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A Study of the Competitive Advantages of Construction Firms in Hanoi

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Abstract
Porter (1980) [11] argued that competition is about gaining market shares. The nature of competition is to find profits that are higher than the average profit that the enterprise currently has. The result of the competitive process is that profits are averaged in the industry with a deep improvement, leading to a decrease in prices. This study was conducted with the aim of identifying, evaluating, and measuring the component attributes of competitive advantage through customer responsiveness and price for construction firms in Hanoi. After interviewing experts, the questionnaire was sent to 150 construction firms in Hanoi and collected within two months. However, only 130 votes met the requirements and were included in the analysis. The results of descriptive statistics, Cronbach's alpha analysis, and EFA have identified and measured five component attributes of competitive advantage through customer responsiveness and four component attributes of competitive advantage through price, which are considered competitive advantages of construction firms in Hanoi. Based on the research results, we propose some recommendations to improve the capacity and competitive advantage of construction firms in Hanoi in the coming years.

Keywords: Competitive Advantage, Business Performance, Customer Responsiveness, Price, Construction Firms

JEL Codes: D49, M19, M21

1. Introduction
Porter (1980) [11] argued that competition is about gaining market shares. The nature of competition is to find profits that are higher than the average profit that the enterprise currently has. The result of the competitive process is that profits are averaged in the industry with a deep improvement, leading to a decrease in prices.
Competitive advantage is the emphasis of businesses in a highly competitive environment in order to outperform rivals and support their continued existence and growth (Porter, 1985) [12].
Competitive advantage is what makes an enterprise stand out, while other competitors don't. As a result, enterprises will have better results compared to other enterprises. This is a must-have factor to help the enterprise succeed and survive for a long time, which is different from competitors. Competitive advantages that exist in the enterprise will bring benefits such as cost advantage, bringing benefits far beyond competitive products. As can be seen, this factor helps the enterprise provide high value to its customers. From there, it will be generating greater profits for the enterprise itself.
Creating a competitive advantage is the key to the success of any firm (Laseter & Gillis, 2012) [9]. Maintaining a competitive advantage is a prerequisite for firm success. If a firm prospers in its industry, it must create a competitive advantage over its competitors.
Vietnam's construction firms are an area that annually uses more than 70% of the total investment capital of the whole society (about 64 billion USD in 2020), of which labor costs and construction material costs are the largest expenses, accounting for about 20% (about 14 billion USD) and 45–50% (about 28 billion USD); rated interest rates range from 5%–10% (equivalent to 4 billion USD) (Ministry of Construction, 2021) [10].
The construction industry is a spearhead economic sector, directly creating the initial material and technical foundations for the development of the national economy. This is also a multi-sector general economic sector, including architectural planning, urban development, technical infrastructure, construction investment activities, real estate trading, and building materials. The industry has an average growth rate; the period 2016–2020 has a growth rate of 8.5%–8.7%, equivalent to about 5.2 billion USD per year. In 2020, the added value of the construction industry will be about 14%, or about 0.84% of GDP, or about 1.6 billion USD. In which the construction and installation sector accounts for about 6.5%, the real estate sector accounts for 4.5%, and the remaining 3.5% is the construction materials industry, investment consulting, water supply, and drainage.

Each field of the construction industry has its own position and role; however, the field of construction business development is the one that has the largest role and is most associated with the goal of creating technical and material foundations for the construction industry. economy. The reason is that Vietnamese construction enterprises are the main apparatus consuming the total annual social investment capital of the whole country to build material and technical foundations for the economy. Therefore, the competitive advantage through customer responsiveness and the price of construction firms should be evaluated and analyzed.

2. Literature Review

2.1 Competitive Advantage

When an enterprise has something that other competitors do not have, which means it performs better than competitors or can-do things that other competitors cannot or can hardly do, it gains a competitive advantage. A competitive advantage is the value that an enterprise brings to its customers that exceeds the cost of creating it (Porter, 1985) [12].

