

# INSTITUTIONAL ENVIRONMENT, COMPETENCIES AND FIRM EXPORT PERFORMANCE: A STUDY OF THE EMERGING COUNTRY

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## Abstract

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The study is an attempt to examine the determinants and impact of export propensity and export intensity for firm-level performance in India. The factors determining export propensity are political stability, corruption, and competition from the informal sector while the determinants of export intensity in the present study are identified as a skill of the labour force, the technological capability of a firm, and foreign ownership of technology in a firm in India. A two-stage Heckman selection model has been advanced to investigate the linkage between the export performance of Indian firms with the home institutional environment and firm competencies. Firm-level data of approximately 8,000 Indian firms are used as available from the World Bank's Enterprise Surveys (WBES) database. The results indicate that political stability and competition effect export propensity of Indian firms while export intensity is impacted by access to technology and employing skilled labour. The study has important theoretical implications in terms of understanding the exporting behaviour of firms. It indicates that the decision of firms to export and their export performance are interlinked. It is affirmed that export intensity is dependent on firm-specific competencies while institutions indirectly influence the decision of firms to export. The policy measures of *Skill India* and *Make in India* strongly favour increased access to the skilled labour force and strengthening the domestic industry which may lead to an increase in the export intensity of Indian firms. The recent institutional measures adopted favour a stable environment of doing business as well as providing firms opportunities to focus and leverage their competencies in the best possible manner. The current nascent steps of policy reforms need to be aggressively implemented for enhanced export capabilities of Indian firms.

**Keywords:** Institutional Environment, Firm Competencies, Export Performance, India, Firm Analysis

**Authors' individual contribution:** Conceptualization - P.S.; Methodology - A.A.S.; Validation - P.S.; Formal Analysis - A.A.S.; Investigation - A.A.S.; Writing - Original Draft - P.S.; Writing - Review & Editing - A.A.S. and P.S.

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## 1. INTRODUCTION

An increasing number of firms and new ventures expand their businesses to international markets in

the form of exports, especially in the emerging economies. At large, macroeconomic factors influence export propensities of firms. The world economy is continuously undergoing various changes owing to

trade liberalization initiatives taken by several countries where numerous firms are expanding internationally through exports (Buckley & Strange, 2015). In the context of emerging economies, various characteristics of home country environmental factors such as corruption, political instability, informal competitors, etc. play an important role in determining the export performance of the firms (Krammer, Strange, & Lashitew, 2018). It is important to understand the interplay between resources, institution, and industry to explore the determinants of export propensity and export intensity and performance of firms' export behaviour (Gao, Murray, Kotabe, & Lu, 2010). Export propensity may be described as whether a firm export to the foreign markets or not. Export intensity may be defined as the ratio of the sales of exports to total sales (Calof, 1994; Salomon & Shaver, 2005). It is broadly studied as an outcome of the performance of exporting firms (Wang & Ma, 2018).

Firm's export performance in developing countries is always a matter of attention both in the theoretical literature and at policy implication level, but the linkages of the variables, political stability, corruption, degree of competition from informal sectors, the skill of the labour force, foreign ownership of technology in a firm and access to technology, with the export performance of the firms has not been explored satisfactorily in the case of the rising economy especially India. Based on the literature, export propensity and export intensity have been considered as two indicators of firm export behaviour in this study (Fung, Gao, Lu, & Mano, 2008).

This study explores the impact of issues related to political stability, corruption, degree of competition from informal sectors, the skill of the labour force, foreign ownership of technology in a firm and access to technology on export performance of the firms in India. Feeble country level factors such as corruption, political instability, and certain other factors such as competition among others may increase the likelihood that the firms export performance might witness the undesirable impact. Factors such as corruption and political instability are not very rare in developing economies and hence the concerns rise about the impact of these factors on the performance of the firms.

The remaining of the paper is sketched as follows. Section 2 discusses the review of literature. Section 3 enumerates the methodology and hypotheses formulated. Section 4 examines the research results. In Section 5, the discussion of results is enumerated. Section 6 states the conclusions.

## 2. LITERATURE REVIEW

Institutions have a key role to play in the growth and performance of the economies. They can be considered as constraints devised by humans that build political, economic, and social interaction. There can be formal and informal constraints or institutions. Formal institutions refer to the constitutions, laws, and property rights that regulate economic exchange within a country whereas informal institutions refer to sanctions, taboos, customs, traditions, and codes of conduct generally categorized by social behavioural norms. Institutions provide the incentive structure of an economy and

direct it towards growth, stagnation, or decline. Hence, institutions play a key role in the performance of economies (North, 1991). The institutional environment has significant effects on export behaviours of the firms. This is above and beyond the impact laid down by firm competencies and industry factors. The firm competencies have variance effects on firms' export behaviours (Gao et al., 2010).

