

Being Good or Being Known: International Reputation of High-speed Railway Enterprises

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Abstract

With the fierce competition in the global high-speed railway (HSR) market, international reputation becomes essential for enterprises to venture the overseas market. However, limited studies have been performed on the international reputation of HSR enterprises. Therefore, this study aims at revealing the formation mechanism of the international reputation of HSR enterprises by developing a theoretical framework. The researchers identified five factors and proposed a hypothetical path model through the comprehensive literature review. After the target pilot study, questionnaires were distributed to practitioners in the international HSR industry for data collection. The path model was validated based on the partial least squares structural equation modeling. Eight of nine paths were supported statistically. Researchers structured a theoretical framework for the international reputation of HSR enterprises from two perspectives, namely being good and being known. And then the strategic framework was performed to provide targeted promotion strategies for HSR enterprises. The findings of this paper not only contribute to the existing international reputation theory by the theoretical model, but also provide beneficial guidance for HSR enterprises to improve their international reputation by the strategical framework.

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Introduction

High-speed railway (HSR) is becoming popular worldwide because of its security, convenience, and environmental friendliness. Many countries launched long-term or short-term plans for HSR projects. As of June 2021, the global HSR operation mileage is 56,129 km, 22,562 km in construction, and 51,786 km in planning (UIC 2021). Meanwhile, fierce competition is accompanied by the growing HSR demand in the international market. A prominent example is the Early Train Operator project for HSR in California attracted 35 bidders (Zhang *et al.*, 2020). Therefore, facing the growing demand and fierce competition, HSR enterprises need to pay more attention on the international reputation and better understand its formation mechanism.

The international reputation may not match the actual capability of an enterprise. The capability of some HSR enterprises has not been perceived by international peers (Niu *et al.*, 2020). In particular, these enterprises may have advanced capability, but their performance in the global market has not been recognized, nor has they established an excellent international reputation (Niu *et al.*, 2021). This mismatch will lead to the failure of HSR enterprises in bidding. Since international HSR projects bidding is often carried out by scoring or voting, international reputation is one of the important factors in deciding whether to win the bid (Watt *et al.*, 2009). Moreover, the international reputation can value or devalue the enterprises' bid proposals when bidding on an HSR project or expanding a new market (Zhang *et al.*, 2019). Therefore, international reputation has become an urgent topic for HSR enterprises.

However, the existing studies failed to reveal the relationships among influence factors of the international reputation, especially for HSR enterprises. Therefore, this study is devoted to exploring the formation mechanism of the international reputation of HSR enterprises from two perspectives of being

42 good and being known. The findings of this study can enrich the knowledge framework of international
43 reputation, especially in the international HSR industry. The findings will also enable HSR practitioners to
44 better understand how international reputation is formed and select effective promotion strategies. This
45 paper is submitted according to the following structure. The second section is the literature review. The
46 overall research framework is presented in the third section. The fourth section describes the results of
47 measurement evaluation and path analysis. In the fifth section, we discuss the proposed theoretical model
48 and make recommendations for HSR enterprises. The last section summarizes the conclusion, limitations,
49 and future research directions of this paper.

50 Literature review

51 Corporate Reputation

52 Reputation has been defined as a characterization of enterprises' past behaviors and future actions
53 (Fombrun, 2005). Since reputation is playing an increasingly central role in different theories, scholars in
54 various fields have conducted research on corporate reputation from different theoretical perspectives.

55 It needs to be emphasized that scholars have investigated reputation from economics and institutional
56 perspectives. From the economic perspective, reputation has been defined as stakeholders' expectations or
57 estimates of an attribute of enterprises (Weigelt and Camerer, 1988). Scholars in this field thought that
58 reputation reveals the actual attribute of enterprises as a signal and reduces the information asymmetry, thus
59 prompting stakeholders to pay a price premium for their products (Rao, 1994). From the institutional
60 perspective, reputation was described as how stakeholders view an enterprise (Hall, 1992). The scholars who
61 draw on institutional theory suggested that the degree to which an enterprise is widely recognized in its
62 industry and how well it performed compared to its competitive enterprises can be another aspect of
63 reputation. Based on this view, scholars that embrace the institutional perspective believe that the exchange
64 of information and social influence from the interaction of various stakeholders jointly participate in the
65 formation of reputation (Rindova and Fombrun, 1999). Moreover, Rao (1998) pointed out that enterprises

66 with high status in the market have more advantages in reputation formation.

67 The differences in how scholars view reputation from different perspectives indicate that the study of
68 reputation can be further improved by integrating the conceptualization of definition. Therefore, combined
69 with economics and institutional perspectives, an empirical examination was performed to discuss the
70 dimensions, antecedents, and consequences of reputation from two dimensions: being good and being
71 known (Rindova *et al.*, 2005). By dividing reputation into these two kinds of dimensions, this integrating
72 perspective overcame the shortcomings which inferred the unobservable outcomes of reputation and provide
73 a basis for measuring reputation directly (Rao, 1994).

