

A Review of the Business Management Capability and Adaptability among Malaysian Contractors in the SCORE Program

Natasha Dzulkalnine^{1*}, Zalina Mat², Mhd Jumain Mapplati³, Norfadzilah Abd. Razak⁴
Syarifah Mastura Syed Abu Bakar⁵

^{1,4,5}Faculty of Business and Management, UiTM Puncak Alam, 42300, Puncak Alam, Selangor, Malaysia

²Construction Industry Development Board (CIDB) Malaysia, 53000, Kuala Lumpur, Malaysia

³Construction Research Institute of Malaysia (CREAM), Sunway Putra Tower, Jalan Putra, Kuala Lumpur

*natashad@uitm.edu.my, zalina@cidb.gov.my, jumain@cream.my, norfadzilah0438@uitm.edu.my,
syarifahmastura@uitm.edu.my

Abstract: The selection of contractors for the project is one of the important tasks faced by the client such as developers and government agencies. To ensure that the client has selected a reliable contractor which has a good previous record, the Construction Industry Development Board (CIDB) Malaysia has established one program named SCORE by assessing seven (7) scopes of assessment which are business performance, financial capability, technical capability, project management, procurement management, best practices, and management ability. Thus, this study was done to assess the level of capability and adaptability of Malaysian contractors in the business management aspect (Scope 1). This study adopted a mixed methodology involving quantitative through secondary data and qualitative research methods through interviews. The data collected for this study is through secondary data from CIDB'S database which cover from the year 2017 until 2021. Besides that, a series of interview sessions were done to find out further suggestions for the improvement of Malaysian contractors. The findings have shown that business performance among Malaysian contractors is one of the lowest scores as compared to other scopes. Thus, this study has proposed several suggestions to increase the performance of Malaysian contractors, especially in business performance such as holding awareness programs and coaching programs.

Keywords: *Malaysian Contractor, Contractor's Capability, Business Performance, Financial Management, SCORE, assessment, construction sector.*

1. Introduction and Background

The construction industry has been known as one of the demeaning sectors related to 3D (Dirty, Dangerous and Difficult) causing some major projects to fall behind schedule (Bernama, 2021). Although various issues were highlighted in the construction sector, the construction sector continued to perform better in the fourth quarter of 2022 with a growth of 15.7% while overall 2022 posted a rebound of 8.8% after two years in the declining trend due to the COVID-19 pandemic (Department of Statistics Malaysia (DOSM), 2023). Thus, the quality of contractors in construction projects is important to ensure the construction sector can maintain the contribution towards the Growth Domestic Product (GDP) of Malaysia. The contractor evaluation program is necessary to ensure that every work done by the contractor meets the criteria set. In addition, it makes it easier for the client, project owner, and developer to choose the best and most competent contractor for a project. It can reduce the risk of the construction project not being completed, the time for the completion of the project not being met, the quality of the building not meeting the criteria, and various other risks. Besides that, assessment can improve the contractor management process by the project team and contractor evaluation allows a job done by the contractor to be evaluated based on the quality of the work. Furthermore, it helps to improve the quality of contractors. Through the contractor evaluation program, the contractor can see the weaknesses that need to be improved for each evaluation scope.

Therefore, indirectly the overall quality of the company can be improved from various angles. The latest study by Alnsour et al. (2023) has focused on the environmental dimension, economic dimension and social dimension. The study also added other two factors which are lean manufacturing and culture. However, this study will be focusing on the business aspects of the contractor in measuring their capabilities in performing construction projects. The Contractor Capability and Capability Assessment Program (SCORE) is a specific program developed by CIDB in collaboration with SME Corp to measure the capabilities of local and foreign contractors in Malaysia to enhance the image of the construction industry in line with the Construction

Industry Transformation Program (CITP) 2016-2020 which in line with the core of 'Improving Quality, Safety, and Professionalism in the Construction Industry'. SCORE-CIDB is implemented on local contractors through analysis of the answers given by contractors to the seven parameters set (CIDB, 2018). The seven parameters are:

- Business Performance
- Financial Capability
- Technical Capability
- Project management
- Procurement Management
- Best Practices
- Management Ability

Each parameter is evaluated with a maximum score of 30 with a total of 210 marks. The results of the score evaluation according to the percentage will be classified according to the stars starting from 0 stars up to 5 stars. Details of stars and percentage marks are in Table 1.