In this paper, an effort is made to assess the export propensity and intensity as is determined by various variables. The paper intends to analyse the role of political stability, corruption in home country and degree of competition from informal sectors on the export propensity of the firms in India. In addition to this, the study also investigates the effect of the skill of the labour force, foreign ownership of technology in a firm and access to technology on the export propensity of the firms in India.

Political stability largely defines a country's growth since it plays an important role in the economic growth of a country and an unstable political environment can easily be a cause of poor economic growth and economic development. A stable political environment in a country brings in a coherent and unceasing path for sustainable development (Radu, 2015). Broadly, political instability comprises phenomena of social unrest, instability of policymakers, the disintegration of the decision-making process and electoral uncertainty (Carmignani, 2003). Frequent changes in government policies are also an indicator of political instability (Ali, 2001). It is one of the most significant obstacles to economic growth and development (Barro, 1991) as a higher degree of political instability is linked with the inferior growth rates of GDP *per capita* (Aisen & Veiga, 2013; Alesina, Özler, Roubini, & Swagel, 1996). In case of developing countries, political instability is one of the key hindrances in the business environment and hamper economic growth (Kapri, 2019). This was the first study to test the causal relationship between political instability and firm's performance. Overall, in literature, there are restricted and inadequate studies on this linkage. The policy instability is less distinct in the case of the export and import share of the GDP (Ali, 2001). However, at the firm level, not much is known about the effect of political instability on firm performance. Not many studies are available that investigates the causal relationship between political instability and the export performance of the firms. Hence, political instability may be perceived as an obstacle by firms and may impact their trade propensity negatively and increases the chances of a firm to enter the international market (Kapri, 2019).

Corruption level in a country also impacts its economic growth. IMF (2018) states systemic corruption as "abuse of public office for private gain which is associated with lower growth and investment and higher inequality" and hence has economic and social costs associated with it. It is defined as the abuse of public power for private gain. Structure of government institutions and that of political processes are important determinants of the level of corruption. Governments that are not able to control their agencies well witness a high level of corruption (Shleifer & Vishny, 1993). It has

been established that a 1% rise in the corruption level decreases the growth rate by about 0.72%. Corruption also decreases the level of human capital and private investment (Mo, 2001). Bribery, a form of corruption has significantly negative effects on firm profitability and labour productivity in Indian firms. It leads to a more negative impact on smaller and older firms as that of larger and younger ones (Jain, 2020). Bribery within the home country negatively impacts firms' exports (Lee & Wang, 2013).

Various studies in the literature discuss the corruption and performance of the firms (Gaviria, 2002; Athanasouli, Goujard, & Sklias, 2012; Blagojević & Damijan, 2013; Jiang & Nie, 2014; Sharma & Mitra, 2015; Van Vu, Tran, Van Nguyen, & Lim, 2018). Most of the studies emphasize that corruption negatively impacts growth, investment, and other country level indicators. However, at the firm level, the results of the relationship of corruption and firm performance are diverse. The literature has two views on corruption. The first view, "sanding-the-wheels" states that corruption hampers firm's performance whereas the second view, "greasing-the-wheels" states that corruption can help in promoting the firm's performance. Hence, there exist two alternative hypotheses in the literature. For example, Sharma and Mitra (2015) in their study tested these two alternative hypotheses. They found that bribery has a positive effect on the export performance of the firm. It was also identified that the bribery acts as a tax on firms' profitability and reduces efficiency. The evidence stands in support of both the hypotheses. Another study in the Indian context on manufacturing firms suggested that firm productivity is negatively impacted by the bureaucratic corruption as compared to other institutional variables (Raj & Sen, 2017). The discussion suggests that corruption will have a positive effect on the export propensity of firms.

The competition from the informal sector can be understood as a degree to which the presence of the informal sector affects business processes (Qi et al., 2020). The emerging economies have prevalent informal sectors. These can be defined as the hidden assets or economic activities which goes unrecorded in the official GDP statistics (London & Hart, 2004). In developing countries, entrepreneurs find it costly to enter the formal sector and business-related activities are performed using informal social contracts as binding arrangements and are outside the formal law (London & Hart, 2004). The value of the economic transactions in the informal sector in the developing countries may be the same or may even surpass what is recorded in the formal sector (Henderson, 1999). Because of the prevalent degree of competition from the informal sector, many firms operating in the formal sector will choose to enter the foreign markets.