74 International Reputation of HSR Enterprises

75 Many scholars have switched their attention to topics regarding HSR. So far, the literature on HSR
76 involves competitive advantage (Zhou *et al.*, 2019), coopetition in the international joint ventures (Niu *et al.*,
77 2021), political risk (Chang *et al.*, 2018), sustainable development (Azzouz and Jack, 2020), and impact on
78 the regional economy (Vickerman, 2018). Unfortunately, rare studies focused on the international reputation
79 of HSR enterprises.

80 The international reputation of HSR enterprise has been defined as the recognition by peers in the
81 international HSR industry (Niu *et al.*, 2021). HSR projects are always evaluated by experts' scores or votes
82 in the international market, and international reputation as a stubborn subjective impression in experts is an
83 essential invisible factor in deciding whether to win the bids (Yang *et al.*, 2008). Besides, it has also been
84 proven that a favorable international reputation was associated with an increased possibility as cooperative
85 partners (Dollinger *et al.*, 1997), sustainability of good financial performance (Roberts and Dowling, 2002),
86 and the capability of maintaining competitive advantages (Shamsie, 2003). On the contrary, if the
87 international reputation of HSR enterprises is damaged, the available resources will be degraded, and the
88 trust of stakeholders will also be negatively affected (Doni, 2006). Therefore, international reputation was
89 mentioned as the primary development target and strategic plan for the HSR enterprises to achieve their

international competitive advantage (Niu *et al.*, 2022).

Research Methods

Overall Research Framework

We used the combination method of questionnaire survey and partial least squares structural equation model (PLS-SEM). Potential variables and corresponding factors were identified through a comprehensive literature review. A pilot study was conducted before the full-scale questionnaire survey. Based on the collected data, we conducted statistical analysis to verify the proposed hypothetical path model using the smart PLS version3.0 (Orozco *et al.*, 2014; Liu *et al.*, 2017; Zhai *et al.*, 2020).

Factors Identification

Researchers conducted a comprehensive literature review through the *Web of Science* retrieval system. The TOPIC of “reputation”, “prestige”, “image”, or “international reputation” is searched, the Type is restricted to “article” or “review” and the Language is limited to “English”. The titles, abstracts, and keywords were further screened to determine critical papers related to the HSR enterprises. We also browsed their references to confirm the completeness and credibility of the identified variables. Finally, 22 variables influencing the international reputation of HSR enterprises were settled based on a comprehensive review.

Furthermore, to explore the formation mechanism, the 22 variables have been classified into five factors: international reputation, enterprise capability, capability demonstration, perception of capability, and macro factors. Enterprise capability is directly related to the international reputation of HSR enterprises, and scholars tend to think the correlation is positive (Fombrun and Shanley, 1990; Zhang *et al.*, 2019). Prior studies have found that engaging in international reputation-building activities, such as lobbying and media exposure, are effective ways for HSR enterprises to demonstrate their capability, as good international reputation will be improved by these ways (Niu *et al.*, 2021). Additionally, stakeholders can perceive the capability of HSR enterprises through demonstration and assess their international reputation (Fombrun, 2005). Finally, macro factors should be considered due to the internationalization of the HSR industry

114 (Fombrun, 2005). Table 1 shows the results of factor identification.

115

Table1. Summary of Variables Along with Respective Factors

Factors	Variables	References	Key points
International reputation	IR1: Peer appreciation	Fombrun <i>et al.</i> (2000), Petkova <i>et al.</i> (2008)	Peer appreciation refers to the degree to which an HSR enterprise is liked, admired, and respected by peers in the industry.
	IR2: Owners recognize the projects' quality	Fombrun <i>et al.</i> (2000), Walsh <i>et al.</i> (2009)	Owners recognize the project's quality refers to the innovation, value, and reliability of an HSR enterprise's constructed and delivered projects.
	IR3: Good leadership	Fombrun <i>et al.</i> (2000), Melo and Garrido-Morgado (2012)	Good leadership refers to the demonstrated leadership and future vision of an HSR enterprise.
	IR4: Peer-recognized working environment	Fombrun <i>et al.</i> (2000), Petkova <i>et al.</i> (2008)	Peer-recognized working environment refers to the views on the working environment of an HSR enterprise.
	IR5: Social responsibility performance	Fombrun <i>et al.</i> (2000), Melo and Garrido-Morgado (2012)	Social responsibility performance refers to the perceptions of an HSR enterprise when dealing with different stakeholders.
	IR6: Financial performance	Fombrun <i>et al.</i> (2000), Roberts and Dowling (2002)	Financial performance refers to the views on an HSR enterprise's profitability, development prospects, and market risks.
Enterprise capability	EC1: Technical capability	Zhang <i>et al.</i> (2011), Liu <i>et al.</i> (2019)	Favorable technical capability helps HSR enterprises to complete projects within the time limit and cost specified in the contracts.
	EC2: Management capability	Schwaiger (2004)	Excellent management capability can help HSR enterprises solve disputes in project implementation.
	EC3: Financial capability	Lin <i>et al.</i> (2018)	Financial capability is one of the important indicators of HSR enterprises' capability.
	EC4: Relationship capability	Lin <i>et al.</i> (2018)	It is not easy for enterprises to stand out in the international HSR market because it involves complex relationships with different stakeholders; thus, relationship capability is of great significance for HSR enterprises.
Capability demonstration	CD1: Fully and accurately understand the owner's demands	Williamson (1991)	HSR enterprises need to distinguish the various needs of owners and demonstrate their capability according to different demands.
	CD2: Capability demonstration in the bidding	Lu <i>et al.</i> (2016), Zhang <i>et al.</i> (2020)	Capability demonstration in the bidding refers to one of the most direct and effective means of building a perception of stakeholders.
	CD3: Brand influence	Ghodeswar (2008), Tournois (2015)	Brand influence can enhance the recognition of stakeholders and distinguish an HSR enterprise from its competitors.
	CD4: Excellent performance relative to	Niu <i>et al.</i> (2021)	Showing an excellent performance compared to competitors is a vital way to demonstrate

