-0.82	-0.69	1.5	1.42	E7_glob_mrket
1 2	-0.69	-1.54	0.93	0.86	E4_win_foreign
1 2	-0.68	-1.77	1.32	1.45	E17_survival
1 2	-0.51	-0.09	1.23	1.32	E18_barrier
1 2	-0.41	-0.47	0.35	0.37	E3_win_loc
1 2	-0.39	-0.3	0.41	0.43	E15_small_build
1 2	-0.3	-0.43	1.1	1.16	E19_FDI
1 2	-0.28	0.29	0.94	0.96	E5_stiffle

1 2	-0.18	0.77	1.34	1.45	E2_profit	
1 2	-0.18	0.29	1.4	1.52	E8_skilled	
1 2	-0.11	-0.38	0.56	0.59	E9_consortia	

4.4 Item Misfit Analysis

As shown in Table 8, the misfit order of item in assessing the key challenges for local contractors in the Malaysian construction industry to compete with local and foreign contractors towards globalisation and liberalisation in Malaysia is based on the three criteria, which are Outfit MNSQ, Outfit ZSTD and point measure correlation (PMC). Out of the three criteria, there are seven items with minor misfit. All items with minor misfit are not within the accepted range of Outfit MNSQ (0.5<MNSQ<1.5), Outfit ZSTD (-2<ZSTD<+2) as mentioned by Linacre (2002), nevertheless all the PMC value is still in positive value verify all items that are measured in the same direction. Thus, all items remain for further analysis.

The seven minor misfit items are item E1 (development of local market depends on the imported construction materials), E8 (either the workforce brought in by foreign contractors is skilled or not), E2 (increase competitiveness may reduce the profits of local contractors), E9 (complicated process of consortia formation to promote strong local contractors), E15 (smaller firms have to struggle to build their reputation), E14 (new firms have to struggle to seek new clients) and E3 (small local contractors have to struggle to win the projects competing large local contractors).

Table 8: Misfit order of item to assess the challenges for local contractors in the Malaysian construction industry to compete with local and foreign contractors

Item	Total score	Total count	Measure	Model S.E.	Outfit MNSQ	ZSTD	PMC	Remarks
E1	137	55	2.14	0.16	1.83	4	0.4	Minor misfit
E8	200	55	0.29	0.19	1.52	2.4	0.13	Minor misfit
E7	224	55	-0.69	0.21	1.42	2	0.5	Normal
E2	186	55	0.77	0.18	1.45	2.1	0.2	Minor misfit
E17	245	55	-1.77	0.24	1.45	2	0.19	Normal
E18	210	55	-0.09	0.2	1.32	1.5	0.31	Normal
E12	183	55	0.86	0.18	1.24	1.2	0.41	Normal
E19	218	55	-0.43	0.21	1.16	0.9	0.49	Normal
E11	186	55	0.77	0.18	1.01	0.1	0.49	Normal
E5	200	55	0.29	0.19	0.96	-0.1	0.55	Normal
E4	241	55	-1.54	0.24	0.86	-0.7	0.59	Normal
E10	181	55	0.92	0.18	0.92	-0.4	0.72	Normal
E13	234	55	-1.17	0.23	0.86	-0.7	0.39	Normal
E16	197	55	0.39	0.19	0.71	-1.6	0.57	Normal
E6	201	55	0.25	0.19	0.67	-1.8	0.83	Normal
E9	217	55	-0.38	0.21	0.59	-2.4	0.48	Minor misfit
E15	215	55	-0.3	0.2	0.43	-3.6	0.63	Minor misfit
E14	203	55	0.18	0.19	0.41	-3.8	0.79	Minor misfit
E3	219	55	-0.47	0.21	0.37	-4.3	0.74	Minor misfit

4.5 Assessing the Challenges for Local Contractors

Table 9 shows the measure order of 19 items to assess the key challenges for local contractors in the Malaysian construction industry to compete with local and foreign contractors. The items are sorted based on their measure value, which the positive value is less important factors while for negative value is the important factors items, based on Item mean μ_{mean} = 0.00 *logit* as the cut-off point.