According to Bharadwaj *et al*. (1993) [2], competitive advantage is the result of implementing a value-creating strategy that is different from that of competitors or implementing the same strategy but better than competitors. This competitive advantage is considered solid if other businesses cannot copy the benefits brought by this strategy.

Prahalad and Hamel (1990) [13] focus more on the resources, capabilities, and capacities of the organizations, such as the origin of competitive advantage, than on the environment, as mentioned in the traditional method.

According to Feurer and Chaharbaghi (1994) [5], quantitative competitiveness is measured by profit, capital mobilization, and cash flow in terms of liquidity. Soliman (1998) [15] adds cost, quality, deliverability, reliability, flexibility, and creativity as factors that build a competitive position.

The competitiveness of a firm is determined by its ability to achieve its goals. These goals are likely to be expressed under a range of specific conditions (Barney, 2002) [1]. The success of that firm depends on having a competitive advantage, which can be measured by both objective and subjective criteria. Objective criteria include return on investment, market share, profit, and sales; subjective criteria include reputation with customers, suppliers, and competitors and the improvement in the quality of provided services (Barney, 2002) [1].

Knowledge is considered a strategic asset with the potential to bring a solid competitive advantage to organizations, and firms gain this competitive advantage through effective activities to build, apply, exploit, and manage intellectual property outcomes (Riahi-Belkaoui, 2003).

Do (2020) [4] uses a qualitative research method to analyze the competitive advantages of Vietnamese seafood enterprises. They include (i) geographical advantages, (ii) labor advantages, (iii) attention and support from the government, and (iv) Advantages of import and export taxes and opportunities to expand the seafood export markets when Vietnam joins the new generation of free trade agreements. Based on the research results, the author affirms that, when seafood enterprises take advantage of their competitive advantages, they will significantly contribute to achieving the set goals.

2.2 Competitive Advantage via Customer Responsiveness

Good customer responsiveness means that the company must be able to identify, understand, and satisfy customer needs better than its competitors. Customer responsiveness is reflected in the fact that, through product innovation, the company provides new products with features and benefits that existing product on the market do not have. This will help customers feel the outstandingness and difference of the product. This is the firm's competitive advantage.

2.3 Competitive Advantage via Price

Construction production is the activity of new construction or renovating, repairing, or modernizing specific works and work items, creating the material and technical foundations of the national economy. Each of these construction works and work items requires experience, appropriate structure, form, and location of construction, which are specifically determined on each design estimate for each individual object. Therefore, the production activities of construction firms are single and individual; expenses for construction and installation of works and structures are not as heterogeneous as industrial products; construction products often have large volumes, great value, and a long completion time; and it is difficult to overcome defects and shortcomings during the formation process. Therefore, the construction firm needs to estimate the selling price of the work or the appropriate bidding price so that the customer understands that it is a low price in the market, in accordance with the quality of the work.

3. Methodology

3.1 Data Collection and Data Processing

Inheriting the results of previous studies and using a qualitative research approach, namely interviews with selected experts, to perform a quantitative research method, we have identified the scales of competitive advantages of construction firms in Hanoi.

Then, we made a questionnaire consisting of nine observation variables on a 5-point Likert scale. Dependent variables are measured from 1 ("absolutely not agree") to 5 ("totally agree"). The collection of data was done through a survey of 150 employees who worked for construction firms in Hanoi for the period 2022–2023, close to this study period. Therefore, their feedback on the competitive advantages of construction firms in Hanoi is considered very appropriate.

From the 150 questionnaires we sent, we received feedback from 140 respondents. After checking the information on the returned questionnaires, we have only 130 questionnaires with full information for data entry and analysis. The size of this sample is consistent with the study of Hair *et al*. (1998) [6], namely n = 5 x m = 5 x 9 = 45. As can be seen, all participants have high-quality knowledge, and this makes the surveys' answers reliable.

Quantitative research methods were carried out with the support of SPSS software, including descriptive statistics, cronbach's alpha analysis, and EFA.