	competitors CD5: Standard performance of contracts	Yin <i>et al.</i> (2020)	the capability of HSR enterprises. The standard performance of contracts affects the judgment of stakeholders on the prospect of HSR enterprises.
Perception of capability	PC1: Perception of capability through bidding	Niu <i>et al.</i> (2022)	Perception of capability through bidding is beneficial for HSR enterprises to win contracts and obtain recognition from the stakeholders.
	PC2: Perception of capability through delivered projects	Yin <i>et al.</i> (2020)	Delivering HSR projects with high quality is the most intuitive way to make enterprises' capability perceived by the stakeholders.
	PC3: Positive comments from stakeholders	Yang <i>et al.</i> (2020)	Positive comments from stakeholders refer to the basis of the perception of capability.
Macro factors	MF1: Industrial reputation	Chen and Mei (2018)	The good reputation of the international HSR industry can promote the recognition of enterprises in this industry.
	MF2: National reputation	Wang (2006)	National reputation refers to the centralized judgment of national image and characteristics.
	MF3: Support from the state	Chang <i>et al.</i> (2018)	The state support provides sufficient guarantees for HSR enterprises to expand overseas markets.
	MF4: Diplomatic relations	Mishina <i>et al.</i> (2008)	Friendly diplomatic relations between the host and home countries can be seen as a differentiating asset for HSR enterprises.

116 Proposing the Hypothetical Path Model

117 Enterprise capability provides the basis for the perception of capability through demonstration, which
118 may affect the attention and expectations of stakeholders (Mishina *et al.*, 2008). For HSR enterprises,
119 bidding is an essential means to demonstrate the capability and form perception. When exploring the
120 international competitive advantages paths of HSR contractors, Niu *et al.* (2021) hypothesized that
121 technology could directly influence international reputation, and might influence international reputation
122 through technology perception. Although this hypothesis is common sense, it was not tested. Similarly, we
123 propose the following hypothesis.

124 Hypothesis 1: Enterprise capability strengthens the capability demonstration.

125 Hypothesis 2: Enterprise capability positively affects perception of capability.

126 It has been argued that enterprise capability offers the potential to either enhance or reduce their
127 reputation, which is the product of capability (Pinto *et al.*, 2009). In the international HSR market, strong

128 capability means that an enterprise can provide high-quality products and show a better performance, thus
129 establishing an excellent international reputation (Deephouse and Carter, 2005). Hence, we propose the
130 following hypothesis.

131 Hypothesis 3: Enterprise capability has a positive impact on international reputation.

132 In addition to enterprise capability, capability demonstration is equally important, especially because it
133 can generate the perception of capability (Hall, 1992). For the capability to be better perceived and develop
134 an excellent international reputation in the competition, HSR enterprises need to demonstrate their actual
135 capability in the bidding process constantly. Therefore, we propose the following hypotheses.

136 Hypothesis 4: Capability demonstration positively affects perception of capability.

137 Hypothesis 5: Capability demonstration exerts a positive influence on international reputation.

138 International reputation is seen as an accumulation of perception of capability over time (Niu *et al.*,
139 2020). Stakeholders' entire perception of the capabilities of HSR enterprises will lead to high recognition,
140 which will directly affect the subjective impression of international reputation (Sillars and Kangari, 2004).
141 Hence, we propose the following hypothesis.