Table 1: Star Rating According to Marks

Star	Marks (%)
0 ★	0-10
★ ★	11-30
★ ★ ★	31-50
★ ★ ★ ★	51-70
★ ★ ★ ★ ★	71-84 (min marks: 10/30)
★ ★ ★ ★ ★ ★	85-100 (min marks: 15/30)

As of September 2021, a total of 125,485 contractors have been registered with the Construction Industry Development Board (CIDB) Malaysia as shown in Table 2. Based on the analysis that has been carried out by CIDB, the number of SCORE participants is still low when compared to the total number of contractor registrations. In comparison, only 7,308 contractors participated in SCORE, making the percentage only 5.82%. This percentage can be categorized as low participation and lack of support from the industry.

Table 2: Total Number of Contractor's Registration, 2021

State	No. of Contractor's Registration	No. of SCORE Application
Johor	12,902	876
Kedah	7,495	342
Kelantan	7,143	422
Melaka	3,928	229
Negeri Sembilan	5,625	358
Pahang	6,907	335
Perak	8,942	324
Perlis	1,754	58
Pulau Pinang	6,200	296
Sabah	12,934	431

State	No. of Contractor's Registration	No. of SCORE Application
Sarawak	9,407	456
Selangor	21,975	1872
Terengganu	7,029	330
WP Kuala Lumpur	12,541	930
WP Labuan	488	37
WP Putrajaya	215	12
JUMLAH	125,485	7308

Source: (Construction Industry Development Board (CIDB), 2022).

Based on the study done by CIDB in 2021, the SCORE application shows a level of decrease starting from 2019 until 2021. The significant decrease is in 2021 with a percentage decrease of 10.09%. The decrease in the percentage of SCORE applications is due to the assessment renewal period which is carried out every two years when compared to the assessment renewal period which is carried out once a year in 2017 and 2018 as shown in Table 3.

Table 3: Percentage of Score Application (2017- 2021)

Year	Percentage of SCORE Application
2017	29.84%
2018	30.98%
2019	13.97%
2020	11.45%
2021	10.09%

Therefore, a study on SCORE analysis shall be conducted to find out the level of business performance amongst the contractor and be able to suggest some improvements to improve the quality of contractors through the identification of the scope that needs to be improved. The findings from this analysis could benefit the industry and indirectly can increase the capability of Malaysian contractors, especially in the business management aspect.

2. Literature Review

The determination of project success is through the ability to fulfill the targets such as meeting deadlines, within expenditure budget, and quality of work done. Thus, it is important to select a contractor who has the competency to deliver results that are in accordance with the client's expectations. Most of the previous researchers highlighted various factors of a contractor's capability. A similar scope in measuring contractor's performance is the study done by Arof et al. (2018) highlighted seven (7) factors which are quality performance, time performance, cost performance, environmental performance, health and safety performance, productivity performance and human resource performance. It was found that human resource performance is the most important criterion in assessing a contractor's performance. Shukery et al. (2018) have adopted Analytic Hierarchy Process (AHP) method to determine a Flexible Performance-Based Contractor Selection System (FPCSS). The findings have shown that the previous project work standard is the main factor to be selected followed by the inability to execute contracts satisfactorily or comply with the deadline. The indices of potential performance have shown that expertise.

In related project types and labor, adequacy was also the main reason to be selected for the project. Hatush & Skitmore (1997) in their study have done interview sessions to identify the factors of contractor selection in the tender process and criteria that are considered during bid evaluation. The findings have found out the main factors to be selected in the prequalification process are technical resources and references. This factor involved several criteria which are financial capability, previous record employees, professional skills, main plant and equipment and many more. This contradicts the study done by Banaitiene & Banaitis (2006) which has listed out 15 weightage of contractor evaluation criteria which are:

- Bid price
- Legal Activity
- Adequacy of contractor
- Insurance
- Claims and contractual dispute
- Failed contracts
- Bankruptcy possibilities
- Competitiveness
- Clients' appreciation
- Quality assurance
- Qualification of technical personnel
- Experience
- Type and size of past projects
- Environmental protection
- Safety and health at work