The skilled labour force is expected to improve the quality and increase the diversity of existing products and hence impact the export intensity of the firms positively (Morgan, Kaleka, & Katsikeas, 2004). There are numerous ways by which skilled labour force impacts export intensity in a positive way (Krammer et al., 2018). Commercial and managerial expertise of entrepreneurial founding team help firms to export but it is education, in both general and specific terms that exerts a substantial positive effect on export intensity (Ganotakis & Love, 2012). Entrepreneurs education play an important

role in determining the three probable outcomes, failure, survival and growth of a firm. With a high level of education probability of marginal survival and growth increases (Cooper, Gimeno-Gascón, & Woo, 1997). The firms that can leverage innovativeness, knowledge, and capabilities are able to achieve considerable access to the foreign markets in the early stages of their evolution (Knight & Cavusgil, 2004). Skilled employee force increases the likelihood of improved quality and diversity of the existing products and positively affects the firm's export performance (Morgan et al., 2004). It concludes that skilled labour force or skilled employees facilitate the development of appropriate strategies related to operations, management and product and exhibiting positive effects on export intensity.

Technological capability of a firm is positively linked with its export shares (Wignaraja, 2008). Technology factor is a significant determinant of exports from less-developed countries as it strengthens the export competitiveness of firms in these countries (Bhaduri & Ray, 2007). There are significant improvements in productivity for the firms which are more technologically advance (Garcia, Avella, & Fernández, 2012). Firms indulged in product innovation are more likely to export. Internal R&D and supply chain partnerships promote innovation, and these commercial collaborations are important to facilitate entry into foreign markets (Ganotakis & Love, 2011). Technological capability of firms measured by R&D, technology import, and training investment, increase the likelihood of exporting. In the case of SMEs, R&D is significant on export propensity (Yang, Chen, & Chuang, 2004).

Technological advancement of an organization is one of the key determinants in export performance of a firm in the literature, but more of the focus of the research has been on the effects of internal technology as that of the role of external technology (Wang, Cao, Zhou, & Ning, 2013). Foreign knowledge is critical in promoting product innovation. At the same time, a firm's export activities are an effective means for obtaining foreign knowledge (Li, Chen, & Shapiro, 2010). Firms look for external sources to develop their technological capabilities which facilitates them to develop more improved products (Krammer, 2016). Also, the firm's absorptive capacity for overseas knowledge acquisition benefits them more from export activities (Garcia et al., 2012). Foreign technology improves a firm's performance such as productivity and hence is crucial for developing economy like India (Sharma, 2018). In case of Chinese manufacturing firms, acquisition of external technology exhibits a positive influence on the firm's export performance. Firms that acquired technology from foreign countries outpaced the firms those depended on the locally developed technology (Wang et al., 2013). For developing economies, research and development taking place in the developed countries is a vital source of technology. This takes place both ways, through export and technology transfer (Sharma, 2018). External sources of technology and R&D activities are important for the development of technological capability of the small firms (Yang et al., 2004). Hence, access to foreign technology has a much larger effect on the firm's productivity as that of its internal R&D (Sharma, 2016).

### 3. RESEARCH METHODOLOGY

#### 3.1. Dataset

As per the existing empirical and theoretical literature, the conceptual framework has been adapted from Krammer et al (2018) which was applied to BRICS nations. As India is a part of BRICS, it becomes important to examine determinants of firm-level export performance, in order to suggest policy measures for enhancing export intensity from the country. The hypotheses formulated are in line with findings of Krammer (2018) but the expected results are different. The hypotheses framed are:

*H1: Political instability affects the export propensity of firms positively.*

*H2: Corruption in the home country affects the export propensity of firms positively.*

*H3: Degree of competition from informal sectors affects the export propensity of firms positively.*