142 Hypothesis 6: Perception of capability exerts a positive influence on international reputation.

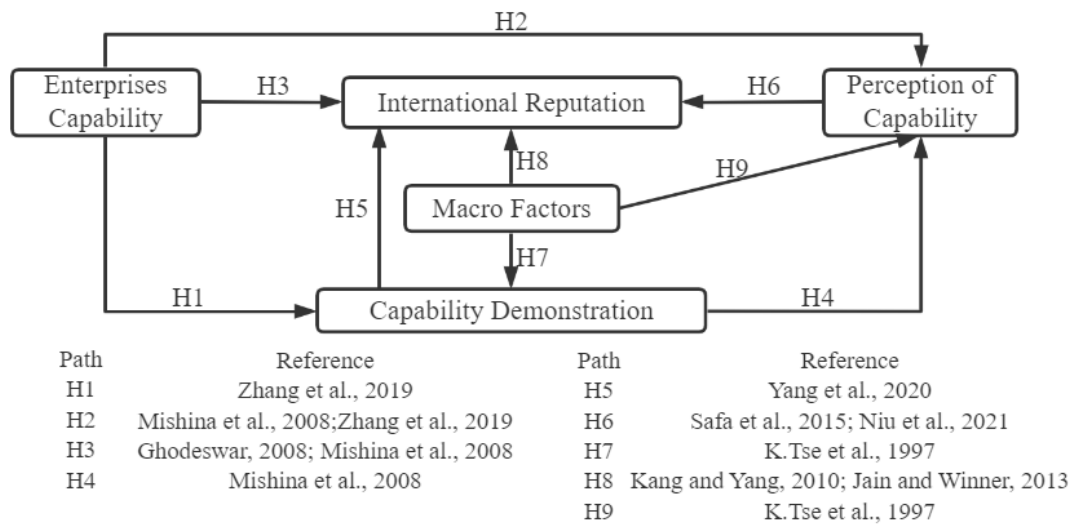
143 It needs to be emphasized that HSR enterprises in the international market also rely on macro factors
144 because of the characteristics of international HSR market (Chang *et al.*, 2019). Variables associated with
145 the macro-level, such as industrial reputation, support from the state, and diplomatic relations, can influence
146 HSR enterprises' capability demonstration, thus strengthening the perception of capability (Akintoye, 2000;
147 Hwang *et al.*, 2015; Deng *et al.*, 2018). For instance, the diplomatic relationship between host and home
148 countries provides an essential condition for HSR enterprises to demonstrate their capabilities. Moreover,
149 support from the state is also important in the formation mechanism as demonstrated in Niu *et al.*, (2021).
150 Therefore, researchers propose the following hypotheses.

151 Hypothesis 7: Macro factors strengthen the capability demonstration.

152 Hypothesis 8: Macro factors have a positive impact on international reputation.

153 Hypothesis 9: Macro factors positively affect the perception of capability.

154 On the basis of factor identification and hypothetical path proposal, the initial path model combined
155 with these five factors was proposed (see Figure 1).



156 **Figure 1. Hypothetical Path Model on International Reputation of HSR Enterprises**

158 Questionnaire Survey

159 Before the formal questionnaire, a pilot study was performed by five experts to verify: 1) the
160 comprehensiveness and rationality of these variables; 2) the classification of variables is reasonable; 3) the
161 hypothetical path model has sufficient theoretical support and practical significance; and 4) the questionnaire
162 was expressed without ambiguity. Feedback from the pilot study showed that the classification of five
163 factors was reasonable, and all the identified variables and hypothetical paths were applicable in
164 international HSR enterprises. An expert pointed out that the questionnaire defines international reputation
165 as the recognition of enterprises by international professional peers, but the listed questions cannot reflect
166 these recognition peers. In response, we modified the questions to make them more consistent with the
167 definition. Besides, some explanations of the variables were added to prevent ambiguity. For example,
168 “relationship capability” refers to the capability to maintain a good relationship with cooperative enterprises
169 and suppliers; “good leadership” means that the enterprise has a clear plan for the future and can make full
170 use of opportunities in the international market.

Based on the feedback from the pilot study and the revision of the first questionnaire draft, a refined questionnaire with two parts was put forward (see Appendix). The basic information of respondents is listed in part I. Part II included the respondents' cognition of the listed 22 questions. The questionnaire distribution and collection lasted from November 2021 to January 2022. First, the enterprises that have undertaken international HSR projects were selected from members of the China Association of Railway Engineering Construction. The sample was then expanded by identifying partners of these enterprises. A total of 395 sample enterprises were identified, covering all types of enterprises in the HSR industry supply chain. Questionnaires were distributed to the employees with more than three years of experience in each enterprise. A total of 395 questionnaires were distributed. After eliminating the incomplete or inappropriate questionnaires, 118 valid questionnaires were recovered, corresponding to the same number of different HSR enterprises. The rate of response was 29.87% which is within the reasonable range of 20-30% in the questionnaire surveys of engineering-related fields (Liu *et al.*, 2017; Zhao *et al.*, 2018). According to the characteristics of questionnaire distribution and research purpose, descriptive statistical analysis was conducted on the basic information at the enterprise level. In addition, since questionnaires relied on respondents to complete, the experience of respondents was the main criteria for evaluating the questionnaire's rationality. Table 2 shows the background information of enterprises and respondents.