The study found that bid price is the main factor contributing to contractor's selection followed by claims and contractual dispute and safety and health at work. The least factor is experience and the type and size of past projects. Construction contractor selection is frequently done during the tendering process. Although a client has the option to award a contract to the company that offers the lowest price and the shortest construction cycles, tendering typically prevents a precise evaluation of a tenderer. The price is becoming a more and more common deciding factor when selecting a tender in procedures. Most customers used this strategy in recent years (Lee et al., 2014). Watt et al. (2010) identified nine (9) tender evaluation criteria using 222 respondents. From the survey done, the majority of the clients agree that past project performance is the main criterion in the tender evaluation followed by technical expertise. However, organizational experience and company standing were the least criteria in the tender evaluation. Project management expertise also plays an important role in the tender evaluation criteria. Rashvand et al. (2015) have argued that the selection of contractors shall be based on the financial stability, technical ability, and management capability of contractors. The organization claims that the prequalification process was complicated by the inability to differentiate between contractors due to high uncertainty (poor discriminatory criteria); that is, even though only a small number of contracting firms were acknowledged as eligible to be awarded the contract, it is very challenging to formulate a decision model that allowed optimal selection among these firms.

All successful businesses had strong financial standing and had the necessary tools and resources (technical skills) to finish the mission. On the other hand, since these were the only outcome criteria taken into consideration and the chosen candidates had almost identical schedules and cost overruns from their prior projects, it was difficult to determine whether the overruns were their fault or the result of outside, uncontrollable causes. As a result, the assessment of management capability was not given serious consideration. Therefore, the choice of the final contractor was made solely based on the lowest tender bid price. The final review of the contractor's performance after the project was finished, in the director's opinion, was insufficient and was not a suitable method of evaluation. He believed that what was required was more precise, "real-time," information that could be used for quick review. Construction contractors are categorized based on their performance using the ELECTRE TRI technique, according to a proposal made by De Araujo et al. (2017). As a result of the model, contractors are categorized into three categories which are good contractors, moderate contractors, and bad contractors. The definition of a good contractor is one who meets the needs of the business and performs well on evaluations. In this manner, the company ought to hire

them for the next initiatives. While moderate contractors can attend firms as expected, they still need to fix a few performance-related issues.

The business should let them know about the issues and only approve fresh contracts once the performance of the contractors has improved. However, bad contractors perform poorly in performance reviews, and the construction firm should avoid using them for any further projects. Cash in hand, product quality offered and price offered are the important factors in contractor's selection in Malaysian public construction projects. On the other hand, the least top ten criteria were found to be quality control, familiarity with work location, staff qualification, financial guarantee, technology and work method, staff experience in industry, equipment, tools and machinery, company management system, technical manpower and quality management system (Rashid et al., 2018). Idrus et al. (2011) adopted the severity index and ranked the criteria for selecting the main contractor using a sample of 150 respondents. From the survey conducted, it was found that track performance, financial capacity and technical capacity are the main criteria in selecting the main contractor in the construction projects.

The client can learn about a contractor's past experiences by looking through them, but whether or not these projects were successfully completed can only be determined by looking into the contractor's performance. Since taking on projects is the construction industry's major line of work, the project's quality, cost, and time objectives become crucial because they are the primary determinants of customer satisfaction. This finding was supported by Shukery et al. (2016) that past performance is important in the contractor's selection. Quality of work in a past project, frequency of previous failure and percentage of previous work completed are the main elements in the past performance criteria. Dave et al. (2017) have listed five (5) main criteria for contractor's re-qualification and bid evaluation which are financial soundness, technical ability, management capability, health and safety and reputation. Each of these main criteria has its own sub-criteria as shown in Table 5.

Table 5: Main Criteria and Sub-Criteria for Contractor's Pre-Qualification and Bid Evaluation

Financial Soundness	Financial stability Credit rating Banking arrangements and bonding Financial status
Technical ability	Experience Plant and equipment Personnel Ability
Management capability	Past performance and quality Project management organization Experience of technical personnel Management knowledge
Health and Safety	Safety Experience modification rating OSHA Incident rate Management safety accountability
Reputation	Past failures Length of time in business Past owner/contractor relationship Other relationships

The study done by Okereke et al. (2022) has shown that three important factors in contractor selection are managerial capability and competent supervisory staff, technical ability and financial soundness. Another important factor in choosing contractors for civil engineering projects is the bid price. In some building

markets of some countries, the practice of basing contract awards or contractor selection on bid prices, particularly the lowest bid price, is still in use. The procedure hasn't produced the desired outcome in terms of ensuring that such a contractor can deliver. The study also found out the benefits of contractors' selection in the tender. The findings have elaborated that the selection of a contractor enables the client or project owner to select contractors who are performers for the project, facilitate the achievement of project success and the objectives within the scheduled time and cost; and minimize project risks. Most of the previous research touch on past performance, technical performance and overall project success. This is supported by a study done by Doloi et al. (2011) found that technical planning and controlling expertise of the contractor is key to achieving success on projects. Lack of literature has discussed the contractor's business performance. Thus, this study highlighted the aspect of business performance affecting the contractor's capability in construction projects.