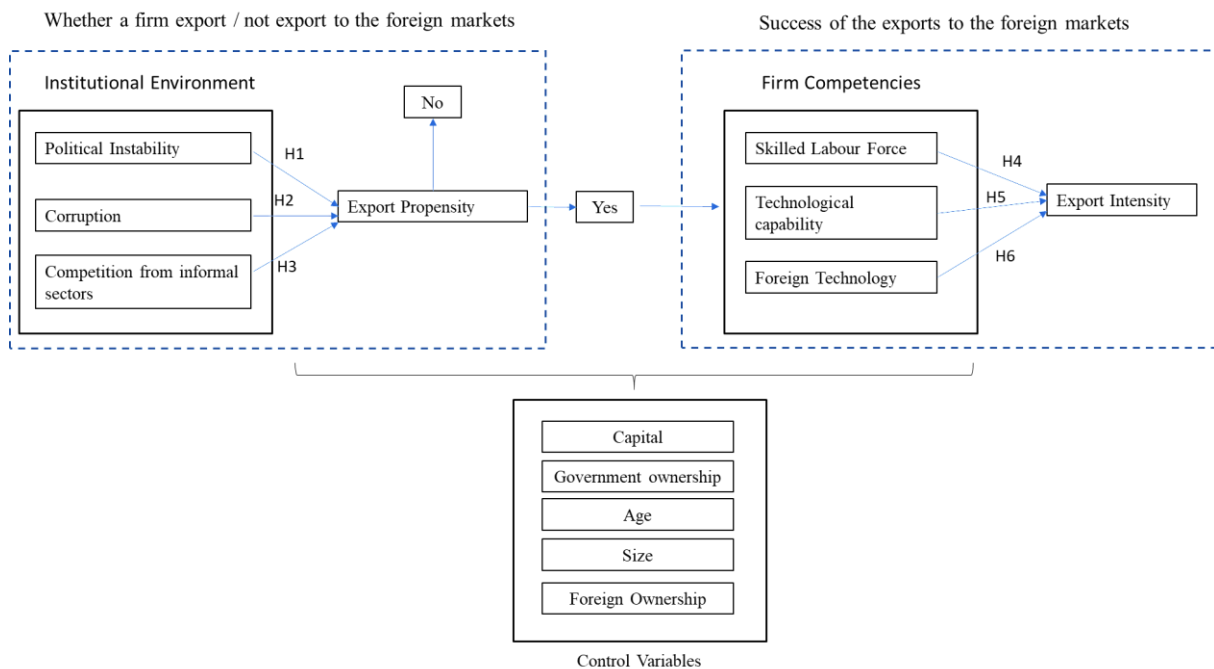
*H4: Level of the skilled labour force of firms affects their export intensity positively.*

*H5: Technological capability of firms affects their export intensity positively.*

*H6: Access to foreign technology by firms affects their export intensity positively.*

The conceptual framework is as depicted in Figure 1 below.

Figure 1. Conceptual framework



The control variables are fixed parameters which play a vital role in promoting export propensity and intensity (Krammer, 2018).

For the present study, firm-level data for Indian firms are used as available from the World Bank's Enterprise Surveys (WBES) database. The database has been selected as it covers information related to India's environment of doing business, the performance of firms, their capabilities and growth. The WBES database is highly reliable as it systematically collects data based on stratified sampling techniques and standardised surveys across industries for each country. As for the present study, Indian firms are being studied, the latest available WBES survey for India is of the year 2014. The dataset contains 8907 firms after cleaning the data for missing information.

#### 3.2. Variables and sources

Several variables based on existing studies and assessment of firms' capabilities of performance and export have been selected. Table 1 indicates the variables selected for the present analysis. The dependent variables are as per the theoretical

model formulated are two-staged. The first stage indicates the determinants to export by a firm in India and is indicated by the dependent variable *Export propensity* and the second stage indicates the quantum of exports undertaken once the firms start exporting and are referred to as *Export intensity*. The results and impact may not be the same for the two stages (Estrin, Meyer, Wright, & Foliano, 2008).

To assess the environment of doing business in India, the country-specific factors are considered and are referred to as institutional factors which are independent variables for the study. The variables indicating institutional environment of doing business are *Political stability*, *Competition* from other establishments and *Corruption* at various levels of establishing and operationalising businesses in the country. *Political stability* and *Competition* are measured on a five-point scale (0-4), indicating obstacles faced or not faced by a firm owing to these factors while corruption indicates the percentage of total annual sales paid by firms "to get things done" and the log value of the measure is considered. For the second stage of analysis, the variables selected as independent variables are firm-specific. The firm-specific

competencies are assessed by the level of technology used and skills of the labour force. To account for the skill set of workforces, the percentage of skilled works in total production workforce is used. For technology, two variables are selected, one is the presence of websites of firms and second is the share of foreign ownership in technology indicating external stimulus to the technology available to firms.

The study also has control variables for both the stages of the model, to account for firm heterogeneity. These variables are based on the existing literature and include *Size* of firms, *Age* of firms, *Foreign* or *State* ownership in firms and *Capital assets* of the firm. *Size* is indicated by

a number of permanent employees, as bigger firms internationalise quicker than smaller firms (Bernard, Jensen, Redding, & Schott, 2007). *Age* of the firm is calculated from the year of establishment and has different results across studies. It is computed by its log value and has been mainly been indicated as a positive indicator for exports (Bigsten & Gebreyesus, 2009; Yiu, Lau, & Bruton, 2007). *Ownership* stake in the firms whether *Foreign* or *State* have been considered as significant variables for firms which may improve export performance (Singh, 2009; Bai & Wan, 1998) as in a country like India, foreign-owned companies may have better capabilities while state-owned firms may be more secure.