Table 2. General Information of Enterprises and Respondents

General Information	Category	Total	Percentage (%)
<i>Sample statistics of the Enterprises</i>			
Types	Civil engineering enterprise	45	38.14
	Operation enterprise	26	22.03
	Design and consulting enterprise	13	11.02
	Manufacturing enterprise	27	22.88
	Other	7	5.93
<i>Sample statistics of the Respondents</i>			
Position	Ordinary employee	27	22.88
	Junior management	39	33.05
	Middle management	31	26.27
	Senior management	21	17.80
Years of experience	3-5	11	9.32
	6-10	22	18.64
	11-15	36	30.51

	16-20	30	25.43
	>20	19	16.10
	China	46	38.98
	Asia (excluding China)	15	12.71
Project Location	Africa	27	22.88
	Europe	12	10.17
	North America	14	11.87
	South America	4	3.39
	Total	118	100

Structural Equation Modeling (SEM)

Since Herman Wold developed the structural equation model (SEM) in 1975 (Wold, 1975), this approach has been extensively used in the engineering-related field of hypothesis testing (Molenaar *et al.*, 2009; Orozco *et al.*, 2014; Liu *et al.*, 2017; Zeng *et al.*, 2021). According to different internal algorithms, SEM is divided into two types: one is the covariance-based structural equation modeling (CB-SEM), and the other is the partial least squares structural equation model (PLS-SEM) (Fornell and L. Bookstein, 1982). There are certain advantages of PLS-SEM over CB-SEM. For example, PLS-SEM not only has no strict requirements on the data size but also processes data without normal distribution. Given the aforementioned superiority, we chose PLS-SEM to test the hypothesis path model by the smartPLS version 3.0.

Results

Results of Measurement Model Evaluation

We first conducted confirmatory factor analysis (CFA). The factor loadings which range from 0.717 to 0.907 are higher than the threshold of 0.6 (Hair, 1988). The CR scores which range from 0.860 to 0.910 are above the threshold of 0.7 (Hair, 1988). The AVE scores which range from 0.552 to 0.756 are higher than the threshold of 0.5 (Hair *et al.*, 2011). It can be seen from Table 3 that both reliability and validity meet the requirements.

Table 3. Results of CFA

Factor	Variable	Mean score	Loading	CR	AVE	alpha
International reputation	IR1	3.885	0.838	0.910	0.628	0.881
	IR2	4.107	0.770			
	IR3	3.934	0.829			
	IR4	4.033	0.778			

	IR5	4.156	0.740			
	IR6	4.107	0.797			
Enterprise capability	EC1	4.197	0.728			
	EC2	4.090	0.799	0.865	0.616	0.791
	EC3	3.861	0.759			
	EC4	4.090	0.848			
Capability demonstration	CD1	4.107	0.717			
	CD2	4.041	0.773			
	CD3	3.902	0.729	0.860	0.552	0.797
	CD4	3.934	0.775			
	CD5	4.270	0.718			
Perception of capability	PC1	4.016	0.832			
	PC2	4.156	0.907	0.903	0.756	0.838
	PC3	4.098	0.869			
Macro factors	MF1	4.156	0.785			
	MF2	4.107	0.864			
	MF3	4.041	0.873	0.905	0.705	0.860
	MF4	3.902	0.833			

Furthermore, all the square roots of AVE are higher than the correlation between any two factors (Doloi *et al.*, 2011), which proved the discriminant validity of this model meets the requirement (see Table 4). Gold *et al.* (2001) proposed to further evaluate discriminant validity with the Heterotrait Monotrait Ratio of Correlations (HTMT). Henseler *et al.* (2015) proposed that HTMT higher than 0.900 was considered representing poor discriminant validity of factors. The results in Table 5 showed that all five factors have satisfactory discriminant validity. Therefore, the hypothetical path model can be used for path analysis.

Table 4. Discriminant Validity of Five Factors

Factors	Capability demonstration	Enterprise capability	International reputation	Macro factors	Perception of capability
Capability demonstration	0.743				
Enterprise capability	0.620	0.785			
International reputation	0.564	0.675	0.793		
Macro factors	0.634	0.637	0.780	0.839	
Perception of capability	0.722	0.625	0.646	0.625	0.870

Table 5. Result of HTMT

Factors	Capability demonstration	Enterprise capability	International reputation	Macro factors	Perception of capability
Capability demonstration					

Enterprise capability	0.773			
International reputation	0.665	0.800		
Macro factors	0.756	0.766	0.894	
Perception of capability	0.883	0.765	0.748	0.729

Results of Path Analysis

Bias-Corrected and Accelerated (BCa) Bootstrap was chosen as the method for estimating nonparametric confidence intervals to test the hypothetical path model (Putra, 2022). In the two-tailed test, the critical T value shows the criterion to distinguish paths with different levels of significance. 2.58 is the threshold supported by the 0.01 level, 1.96 is the threshold supported by the 0.05 level, and 1.65 is the threshold supported by the 0.1 level (Awang *et al.*, 2015). As shown in Table 6, eight of the nine hypothetical paths were supported at different significance levels, while one was not supported.