3.2 Build a Scale

Table 1: Scale of competitive advantages of construction firms

Code	Description
Customer responsiveness (CR)	
CR1	Products for construction are always available.
CR2	Products for construction are delivered promptly and on time.
CR3	Complete and committed client support.
CR4	Firms have efficient means for speaking with clients.
CR5	The intermediary wants to sell the firm's products, and the firm has a good relationship with the intermediary.
Price (P)	
P1	The price of construction products at the enterprise is lower than the market.
P2	The price of the enterprise's construction products is consistent with their quality.
P3	Construction firms may reduce prices.
P4	Prices for construction goods generate revenues and cover costs.

4. Research Results

4.1 Descriptive Statistics

Table 2 indicates that the respondents agree with the dependent variables of "the competitive advantages of construction firms in Hanoi" where nine attributes were quite high. All twenty-four attributes were rated at an average of 3.78 or higher.

Table 2: Descriptive analysis of attributes

Code	N	Minimum	Maximum	Mean	Std. Deviation
Customer responsiveness (CR)					
CR1	130	1.00	5.00	3.78	0.909
CR2	130	2.00	5.00	3.89	0.838
CR3	130	1.00	5.00	3.85	0.902
CR4	130	2.00	5.00	3.93	0.908
CR5	130	1.00	5.00	3.96	0.820
Valid N (listwise)	160			**3.88**	
Price (P)					
P1	130	1.00	5.00	3.87	0.918
P2	130	1.00	5.00	3.85	0.864
P3	130	1.00	5.00	3.92	0.940
P4	130	1.00	5.00	3.89	0.883
Valid N (listwise)	130			**3.88**	

4.2 Cronbach's Alpha

The competitive advantages of construction firms in Hanoi have been measured by Cronbach's alpha. The results of testing Cronbach's alpha for attributes are presented in Table 3 below. The results also show that attributes of the dependent variables have Cronbach's alpha coefficients that are greater than 0.6, and the correlation coefficients of all attributes are greater than 0.3. So, all the attributes of the dependent variables are statistically significant (Hoang & Chu, 2008 [8]; Hair *et al*., 2010 [7]).

Table 3: Results of Cronbach's alpha testing of attributes and item-total statistics

Cronbach's Alpha	N of Items
.912	5

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
CR1	15.63	8.963	0.813	0.885
CR2	15.52	9.477	0.782	0.892
CR3	15.56	9.178	0.772	0.894
CR4	15.48	9.135	0.775	0.893
CR5	15.45	9.722	0.746	0.899

Cronbach's Alpha	N of Items
.905	4

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
P1	11.66	5.900	0.758	0.888
P2	11.68	6.096	0.770	0.883
P3	11.62	5.587	0.822	0.864
P4	11.64	5.923	0.797	0.874

4.3 Exploratory Factor Analysis (EFA)

Next, Tables 4, 5, and 6 show that exploratory factor analysis (EFA) was conducted through component analysis and variance.

The results of factor analysis in Table 4 show that KMO is greater than 0.5 but less than 1. Bartlett's testimony shows sig. = 0.000 is less than 0.05, which means variables in the whole are interrelated (Hoang & Chu, 2008 [8]; Hair *et al*., 2010 [7]).

After implementing the rotation matrix, nine components of the competitive advantages of construction firms in Hanoi (including customer responsiveness and price) with a factor load factor greater than 0.5, eigenvalues greater than 1, and the variance explained respectively 74.144% and 77.907% (see Tables 5 and 6). These statistics demonstrate that research data analysis for factor discovery is appropriate. Through the competitive advantages of construction firms in Hanoi and the test of the EFA model, we have identified nine components (Hoang & Chu, 2008; Hair *et al*., 2010) [8, 7].