**Table 1.** Description of variables

<i>Variable</i>	<i>Definition</i>	<i>Impact on export performance</i>
<i>Exp propensity (EXPPR)</i>	Dummy variable, whose value = 1 if the firm reports a positive amount of exports, and = 0 otherwise	--
<i>Exp intensity (EXPI)</i>	Continuous variable ranging between 0 and 100, measuring exports as a percentage of total sales	--
<i>Political instability (POL)</i>	Industry-region level measure of political instability, based on averages of subjective assessments by the firm managers, on a five-point scale (ranging from 0 to 4)	+
<i>Corruption (CORR)</i>	The extent of corruption, measured by the amount of informal payments as a percentage of total annual sales paid by firms "to get things done"	+/-
<i>Degree of competition from informal sectors (COMP)</i>	Industry-region level measure of competition from the informal sector, based on averages of subjective assessments by the firm managers, on a five-point scale (ranging from 0 to 4)	+
<i>Skill of the labour force (SKILL)</i>	The percentage of skilled workers in total production (i.e., non-managerial) workforce. Skilled workers are those who have "special knowledge", either acquired at work, or obtained through attendance of a college, university, or technical school	+
<i>Foreign ownership of technology in a firm (FORTECH)</i>	Dummy variable, whose value = 1 if the establishment uses technology licensed from a foreign-owned company, and = 0 otherwise	+
<i>Access to technology (TECH)</i>	Owning a website and email	+
<i>Foreign (FOREIGN)</i>	The percentage share of equity ownership by "private foreign individuals, companies or organizations"	+
<i>State (STATE)</i>	The percentage share of ownership by the state or government	+/-
<i>Capital (CAP)</i>	Log total book value of fixed assets (US\$)	+
<i>Age (AGE)</i>	The number of years since the firm was established (expressed in logs)	+/-
<i>Size (SIZE)</i>	The natural logarithm of the total number of firm's full-time employees	+

## 4. RESEARCH RESULTS

### 4.1. Descriptive statistics

The descriptive results of the dataset of firms in India indicate that 16.8 percent of the firms are exporters as depicted in Table 2 as export intensity is 7.43 percent for the entire dataset but improves considerably to 44.34 percent for only exporting firms. It is also clear that the average age of firms is 30 years which may export while the average age of

only exporting firms is also around 30. Corruption is not considered a big problem in India, while the use of technology is quite significant. The share of firms with foreign ownership in India is approximately 0.48 percent, while government ownership are only around 0.19 percent. With respect to the size of firms, an average firm in India has 40 percent skilled employees in the total workforce.

On examining the pairwise correlation as enumerated in Table 3, the correlation coefficients are in line with the expectations of the study.

**Table 2.** Descriptive statistics

	<i>Mean</i>	<i>Std. dev.</i>	<i>Probability</i>
<i>CAP</i>	4.937	3.393	0.000
<i>CORR</i>	-1.167	3.789	0.000
<i>EXPI</i>	7.437	21.989	0.000
<i>EXPPR</i>	0.169	0.375	0.000
<i>FOREIGN</i>	0.489	5.920	0.000
<i>COMP</i>	0.298	1.029	0.000
<i>AGE</i>	30.930	91.587	0.000
<i>POL</i>	1.140	1.310	0.000
<i>SIZE</i>	1.617	0.543	0.000
<i>SKILL</i>	52.511	23.790	0.000
<i>STATE</i>	0.200	3.272	0.000
<i>FORTECH</i>	0.032	0.876	0.000
<i>TECH</i>	1.312	0.463	0.000

Table 3. Correlation matrix

	CAP	CORR	EXPI	EXPP	FOREIGN	COMP	AGE	POL	SIZE	SKILL	STATE	FORTECH	TECH
CAP	1.000												
CORR	-0.084	1.000											
EXPI	0.064	-0.036	1.000										
EXPP	0.082	-0.027	0.751	1.000									
FOREIGN	0.001	0.000	0.049	0.067	1.000								
COMP	-0.002	-0.017	-0.017	-0.025	-0.001	1.000							
AGE	0.004	0.001	-0.006	0.007	-0.005	-0.021	1.000						
POL	0.097	-0.021	0.056	0.065	-0.025	0.007	-0.004	1.000					
SIZE	0.069	-0.040	0.286	0.368	0.033	-0.030	0.022	0.023	1.000				
SKILL	0.015	0.135	0.058	0.044	-0.003	-0.007	0.020	0.190	0.034	1.000			
STATE	0.019	0.001	0.004	0.012	0.014	-0.025	0.216	0.006	0.070	0.018	1.000		
FORTECH	-0.013	0.036	0.026	0.013	0.014	0.105	-0.036	0.002	0.037	0.002	0.004	1.000	
TECH	-0.002	0.008	-0.063	-0.022	-0.062	0.008	-0.026	-0.037	0.011	-0.014	0.012	0.007	1.000

Notes: (1) The correlations refer to the data on the 8701 firms used in the regressions. (2) The log values of SIZE, CAP and AGE are used to calculate the correlations.