Table 6. Results of Path Analysis

Path	Coefficient	Std.	t-value	95% confidence interval	Interpretation
H1	0.365***	0.117	3.115	0.545	supported
H2	0.251***	0.087	2.900	0.359	supported
H3	0.212***	0.080	2.664	0.412	supported
H4	0.468***	0.078	5.986	0.599	supported
H5	-0.091	0.100	0.910	0.102	Not supported
H6	0.216**	0.095	2.263	0.380	supported
H7	0.401***	0.139	2.887	0.588	supported
H8	0.543***	0.098	5.542	0.681	supported
H9	0.193**	0.090	2.144	0.321	supported

Discussion and Recommendations

According to the results of measurement model test and path analysis, Hypothesis 5 “capability demonstration has a positive impact on international reputation” was not statistically supported at any level of significance. Therefore, the theoretical framework was constructed based on the eight statistically significant paths from two perspectives, namely being good and being known (see Figure 2).

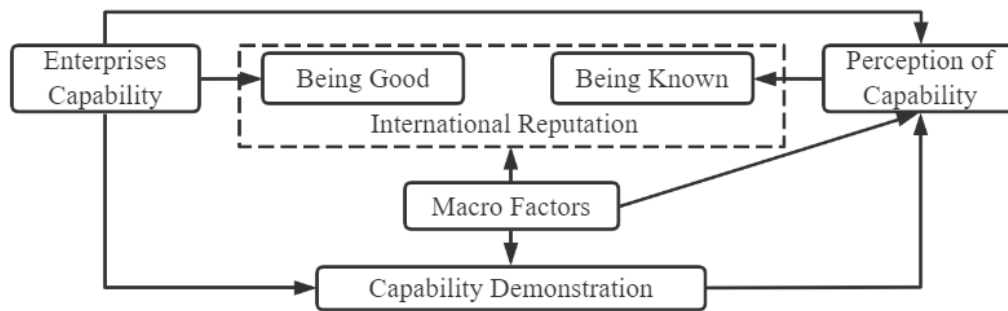


Figure 2. Theoretical Framework for International Reputation of HSR Enterprises

Being good

The direct impact of enterprise capability on international reputation is reflected in making HSR enterprises good. Enterprise capability may show a positive bias; that is, the higher the capability of an enterprise, the more likely it is to make it better. Enterprise capability mainly includes “technical capability”, “relationship capability”, “management capability”, and “financial capability”. We conducted the discussion following the above four aspects from the perspective of being good.

First, the technical capability is the most intuitive embodiment of enterprise capability. The owners will judge whether the technology capability of an HSR enterprise meets its requirements when choosing partners. HSR enterprises with advanced technology are often believed to reduce project construction and operation costs and ensure construction quality. Moreover, completing contracts on time and within cost requirements which is a sign of technical capability, can help HSR enterprises establish good images and enhance their position in the international market (Liao *et al.*, 2007). Enterprises need to deal with the relations with different stakeholders in the HSR projects. In particular, forming an international joint venture (IJV) with mature partners is a key manifestation of relationship capability to make HSR enterprises good. Moreover, HSR enterprises also need to develop cooperative relationships with government departments and financial institutions (Chang *et al.*, 2019). Given that management capability can minimize risks and make enterprises good, management capability is essential during the project implementation (Kotha *et al.*, 2001). In the complex international HSR market, enterprises should fully manage the political, economic, and cultural conditions throughout the project. Additionally, a strong financing capability can ensure that

248 enterprises can raise funds for the project. In addition, price competition is common when enterprises bid for
249 international HSR projects. The capability to provide a bid proposal with tempting financial terms often
250 influences the attitude toward this enterprise and whether it wins the bid (Zhang *et al.*, 2020). For instance,
251 Japanese bidders provided a loan of 880 billion rupees with an interest of 0.1% to win the first HSR project
252 in India.

253 Nonetheless, due to the characteristics of the international HSR market, the formation mechanism of
254 international reputation is by no means limited to enterprise-level, while relying more on macro factors to be
255 good. The influence of macro factors on international reputation in the perspective of being good is mainly
256 reflected in two aspects: industrial reputation and policy support. Industrial reputation is one of the essential
257 invisible determinants in global competition, that is the industry will have a certain expansion advantage
258 when the international industrial reputation is improved (Mahon, 2002). The “free-rider effect”, means that
259 lower performance may be thought better than it deserves, and may exist in the reputable industry. In
260 addition, support from the home country provides a sufficient guarantee for enterprises expanding overseas
261 markets. For example, with the “One Belt One Road” initiative put forward, the image of Chinese HSR
262 enterprises in the international market is becoming more positive.