Table 9: Measure order of the items to assessing the key challenges for local contractors

Item	Measure	Model SE	Remarks
	2.28	0.17	Less important
E1_import	0.92	0.18	Less important
E10_intensity_lcl	0.89	0.18	Less important
E11_intensity_frgn	0.85	0.18	Less important
E12_orders	0.75	0.18	Less important
E2_profit	0.41	0.19	Less important
E8_skilled	0.37	0.19	Less important
E16_small_seek	0.22	0.2	Less important
E5_stiffle	0.18	0.2	Less important
E6_lcl_market	0.14	0.2	Less important
E14_new_seek	-0.15	0.21	Important
E18_barrier	-0.28	0.21	Important
E9_consortia	-0.37	0.21	Important
E15_small_build	-0.5	0.22	Important
E19_FDI	-0.6	0.22	Important
E3_win_loc	-0.79	0.22	Important
E7_glob_mrket	-1.1	0.23	Important
E13_new_build	-1.49	0.24	Important

E4_win_foreign	-1.73	0.25	Important
E17_survival			

The location of the organisation mean is β_{mean} = +1.14 *logit* is higher than the item mean μ_{mean} = 0.00 *logit*, which shows that the respondents have the ability to endorse all 19 items. Table 10 shows the categorisation matrix of the items of the challenges for local contractors in the Malaysian construction industry to compete with local and foreign contractors towards globalisation and liberalisation in Malaysia. Extremely factors contributing to the competitiveness of local contractors as depicted in Figure 1, challenges for local contractors in the Malaysian construction industry to compete with local and foreign contractors towards globalisation and liberalisation in Malaysia can be divided into three categories which are less important, important and extremely important. The extremely important factor is E17 (changes in the economic situation have strong implications on the survival of firms), E4 (small local contractors have to struggle to win the projects competing large foreign contractors) and E13 (new firms have to struggle to build their reputation).

Table 10: Matrix of categorisation to investigate the key challenges for local contractors