#### 4.2. Empirical analysis

As the analysis is based on the primary survey, there is a possibility of the presence of potential sample selection bias (Hult et al., 2008) and thus Heckman two-stage estimation technique is applied. For the first stage of analysis, probit estimation is used with *Export propensity* as the dependent variable. In this estimation, the control variables namely *Capital*, *Size*, *Age* and *ownership* as well as institutional variables like *Corruption*, *Political stability* and *Competition* are examined. The first stage regression is applied to the entire dataset of 8907 observations. In the second stage, the linear regression model is applied and *Export intensity* of only exporting firms is considered. Firm-specific variables like *Skills*, use of technology and foreign

share of technology as well as the control variables. Another very important variable which is used in the second stage is the *Inverse Mills Ratio* (IMR). It is calculated from the first stage regression and is the truncated mean of probit estimation. The truncated mean is obtained from the generalized residuals for the firms reporting non-zero exports. *IMR* is quite important as it examines the fact that only exporting firms are considered in stage 2 of analysis and the firms are not randomly selected (Bernard et al., 2007). The *IMR* coefficient is a function of the correlation between the error terms of the two stages of regression. If the coefficient is significant, there is the presence of a sample selection bias and *IMR* also provides the direction of correlation. Thus, the models formulated for the present study are:

$$EXPR_i = \alpha_0 + \alpha_1(Pol_i) + \alpha_2(Corr_i) + \alpha_3(Comp_i) + \gamma_1(X_i) + \varepsilon_i^1 \quad (1)$$

$$EXPI_i = \alpha_0 + \alpha_1(Skill_i) + \alpha_2(Tech_i) + \alpha_3(ForTech_i) + \alpha_4(IMR_i) + \delta_1(X_i) + \varepsilon_i^2 \quad (2)$$

In equations (1) and (2), *i* refers to the firms in India selected based on export values. *X* denotes the control variables which are *Size*, *Age*, *Capital*, *Foreign* and *State ownership*. *Pol* is *Political stability*, *Corr* is *Corruption* and *Comp* is competition amongst establishments in India. *Skill* refers to the proportion of skilled workers in the labour force, *Tech* refers to the use of technology by firms in businesses and *ForTech* is the share of foreign ownership in technology being used in the selected firms.  $\gamma_1$  and  $\delta_1$  are the coefficients of control variables.  $\varepsilon_i^1$  and  $\varepsilon_i^2$  are the error terms in each model and are uncorrelated due to the introduction *IMR* in the second stage.

As the present study uses survey data for dependent and independent variables from the same source there may be issues of common method variance (CMV). As the variables are from the same source, there may be spurious correlations and hence CMV may not pose serious issues in the analysis. The WBES keeps the anonymity of respondents and hence CMV is mitigated at the survey design stage (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). The dependent variables which measure export performance for the present study are not perceptual in nature and are accounting data and hence consistent. The institutional variables have been constructed by averaging out large numbers of responses from firms and hence reducing measurement errors and bias (Fisman & Svensson, 2007; Podsakoff et al., 2003).

The results of probit estimation are depicted in Table 4 indicating the determinants of export performance for Indian firms with *Export propensity* (*EXPR*) as the dependent variable. The independent variables include control variables of *Size*, *Age*, *Ownership* and *Capital* and institutional environment variables like *Corruption*, *Political stability*, and *Competition*. Five models are estimated, with Model 1 including only control variables, Models 2, 3 and 4 including the institutional variables individually and Model 5 including all the variables. *Size* and *Foreign ownership* are positively significant across all models and indicate that large and foreign-owned firms are likely to export from India (Bernard et al., 2007). *Capital* also has a significant and positive impact indicating that high budget firms are more likely to export as the state's stake in ownership is insignificant due to set regulatory procedures, goals, and budgets in India for these establishments (Bai & Wang, 1998). *Political instability* and *Competition* are significant while *Political instability* is positively related, and *Competition* is negatively related to the export propensity in both the models whether included separately or with all other variables. A high degree of political instability increases export and thus confirms *H1* of the study. Low competition is associated with high export. Political instability in India is an intense driver of exports to expand and diversify markets along with levels of competition (Guillaumont, Jeanneney, & Brun, 1999). *H2* of our study is not supported and competition though significant has a negative relation, i.e., it may impact exports but may not be a facilitator of turning

towards foreign markets. Corruption level is not a significant indicator of export across all models. Therefore, *H1* and *H3* find support in our analysis

but *H2* is not supported. Moreover, in case of *H3*, the results though significant are negatively related.