263 Being known

264 Another perspective of reputation is being known (Rindova *et al.*, 2005). The discussion will be
265 conducted from both enterprise and macro levels. From the enterprise level, enterprise capability plays a
266 fundamental role in making enterprises known, but the actual capability of an enterprise may not be
267 perceived. Therefore, it is necessary for HSR enterprises to truly and completely demonstrate their real
268 capability in the bidding to form a perception of capability among stakeholders, thus international
269 reputations will be affected. In the preparation stage, enterprises need to properly allocate existing resources
270 to present a competitive bid proposal (Das and Teng, 2012). In the negotiation and confirmation stage,
271 positive past performance can strengthen the enterprise’s capability demonstration. Once an enterprise

272 shows a sustained and stable performance in the international market, the stakeholders will generate positive
273 attitudes, such as recognition, appreciation, and satisfaction (Doni, 2006). However, the coefficient of “H5:
274 capability demonstration→international reputation” is -0.091 in the path analysis, indicating statistically
275 insignificant. Capability demonstration has no positive effect on international reputation. On the contrary,
276 international reputation may promote capability demonstration. Although the results were different than
277 expected, it also seems acceptable. Stakeholders will pay attention on the process by which enterprises
278 demonstrate their capabilities in bidding. However, the degree of perception is more important. This
279 hypothetical path has not been supported, but capability demonstration, which serves as an intermediary, can
280 reduce the information asymmetry and make the perception of capability more comprehensive. By contraries,
281 the absence or ineffectiveness of demonstration may lead to this phenomenon, where an enterprise may have
282 a strong capability. Still, it does not have a prominent perception of capability compared with its
283 competitors.

284 The macro factors have both a direct and indirect influence on the international reputation. On the one
285 hand, macro factors will influence enterprises’ international reputation directly. The national reputation,
286 which is mainly reflected in making an enterprise known, is also a key factor influencing the international
287 reputation of HSR enterprises (Yang *et al.*, 2008). Significantly, national reputation in specific fields may
288 influence enterprises’ publicity in this country and decide whether to choose to select them as partners
289 (Lopes *et al.*, 2016). Moreover, as Herbig and Milewicz (1995) pointed out, a good diplomatic relationship
290 between host and home countries can improve international reputation by increasing mutual understanding
291 and promoting win-win cooperation. The example of Chinese HSR enterprises venturing the African market
292 illustrates this view. On the other hand, perception of capability reinforces the relationship between macro
293 factors and international reputation. For example, Swiss watches, French perfume, and Japanese or German
294 cars are highly recognized worldwide, which can be named the “country-of-origin effect” (Wang, 2006).
295 National reputation can help build up the perception of capability among stakeholders through this effect.

Furthermore, a diplomatic relationship between two countries can be seen as the differentiating asset for an enterprise to make the perception more intuitive and effective (Mishina *et al.*, 2008).

Recommendations

According to the identified factors and verified paths, HSR enterprises can find multiple strategies to improve their international reputation from both the macro and enterprise levels (Figure 3).

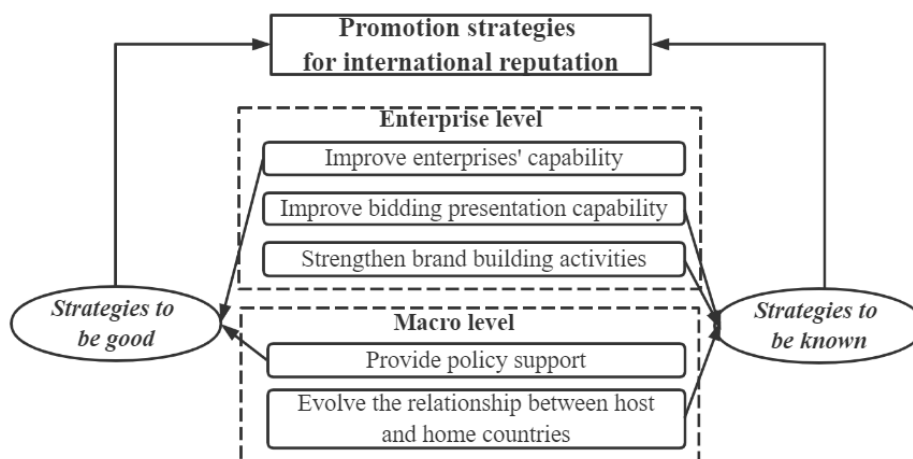


Figure 3. The Strategic Framework for International Reputation Promotion

At the enterprise level, to be good, HSR enterprises can enhance their international reputation by improving management capability and cooperating with reputable enterprises. To be known, international reputation can be enhanced through brand-building activities and fulfilling social responsibilities.

(1) It is one of the effective strategies for HSR enterprises to improve their international reputation to pay attention to their actual capability. The host government and the stakeholders prefer enterprises with more excellent capability. For HSR enterprises, the cultivation of capability is a long process (Chang *et al.*, 2018). Forming international joint ventures with mature partners can make up for their weaknesses and thereby improve their capability.