3. Research Methodology

This study uses mixed methods, quantitative and qualitative methods combined as a data analysis medium. Data collection involved secondary data from the CIDB database and face-to-face interviews with the industry. The research method used is quantitative through analysis of the evaluation scope and CIDB SCORE elements.

Data Collection Methods

Secondary Data from the CIDB Database: Secondary data is data that refer to reference material. For example, books from the library, the internet, and so on. For this study, secondary data is data received from the CIDB database including information on contractors participating in SCORE, year of participation, stars obtained, total marks for Scope 1, Scope 2, Scope 3, Scope 4, Scope 5, Scope 6, and Scope 7, average SCORE marks and percentage of SCORE marks.

Face-to-Face Interview: Face-to-face interviews were conducted with five respondents to obtain appropriate views and suggestions regarding the improvement of the SCORE program. A large number of articles, book chapters, and books recommend coaching and suggest anywhere from 5 to 50 participants as sufficient (Morse, 2000).

4. Results

This section presents sets of results of applicants of SCORE in Scope 1 (Business Performance) using several statistical methods which are descriptive statistics, regression analysis, Analysis of Variance (ANOVA), and gap analysis. Referring to Table 4 shows the comparative percentage of contractor registration and SCORE registration. In comparison, 2018 showed the highest participation percentage of 30.98% followed by 2017 at 29.84%. However, there is a decrease starting from 2019 until 2021 where each only gets a participation percentage of 13.97%, 11.45% and 10.09%.

Table 4: Percentage Comparison of Contractor Registration and SCORE Registration

Year	Grade	Total Contractor's Registration	SCORE Participation	Difference Percentage (%)
2017	G2	3,966	1381	34.82
	G3	3,664	461	12.58
	G4	1,019	311	30.52
	G5	1,538	199	12.94
	G6	481	129	26.82
	G7	2,103	1290	61.34
	TOTAL		12,771	3771

Year	Grade	Total Contractor's Registration	SCORE Participation	Difference Percentage (%)
2018	G2	10,451	2712	25.95
	G3	7,734	993	12.84
	G4	2,277	533	23.41
	G5	872	413	47.36
	G6	3,098	256	8.26
	G7	4,281	2914	68.07
	TOTAL		28,713	7821
2019	G2	22,939	2885	12.58
	G3	15,861	1030	6.49
	G4	4,971	526	10.58
	G5	5,999	413	6.88
	G6	2,059	259	12.58
	G7	8,603	2985	34.70
	TOTAL		60,432	8098
2020	G2	23,566	3388	14.38
	G3	17,664	984	5.57
	G4	5,289	578	10.93
	G5	6,491	403	6.21
	G6	1,989	240	12.07
	G7	8,776	1715	19.54
	TOTAL		63,775	7308
2021 (until September)	G2	24,178	2930	12.12
	G3	18,327	888	4.85
	G4	5,384	467	8.67
	G5	6,518	353	5.42
	G6	2,000	227	11.35
	G7	8,821	1598	18.12
	TOTAL		65,228	6463

Descriptive Statistics: Descriptive statistics are analyzing data by percentage, and frequency and by using Measure of Central Tendency (MCT) - mean mode and median. In descriptive statistics, the type of data analysis often involves bivariate analysis, which is by using only one variable. For this study, most analyses use the mean to find out the average of the data. The formula of the average is as follows:

$$\bar{x} = \frac{\sum fx}{n}$$

Where;