**Table 4.** Determinants of export propensity

	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>	<i>Model 5</i>
<i>SIZE</i>	0.00**	0.00**	0.00**	0.00**	0.00**
	(0.033)	(0.033)	(0.033)	(0.033)	(0.034)
	[0.894]	[0.898]	[0.894]	[0.888]	[0.891]
<i>AGE</i>	0.916	0.923	0.916	0.906	0.912
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
<i>FOREIGN</i>	0.00**	0.00**	0.00**	0.00**	0.00**
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
	[0.012]	[0.012]	[0.012]	[0.013]	[0.013]
<i>STATE</i>	0.380	0.329	0.364	0.375	0.308
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
	[-0.006]	[-0.007]	[-0.006]	[-0.006]	[-0.007]
<i>CAPITAL</i>	0.00**	0.00**	0.00**	0.00**	0.00**
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
	[0.055]	[0.052]	[0.054]	[0.056]	[0.054]
<i>POL</i>		0.00**			0.00**
		(0.014)			(0.014)
		[0.072]			[0.071]
<i>CORR</i>				0.429	0.445
				(0.005)	(0.005)
				[-0.004]	[-0.004]
<i>COMP</i>			0.0368*		0.0262*
			(0.016)		(0.016)
			[-0.033]		[-0.035]
Constant	0.000	0.000	0.000	0.000	0.000
	(0.066)	(0.068)	(0.066)	(0.067)	(0.070)
	[-2.870]	[-2.949]	[-2.858]	[-2.866]	[-2.934]
No. of observations	8701	8701	8303	8303	8303

Notes: (1) Standard errors are given in ( ). (2) Coefficients of regression are given in [ ]. (3) The asterisks indicate significance at the following levels: \*\*\* $p < 0.01$ , \*\* $p < 0.05$ , \* $p < 0.1$ .

The results from linear regression are discussed which estimate the second stage of the model ascertaining firm-specific variables of export performance with the dependent variable being export intensity. The independent variables are firm-specific variables which assess a firm's

competence in India as per the hypothesis stated. The independent variables are *Skills* of the labour force, *Adoption of technology by firms* and *Foreign ownership* of technology being used by firms as well as the *IMR* imputed from the stage 1 models.

**Table 5.** Determinants of export intensity

	<i>Model 6</i>	<i>Model 7</i>	<i>Model 8</i>	<i>Model 9</i>	<i>Model 10</i>
<i>SIZE</i>	0.0263*	0.032**	0.039**	0.228	0.309
	(1.814)	(1.815)	(1.788)	(1.942)	(1.904)
	[4.037]	[3.887]	[3.680]	[2.344]	[1.938]
<i>AGE</i>	0.0415*	0.033**	0.033**	0.091***	0.057***
	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)
	[-0.035]	[-0.036]	[-0.036]	[-0.029]	[-0.032]
<i>FOREIGN</i>	0.331	0.255	0.382	0.882	0.970
	(0.093)	(0.094)	(0.092)	(0.114)	(0.112)
	[0.091]	[0.107]	[0.080]	[-0.017]	[0.004]
<i>STATE</i>	0.392	0.374	0.308	0.425	0.308
	(0.330)	(0.329)	(0.325)	(0.327)	(0.321)
	[-0.282]	[-0.293]	[-0.331]	[-0.261]	[-0.327]
<i>CAPITAL</i>	0.741	0.422	0.712	0.380	0.553
	(0.276)	(0.287)	(0.271)	(0.303)	(0.297)
	[-0.091]	[-0.230]	[-0.100]	[0.266]	[0.176]
<i>IMR</i>	0.001**	0.001*	0.001*	0.000*	0.000*
	(1.988)	(1.987)	(1.958)	(2.084)	(2.044)
	[6.584]	[6.508]	[6.259]	[8.100]	[7.846]
<i>SKILL</i>		0.0811***			0.0007*
		(0.040)			(0.047)
		[0.071]			[0.161]
<i>TECH</i>			0.000*		0.000*
			(2.204)		(2.268)
			[-13.669]		[-13.012]
<i>FORTECH</i>				0.188	0.176
				(1.041)	(1.021)
				[1.373]	[1.382]
Constant	0.000	0.000	0.000	0.000	0.000
	(4.714)	(4.936)	(5.481)	(5.151)	(6.430)
	[45.652]	[43.078]	[63.718]	[48.321]	[57.474]
No. of observations	1212	1212	1212	1094	1094

Notes: (1) Standard errors are given in ( ). (2) Coefficients of regression are given in [ ]. (3) The asterisks indicate significance at the following levels: \*\*\* $p < 0.01$ , \*\* $p < 0.05$ , \* $p < 0.1$ .