(2) Improving bidding presentation capability is a direct strategy to build an excellent international reputation. When preparing for the bidding, multiple strategies aimed at different targets should be proposed, which will provide the basis of the presentation. In the bidding, applying proper strategies to participate in the bidding of international HSR projects is beneficial for enterprises to win contracts, which represents the approval of owners and helps to improve the reputation from the perspective of long-term development (Lu

316 *et al.*, 2008).

317 (3) HSR enterprises can strengthen their brand building to establish and maintain a favorable
318 international reputation (Porter and Kramer, 2006; Melo and Garrido-Morgado, 2012). Facing fierce
319 competition, brand characteristics and recognition can help distinguish an enterprise from its competitors
320 (He *et al.*, 2019). For example, Shinkansen is the leading safety brand that tries to show the non-accident
321 rate in the international competition to obtain the market recognition of its brand. Likewise, the low
322 construction cost of Chinese HSR has attracted global attention compared with other international
323 competitors. Moreover, participating in local social responsibility activities can help enterprises gain
324 recognition and support from the local society, thus international reputation will be enhanced.

325 In addition to enterprise activities, the international reputation enhancement strategies of HSR
326 enterprises are more dependent on government actions.

327 (1) Obtaining policy support from the home country before the HSR enterprises enter a new country is
328 necessary (Al Khattab *et al.*, 2007). On the one hand, countries that provide policy support may support the
329 development of the HSR industry and approve more projects. On the other hand, along with policy support,
330 HSR enterprises can be more proactive in seeking opportunities to create situations conducive to
331 international reputation. Besides, obtaining the corresponding policy support is useful to deal with adverse
332 events in international competition.

333 (2) The international reputation of HSR enterprises is directly affected by the relationship between the
334 host and home countries (Zhang *et al.*, 2019). The long-term friendly diplomatic relations between the two
335 countries, which can be seen as a strategic capital, can deepen the understanding between the enterprises of
336 both countries, thus facilitating the establishment of a favorable international reputation in the local market.
337 It is easier for HSR enterprises to first enter countries with good diplomatic relations with the home country.
338 For example, the Chinese government has provided policy support to the Chinese joint venture by signing a
339 memorandum with the Indonesian government to facilitate the Jakarta-Bandung HSR project.

340 Conclusions

341 Through a comprehensive literature review and targeted pilot study, five factors which consist of
342 International Reputation, Enterprise Capability, Capability Demonstration, Perception of Capability, and
343 Macro Factors, were identified. Based on the identified factors, we proposed nine hypothetical paths and
344 structured a path model. The results of path analysis showed that eight of nine paths are significant at
345 different levels. In addition, a theoretical framework was proposed to discuss the formation mechanism of
346 international reputation from two perspectives, namely, being good and being known. Finally, this paper put
347 forward several recommendations for HSR enterprises to improve their international reputation.

348 Theoretical Significance

349 (1) Most past studies failed to consider the interrelationships among the influencing factors of
350 international reputation. Contrastively, a hypothetical path model was established to indicate the
351 interrelationships among identified factors influencing the international reputation of HSR enterprises. Thus,
352 this study not only expands the existing research on international reputation but also provides the foundation
353 for future studies.

354 (2) Rindova *et al.*(2005) divided reputation into two correlative and distinguishing conceptualized
355 dimensions, namely being good and being known. We proposed a theoretical framework that enriches the
356 existing reputation theory to discuss the formation mechanism of HSR enterprises' international reputation
357 in this paper based on this view.

358 Practical Implication

359 (1) Even though international reputation has been mentioned in various fields, existing research is
360 difficult to guide HSR enterprises to understand the international reputation directly. Therefore, we analyzed
361 how the HSR enterprises' international reputation was formed from the perspectives of being good and
362 being known. Furthermore, the verified path model can help HSR enterprises better comprehend the
363 influence factors and formation mechanism of international reputation.

364 (2) Based on the identified factors and the verified path model, a strategic framework was proposed for
365 HSR enterprises to improve their international reputation from the enterprise and macro levels. This
366 framework can provide practical bases for HSR practitioners' decision-making in international competition.

367 Limitations and Future Direction

368 The main limitation of this research is that most respondents work for HSR enterprises in Asia,
369 particularly in China. Since all of these respondents have participated in international HSR projects and are
370 aware of their international reputation, the collected data is acceptable. Another limitation may be the
371 subjectivity which is inescapable due to the characteristics of the questionnaire survey. For further analysis,
372 we conducted tests to verify the reliability and validity of the collected data.

373 Despite these limitations, this research makes theoretical contributions to the schematic knowledge of
374 international reputation and provides a basis for HSR enterprises to adopt effective strategies to improve
375 their international reputation. We can investigate the promotion strategies of international reputation for
376 HSR enterprises and explore the interrelationships among these strategies in the future.

377 Data Availability Statement

378 The data used or analyzed during this research will be provided to anyone with reasonable requests by
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