\bar{x} = mean

f = frequency of each class

x = mid-interval value of each class

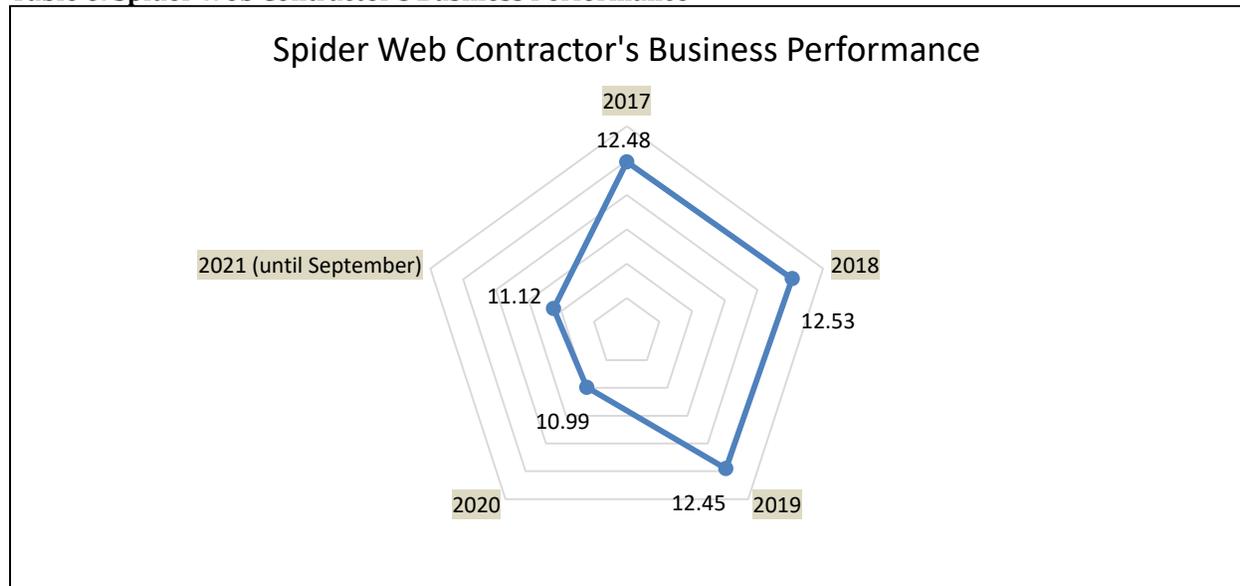
n = total frequency

Table 5: Average of Business Performance

Year	2017	2018	2019	2020	2021 (until September)	Average
Scope 1 (Business Performance)	12.48	12.53	12.45	10.99	11.12	11.91

Spider Chart Analysis: A Spider chart is a graphical method of displaying multivariate data in the form of a two-dimensional chart of three or more quantitative variables represented on an axis starting from the same point. Spider charts are also known as web charts, radar charts, star charts, star plots, spider web charts, irregular polygons, polar charts or Kiviati diagrams. Spider charts are useful for seeing which variables score high or low in a data set, making them ideal for displaying performance. For this study, a spider chart was developed using the average for Business Performance for the years 2017 until September 2021.

Table 6: Spider Web Contractor's Business Performance



Based on Table 5 and Table 6, the total average of the contractor's business performance achieved in the SCORE program is 11.91 out of 30 marks. The highest average score for contractors' business performance is in 2018 followed by 2017 and 2019 with 12.48 and 12.45 average scores, respectively. The lowest average score is in 2020 followed by 2021 with 10.99 and 11.12 average scores respectively.

Gap Analysis: Gap analysis is a process used to compare current performance with expected and expected performance. This analysis can identify the current situation by measuring several factors. Contractor grade, stars earned and scope of evaluation are factors used in this analysis. Several suggestions for improvement can be identified when a gap analysis is conducted. For the entire SCORE participation data of 33,461, only 3479 re-participations, which is a percentage of 10.40%. The re-entry details are as Table 7.

Table 7: Re-participations in the SCORE Program

Participation	Number of Participation
2 times participation	3420
3 times participation	39
4 times participation	20
TOTAL	3479

a) Distribution of Contractors according to Grade Changes: In gap analysis, changes in contractor grade are studied before and after evaluation. A negative change means there is an increase in grades after the assessment. A positive change means there is a drop in grades after the assessment. A zero-change means there is no difference in grades before and after the assessment. Table 8 shows the contractor's gap analysis. Throughout the year 2017 until September 2021, the majority of contractors do not have any gap from the previous contractor grade with a percentage of 29.92%. However, the second highest percentage (11.64%) recorded a significant difference of negative five (-5) for contractor grades. The third highest percentage (11.38%) recorded a positive percentage of five (+5) for the contractor grade. Cumulatively, the positive difference (35.2%) exceeds the negative difference (34.87) by 0.33%.

Table 8: Contractor's Gap Analysis

Contractor's Gap	Total Difference	Difference (%)	Percentage	Cumulative
-6	3	0.086		
-5	405	11.64		
-4	190	5.46		34.87
-3	168	4.83		
-2	184	5.29		
-1	263	7.56		
0	1041	29.92		29.92
1	267	7.67		
2	186	5.35		
3	172	4.94		35.2
4	199	5.72		
5	396	11.38		
6	5	0.14		
TOTAL	3479	100.00		

b) Distribution of Contractors According to Star Changes: Table 9 shows the star gap obtained from 2017 until September 2021. The highest percentage of no star difference is 40.33% followed by a difference of negative one (-1) of 24.17%. The third highest percentage is a positive one (+1) star difference of 23.80%. Cumulatively, the negative disparity (29.981%) is higher than the positive disparity (29.639%) by 0.349%.