Categories	Positions in normal distribution	Logit	n	%
Less important	µ to ∞	0.00 logit to ∞	2	10
Important	2nd Std to µ	-0.91 *logit* to 0.00 *logit*	14	74
Extremely important	3rd Std to 2nd Std	∞ to -0.91 *logit*	3	16

```
Person - MAP - Item
              <more>|<rare>
                  +
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                  |
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               .# M|                                                   ─────────────
   2         .#    +                                                        Some
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           #    |   D20_property  D4_customer                             import
                                                                          ant
           .   |T                                                    ─────────────
           .   |S D6_competito
   1           +    D16_maintena  D33_trade      D41_labour
           . S|     D37_macro                                              Moder
              |     D12_HR         D14_reputati                           ate
         .###  |     D17_marketin  D24_economic   D35_institut  D39_compete import
          .#   |     D28_skills                                           ant
   0      .   +M D1_new        D21_personne   D38_dev          ─────────────────
           .    |    D22_strategi  D36_politica
                |    D25_legal     D27_planning
                |    D13_technolo  D15_engineer  D18_services            Imp
               T|    D29_adv tech  D30_business  D31_innovati            ort
  -1           +    D32_infra                                           ant
               |S D19_finance   D26_leadersh              ─────────────────
               |    D11_financia  D34_skills     D9_policies
               |    D40_openness
               |    D10_currency                                        Extrem
               |                                                        Imp ely
  -2           +    D7_liberal    D8_global                            ort import
              <less>|<frequ>                                           ant ant
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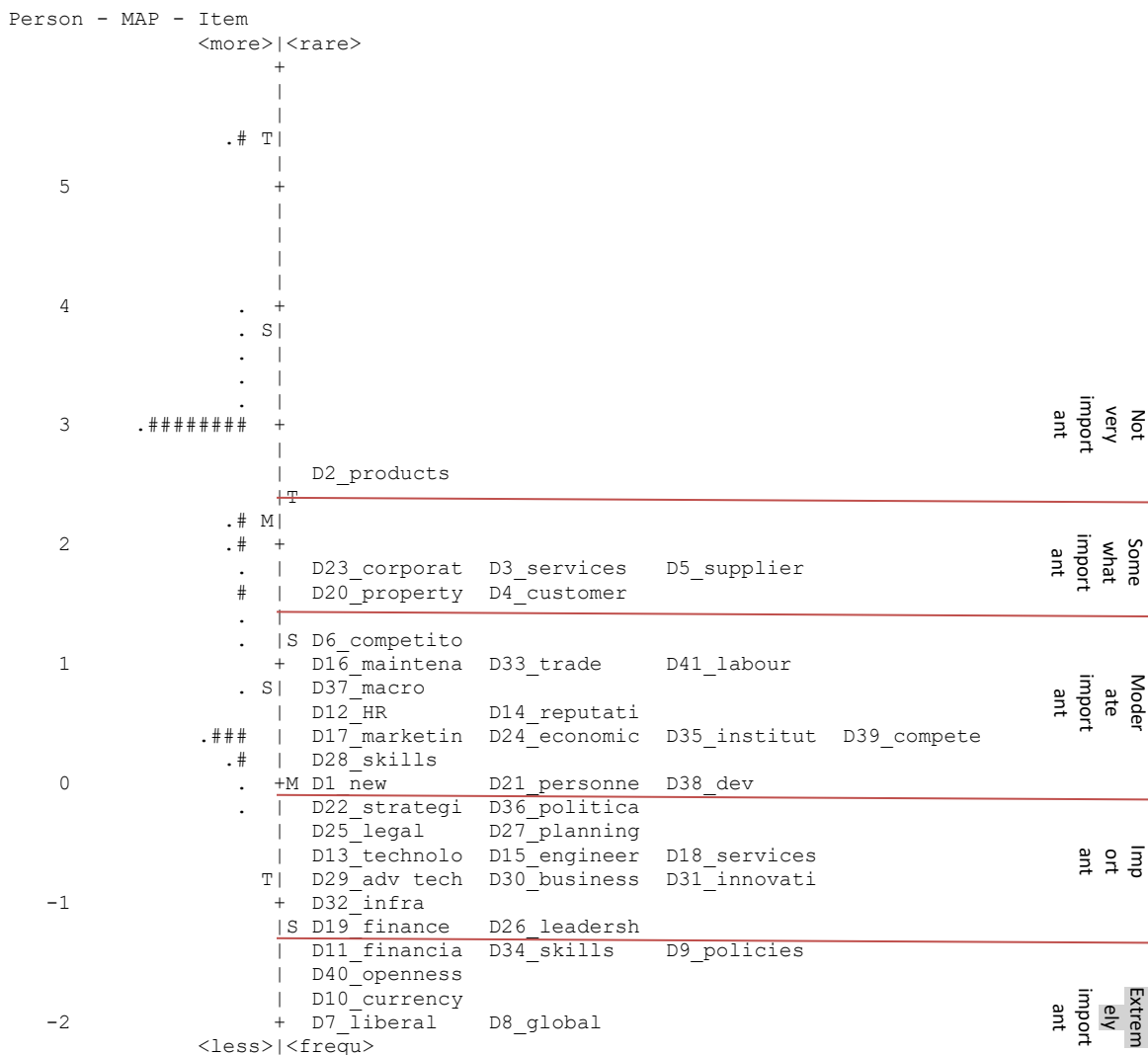
Figure 1: Person-Item distribution map to assess the challenges for local contractors in the Malaysian construction industry to compete with local and foreign contractors

5.0 Discussion

There are three key drivers in challenges for local contractors in the Malaysian construction industry to compete with local and foreign contractors towards globalisation and liberalisation in Malaysia, namely changes in the economic situation have strong implications on

the survival of firms (E17), small local contractors have to struggle to win the projects competing large foreign contractors (E4) and new firms have to struggle to build their reputation (E13).

Due to the globalisation and liberalisation in the Malaysian construction industry, local contractors cannot escape from the changes in the economic situation as the challenges identified have an impact on their survival due to the competitiveness. Changes in the economic situation are the external factor having strong implications on the survival of firms. The country's economic situation also influences job opportunities in local markets. For local contractors who compete in an economic downturn, the firms have to strategically plan their actions and decide whether to compete locally or start venturing into foreign markets. However, for the majority of construction players who stayed to compete at the local level, the economic downturn created a situation of strong competition with lesser job opportunities.

Most of the foreign contractors who venture into the Malaysian construction industry recorded a significant number of projects completed, consecutive years working in the Malaysian construction market, number of countries working globally, and strong financial capacity. Because of that, another challenges identified in this study are small local contractors have to struggle to win the projects competing large foreign contractors. Although competition is good for economic efficiency, it must be toned down for small firms as they struggle to win the projects. As a result, major projects would be awarded to foreign contractors rather than to local contractors. However, the local government can suggest that the firm be subbing the projects to local contractors when awarded to any foreign contractor.