Table 4: KMO and Bartlett's Test

KMO and Bartlett's Test		
CR		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.889
Bartlett's Test of Sphericity	Approx. Chi-Square	415.092
	Df	10
	Sig.	.000
P		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.831
Bartlett's Test of Sphericity	Approx. Chi-Square	331.682
	Df	6
	Sig.	.000

Table 5: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
CR						
1	3.707	74.144	74.144	3.707	74.144	74.144
2	0.416	8.318	82.462			
3	0.324	6.487	88.948			
4	0.311	6.217	95.165			
5	0.242	4.835	100.000			
P						
1	3.116	77.907	77.907	3.116	77.907	77.907
2	0.396	9.912	87.819			
3	0.255	6.383	94.202			
4	0.232	5.798	100.000			

Table 6: Component Matrix[a]

CR	**Component**
	1
CR1	0.885
CR2	0.865
CR4	0.859
CR3	0.858
CR5	0.838
P	**Component**
	1
P3	0.904
P4	0.890
P2	0.873
P1	0.863

5. Discussion and Implications

Construction firms believe that customer support services and quick product handover are two of their advantages in Hanoi. However, communication channels with customers of construction firms in Hanoi are still quite simple, mainly through websites, sales staff, communication messages, and brands that have not been frequently reminded, leading to a lack of intermediaries committed to selling the firm's products.

Currently, materials for construction and installation of construction works are quite rich and diverse to satisfy domestic and export demand, such as sand, cement, steel, etc. Raw materials are important resources, which account for a high percentage of the cost of construction products and are a competitive advantage in the construction industry in our country. Because of these advantages combined with cheap labor costs, construction firms can sell at a lower price, but the price of construction works has not been assessed as low by construction firms in the market, thereby not yet creating a price advantage for construction products in Hanoi.

Construction firms should strengthen the management of input materials for the production process. For the stage of raw materials for production, the management and digitization of this stage in construction firms are still quite outdated. Most firms have not digitized the quality and reserves of raw material warehouses or yards, so the use process is not yet highly efficient, and resources are still wasted at this stage. In fact, there has been an increase in production costs due to the lack of digitization of raw materials and lax preservation. With the characteristics of the construction industry, materials are preserved and used at the construction site, so measures to control materials have not been fully implemented or are difficult due to geographical distance.

Construction firms in Hanoi need to reduce production costs and offer equal or lower prices than competitors. In addition, construction firms in Hanoi need to use modern technology, have low fuel consumption, invest in new and modern technologies, and have highly automated lines. In addition, construction firms in Hanoi need to propose to state agencies that they study and propose tax policies (CIT, import and export taxes, etc.), environmental policies, construction policies, etc. so as to reduce input costs, thereby reducing product costs and selling prices.

Improving reputation with customers: (i) Construction firms in Hanoi should regularly gather critical opinions on how to explain information about customers. In addition, construction firms in Hanoi need to improve the assessment and control of the commitment level in serving customers' needs, regularly measure customers' satisfaction, and attach great importance to and pay attention to after-sales services. (ii) Enhancing the market orientation of firms that are competitors is done by stimulating the sales department to find out information about competitors or their actions. Because, in the corporate department, the sales department is one of the most market-oriented. (iii) Construction firms in Hanoi need to conduct a radical digital transformation in the firm so that they can understand the behavior and expectations of customers and consumers to improve products and services, distribution methods, and guarantees. Through digitized data and information, enterprises can also improve the efficiency of using assets and human resources, increase productivity, and more effectively monitor the production and maintenance of products. Increasing asset efficiency and productivity in the long run is an important determinant of firm competitiveness (Dang, 2019) [3].

According to Vu *et al*. (2023) [16], the wave of construction firms suffered a blow because they were held in debt by real estate firms, dead due to hunger for capital, and showing signs of spreading. Many construction firms, main and subcontractors, and even niche market construction units such as landscaping and auxiliary equipment for real estate projects are short on cash flow. Bad debt increased; they cut staff, reduced wages, and stopped construction because resources were exhausted because they could not collect debt from project investors. There are real estate businesses that offer to pay debts with products, but with the current market liquidity being quite weak, changing from debt to goods is becoming increasingly difficult.

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