Table 9: Gap Analysis for Star Obtained

Star Difference	Total Difference	Difference Percentage	Cumulative
-4	1	0.029	
-3	9	0.26	
-2	194	5.58	29.981
-1	841	24.17	
0	1403	40.33	40.33
1	828	23.80	
2	186	5.35	29.639
3	16	0.46	

4	1	0.029
TOTAL	3479	100.00

Regression Analysis: Regression analysis is one of the analyzes used to find out the relationship between the response variable or commonly referred to as the dependent variable against one or more predictor variables or independent variables. The analysis used is ordinal regression where the awarding of stars is identified through score factors, bumiputra status, and contractor grade. In this analysis, 0 and 1 stars are labeled as low ratings, 2 and 3 stars are categorized as medium ratings, and high ratings if the contractor obtains 4 and 5 stars. Awarding stars to contractors is analyzed according to score, bumiputra status, and contractor grade. The analysis used is ordinal regression, giving stars identified through score factors, bumiputra status, and contractor grade. In this analysis, 0 and 1 stars are labeled as low ratings, 2 and 3 stars are categorized as medium ratings, and high ratings if the contractor obtains 4 and 5 stars. Based on the analysis conducted as shown in Table 10, business performance factors, financial capability, technical capability, project management, procurement management, best practices, and management capability play an important role in determining the star. For each unit increase in business performance score, the probability of getting a better rating is 1.81 (81% increased chance).

Table 10: Ordinal Regression Output for Business Performance

Factor	Coefficient	Odds Ratio	95% Confidence Interval Odds Ratio
Business Performance (SCOPE 1)	0.5910	1.8058	(1.6724,1.9616)

Analysis of Variance (ANOVA): An ANOVA test is a type of statistical test used to determine if there is a statistically significant difference between two or more categorical groups by testing for differences of means using a variance. Analysts use the ANOVA test to determine the influence that independent variables have on the dependent variable in a regression study.

Comparison of Business Performance by the Star: Each score is compared according to the stars earned by the contractor on average. Comparisons are made to determine whether there is a significant difference or not. ANOVA analysis and Tukey-HSD test were used for comparison purposes. Table 11 shows a comparison of business performance scores between stars. On average, contractors with low stars have low business performance scores. There is a significant difference in the business performance score for all the stars except those who get 4 and 5 stars. The average score difference is shown in Table 11.

Table 11: Comparison of Business Performance Scores between Stars

Star	Difference	95% Confidence Interval Odds Ratio	p-value
1 vs 0	5.3246	(3.643, 7.005)	0.000
2 vs 0	10.6202	(8.951, 12.288)	0.000
3 vs 0	15.873	(14.200, 17.547)	0.000
4 vs 0	22.007	(20.046, 23.969)	0.000
5 vs 0	24.053	(21.465, 26.641)	0.000
2 vs 1	5.295	(5.025, 5.565)	0.000
3 vs 1	10.549	(10.251, 10.846)	0.000
4 vs 1	16.683	(15.617, 17.748)	0.000
5 vs 1	18.728	(16.732, 20.725)	0.000
3 vs 2	5.253	(5.036, 5.471)	0.000
4 vs 2	11.387	(10.341, 12.433)	0.000
5 vs 2	13.433	(11.447, 15.419)	0.000
4 vs 3	6.133	(5.080, 7.187)	0.000
5 vs 3	8.179	(6.189, 10.169)	0.000
5 vs 4	2.045	(-0.191, 4.283)	0.096

B) Score comparison of Business Performance by Year: Scores for business performance were compared by year. The analysis used was the analysis of variance and the Tukey HSD test. If the p-value is less than 0.05, it means that there is a significant difference in average scores between the years being compared. The results are as in Table 12. For the business performance score, there is no significant difference between 2017 and 2018, 2017 and 2019, and 2018 and 2019. While there is a significant difference in business performance between 2020 and 2017, 2018 and 2019 that is the average business performance score in 2020 is low compared to the years in other years.