On the other hand, the other key challenges assessed for local contractors in the Malaysian construction industry to compete with local and foreign contractors towards globalisation and liberalisation in Malaysia are that they struggle to build their reputation. Local construction companies in the rural area, which are new and small firms, are still not sufficiently competitive to compete for private projects, which a large company with a good reputation usually wins. Large firms have strong reputations that can help them secure more projects, but new or smaller firms have to struggle to build up their reputation to win the projects.

Constructions companies have to show their good track record on completed projects to keep their company's good reputation. Company reputation is one of the most important contributors to their success. Large contractors who have good experience and have built their reputation in the local construction industry will enhance their competitive advantage. New firms can take measures to build their reputation by providing high-quality products and services, hiring experienced and educated employees, and quality management within an organisation. The importance of build up their reputation for the contractors is considered when selecting a contractor in bidding new projects and bringing contractors with more advantages in competition.

6.0 Conclusion & Recommendations

In assessing the key challenges for local contractors in the Malaysian construction industry to compete with local and foreign contractors towards globalisation and liberalisation in Malaysia, there are three key challenges, which are changes in the economic situation have strong implications on the survival of firms, local contractors have to struggle to win the projects competing with foreign contractors and new firms have to struggle to build their reputation.

As explained on the currency exchange rate, which is also the driver of competitiveness, changes in the economic situation have strong implications on the survival of firms. The local contractors might suffer in getting the projects due to financial problems and could lose to the foreign contractors with strong financial resources. The local contractors still have opportunities to venturing overseas according to high intensity in the local construction market. Still, there are many matters to be taken as it is a big risk to the local contractors who never ventured into overseas projects. They have to develop their strategies in securing international projects and choose the right entry mode, entry timing and entry location.

Local contractors have to struggle to win the projects while competing with foreign contractors, as foreign contractors working in the Malaysian construction industry have many years of experience in Malaysia, many consecutive years in Malaysia, high number of countries they are working outside of Malaysia, big number of projects, diversity of projects, and good ranking in Engineering News Record (ENR). In future research, foreign contractors working in other Asian countries, Far East countries, and outside the Far East should be identified. These contractors might work in the Malaysian construction industry when the Malaysian government signs up a new free trade agreement (FTA).

Lastly, new firms struggling to build their reputation are also a challenge for local contractors in the Malaysian construction industry to compete with other local and foreign contractors. Firm reputation is the most important contributor to their success in the local construction market. When tendering for the construction projects, the clients are looking at the lower price offered by the contractors and their reputation in completing previous projects. Obviously, these are the challenges to the new firms because they might not have any records or still build up their reputation in the local construction market.

Therefore, it is recommended that the assessment of the challenges for the local contractors to compete with other local and foreign contractors in the Malaysian towards globalisation and liberalisation could strengthen up their competitive strategies. Although

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