Table 12: Business Performance Score According to Year

Year	Difference	95% Confidence Interval	p-value
Scope 1 (Business Performance)			
2018 vs 2017	0.0320	(-0.304, 0.368)	0.994
2019 vs 2017	0.051	(-0.386, 0.284)	0.979
2020 vs 2017	-1.041	(-1.500, -0.582)	0.000
2019 vs 2018	0.083	(-0.355, 0.188)	0.860
2020 vs 2018	-1.073	(-1.488, -0.658)	0.000
2020 vs 2019	-0.990	(-1.404, -0.576)	0.000

Face-to-Face Interview Findings: The interview session was done with five (5) respondents from the industry objectively to find further suggestions to improve the business performance among Malaysian contractors. Overall, most of the respondents have suggested six (6) main elements that CIDB should consider which are coordination, Implementation, Awareness, Separation, Addition, and Incentive. Table 13 shows the details of the suggestions mentioned by the respondents.

Table 13: Suggestions from Face-to-Face Interview Session

Element	Suggestion
coordination	Coordination between CIDB and Contractor Compliance Check (CCA)
Implementation	Project owner validation of work performance
	The implementation of SCORE needs to be more clear, focused and strong
	Obliging subcontractors to have a SCORE certificate
	Tighten the implementation of SCORE to foreign contractors by making it mandatory to get 4 stars and above Take into account technical and financial strength
Awareness	Promotion and dissemination of information about the importance of SCORE
Separation	Separate the questions according to the contractor's grade and trend. G7 contractors are classified according to procurement value
Addition	Considering the green card as one of the Best Practices
Incentive	Free training for contractors on how to answer SCORE questions
	More worthwhile incentives to contractors (eg cheaper BIM licenses)

5. Discussion and Conclusion

Discussion: Based on the analysis, the SCORE application shows a decrease from 2019 until 2021. The significant decrease is in 2021 with a percentage of 10.09%. Overall, the average business performance from 2017 until September 2021 is 11.91 out of 30 scores. This finding shows that the contractors are still lacking in the aspect of business performance. A gap analysis was conducted to compare the grade of contractors and stars obtained in the SCORE program. Most of the contractors increase their grade of the contractor and it shows that the Malaysian contractor is moving forward to the positive side and getting ready to become a big contractor. However, although there is increasing the grade of contractors, the star obtained mostly did not change significantly. It may be because of the complexity of questions in the SCORE program and the inadequacy of documents requires. One of the programs that can be created to increase business performance is marketing strategy training. This course is suitable for small and medium contractors on how to maintain business through marketing. For this marketing strategy exercise, CIDB can include elements such as developing a strategic framework for business development, identifying risks through SWOT and PESTEL methods, identifying demand trends, digital marketing methods and marketing research. Besides that, a course related to customer relationship management can also be created. Customers are the most important factor in the survival of a business. Feedback received from customers is an important point in improving the quality and performance of the business. A customer management course should include the concept of quality customer service, effective communication and interpersonal relationships, quality counter and telephone service, customer feedback time period and medium of obtaining customer feedback.

Conclusion: The selection of a competent contractor is very important to appoint in the projects. Seven scopes in the SCORE program have highlighted the important elements that should be considered in the selection which are business performance, Financial Capability, Technical Capability, Project management, Procurement Management, Best Practices, and Management Ability. Thus, based on the analysis conducted, several recommendations have been discussed which may increase the level of capability and adaptability of Malaysian contractors, especially in the business performance area. Some of the recommendations made are to increase the level of awareness among contractors through campaigns and promotions. Besides that, improvement in the SCORE question should suit the grade of the contractor and the nature of the contractor's business.

References

- Alnsour, M., Zeidan, A., Al Quwaider, B., Alkubaisi, A., Alregeb, R. & Bader, M. (2023). Developing sustainability assessment indicators for measuring contractor's performance during the construction phase of construction projects in Jordan. *Asian Journal of Civil Engineering*, 24(1), 245-266. <https://doi.org/10.1007/s42107-022-00500-5>
- Arof, K. Z. M., Ismail, S. & Saleh, A. L. (2018). Critical success factors of contractor's performance appraisal system in the Malaysian construction industry. *Indian Journal of Public Health Research and Development*, 9(11), 1197-1206. <https://doi.org/10.5958/0976-5506.2018.01622.4>
- Banaitiene, N. & Banaitis, A. (2006). Analysis of criteria for contractors' qualification evaluation. *Technological and Economic Development of Economy*, 12(4), 276-282. <https://doi.org/10.3846/13928619.2006.9637754>
- Bernama. (2021, September 11). Malaysia desperately needs more 3D workers in the construction sector. *New Straits Times*, 1. <https://api.nst.com.my/news/nation/2021/09/726325/malaysia-desperately-needs-more-3d-workers-construction-sector>
- CIDB. (2018). Panduan Program Penilaian Keupayaan & Kemampuan Kontraktor (SCORE). In *CIBD & SME Corp.*
- Construction Industry Development Board (CIDB). (2022). Total Number of Contractors. CIDB. <https://cims.cidb.gov.my/smis/regcontractor/index.vbhtml>
- Dave, R., Parmar, K., Patel, B. & Prajapati, R. (2017). The Criteria for Contractors' Selection and Bid Evaluation & Factors Affecting Bidding Strategy in Construction. *International Journal of Scientific Development and Research*, 2(4), 488-491.
- De Araujo, M. C. B., Alencar, L. H. & Mota, C. M. M. (2017). Model for contractor performance evaluation in the construction industry. 2016 IEEE International Conference on Systems, Man, and Cybernetics, SMC

- 2016 - Conference Proceedings, October 2631–2635. <https://doi.org/10.1109/SMC.2016.7844636>
- Department of Statistics Malaysia (DOSM). (2023). QUARTERLY CONSTRUCTION STATISTICS, FOURTH QUARTER 2022 (Issue February). https://www.dosm.gov.my/v1/index.php?r=column/cthemByCat&cat=77&bul_id=U2JlOStjQWluQitxSnIEYTZ1WFZadz09&menu_id=OEY5SWtFSVVFVUpmUXEyaHppMVhEdz09
- Doloi, H., Iyer, K. C. & Sawhney, A. (2011). Structural equation model for assessing impacts of contractor's performance on project success. *International Journal of Project Management*, 29(6), 687–695. <https://doi.org/10.1016/j.ijproman.2010.05.007>
- Hatush, Z. & Skitmore, M. (1997). Criteria for contractor selection. *Construction Management and Economics*, 15(1), 19–38. <https://doi.org/10.1080/014461997373088>
- Idrus, A., Sodangi, M. & Amran, M. A. (2011). Decision criteria for selecting main contractors in Malaysia. *Research Journal of Applied Sciences, Engineering and Technology*, 3(12), 1358–1365.
- Lee, M. R., Ismail, S. & Hussaini, M. (2014). Contractor's Performance for Construction Project: A Review. *Journal of Engineering Research and Applications Wwww.Ijera.Com ISSN*, 4(7), 131–137. www.ijera.com
- Morse, J. M. (2000). Determining Sample Size. In *Qualitative Health Research*, 10(1). Sage Publication Inc. <https://doi.org/10.1177/104973200129118183>
- Okereke, R. A., Pepple, D. I. & Ihekwe, N. M. (2022). Assessment of the major contractors' selection criteria and their impacts on civil engineering construction projects. *ITEGAM- Journal of Engineering and Technology for Industrial Applications (ITEGAM-JETIA)*, 8(36), 4–13. <https://doi.org/10.5935/jetia.v8i36.820>
- Rashid, I., Ismail, S., Mohamed, Z. & Saleh, A. L. (2018). Contractor selection criteria: A study on Malaysian public construction projects. *International Journal of Engineering and Technology(UAE)*, 7(3), 65–70. <https://doi.org/10.14419/ijet.v7i3.25.17471>
- Rashvand, P., Majid, M. Z. A. & Pinto, J. K. (2015). Contractor management performance evaluation model at the prequalification stage. *Expert Systems with Applications*, 42(12), 5087–5101. <https://doi.org/10.1016/j.eswa.2015.02.043>
- Shukery, N. M., Amirudin, R., Rahman, N. A., Ariffin, H. L. T. & Mahmud, S. H. (2018). Selection of contractor: A flexible performance-based approach. *International Journal of Engineering and Technology(UAE)*, 7(3.21 Special Issue 21), 338–344. <https://doi.org/10.14419/ijet.v7i2.29.13649>
- Shukery, N. M., Amirudin, R. & Sofield, T. (2016). Level of importance of performance-based tender evaluation indicators. *Indian Journal of Science and Technology*, 9(34). <https://doi.org/10.17485/ijst/2016/v9i34/100842>
- Watt, D. J., Kayis, B. & Willey, K. (2010). The relative importance of tender evaluation and contractor selection criteria. *International Journal of Project Management*, 28(1), 51–60. <https://doi.org/10.1016/j.ijproman.2009.04.003>