The results are indicated in Table 5. The Wald test also confirms the goodness of fit of the models assessed and reject the null hypothesis ( $H_0$ ) that the regression coefficients are zero. IMR variables are highly significant and confirm that the error terms of first and second stage regression are correlated. The models appropriateness can be examined by comparing the coefficients of regression of the control variables in the two stages of the model which are *Size*, *Age*, *State* and *Foreign ownership* and *Capital*. Thus,  $H4$  and  $H5$  are supported but not  $H6$  by the results.

## 5. DISCUSSION AND RESULTS

In terms of export propensity, it can be said that larger, foreign-owned and high capital firms facing competition in India foray to overseas markets. In terms of export intensity, it is seen that larger and older firms have a significant relationship with export intensity. *Ownership* and *Capital* are no longer significant in promoting exports or assessing export performance in India. Thus, the results suggest different measures for export propensity and export intensity and thus indicating the usefulness of the two-step model adopted for the study.

On examining the results of firm-specific competences, it is seen that *Skill* and *Technology* are significant in increasing exports thereby indicating skilled workforce leads to the increasing share of exports in total sales and thus indicating firm competitiveness (Wagner, 2007). The use of technology in enhancing exports is significant and thus helps in accessing international markets. However, the use of foreign technology has an insignificant outcome and may be attributed to the domestic factor cost advantages available in India. This may also be due to a large number of firms which export are in the MSME sector or foreign firms operating under joint ventures in India through the investment mode. Alternatively, the correlation between foreign technology and capital is negative which may indicate the use of labour-intensive methods of manufacturing.

The paper has assessed the export performance of firms in India based on institutional and firm-specific variables and further explains the determinants to export and factors which enhance exports (export propensity and export intensity). The hypotheses for the study have been formulated considering the existing literature and through empirical techniques, four of the hypotheses have been confirmed. It is seen that Indian firms will export in situations of high political instability and competition in the domestic market as the intensity of exports of the exporting firms is dependent on the skills of the workforce and technology adopted by these firms. These findings focus on leveraging the relationship between a firm's capabilities and institutional infrastructure in India (Hoskisson, Eden, Lau, & Wright, 2000). The study is a development of existing literature for Indian firms both in terms of theory as well as empirical research. On the theoretical front, the effects of institutions and firms' competencies are examined to analyse export capability and performance and it is seen that though distinct concepts they are deeply related. Eventually, these dimensions are empirically tested and the inherent link between the factors is

further strengthened through techniques (Heckman selection). Thus, the analysis of the export performance of Indian firms in the present study distinguishes it from previous studies which are based on groups of countries or European and American firms.

## 6. CONCLUSION

The study has important theoretical implications in terms of exporting behaviour of firms. The study indicates that the decision of firms to export and their export performance are interlinked. The two-stage theoretical model of export performance of Indian firms adopted in the present study along with hypotheses formulated to assist in further reinforcing the linkage. Most of the past studies focus on either of the two aspects and for a group of countries, while the present study develops a linkage between the two aspects for India specifically. Thus, it is affirmed that export intensity is dependent on firm-specific competencies as institutions indirectly influence the decision of firms to export. Therefore, in line with past literature, joint importance of the selected variables is maintained, and firm strategies can be understood in a better way (Filatotchev, Stephan, & Jindra, 2001; Gaur, Kumar, & Singh, 2014). The institutional factors lead to an imbalance between the firms' requirements and institutional infrastructure (Witt & Lewin, 2007). This imbalance motivates the firms in India to export and diversify operations from domestic to foreign markets (Gonzalez & Lamanna, 2007; Hiatt & Sine, 2014; Lee & Weng, 2013). The institutional factors explain the reason for Indian firms to internationalise through exports and further reinforce existing studies on foraying into foreign markets and thus escaping institutional pressures in domestic markets (Boisot & Meyer, 2008; Witt & Lewin, 2007). The firms also face certain challenges in terms of competencies to export and thus theoretical arguments in favour of developing firms' competencies in terms of skills, technology and foreign share in technology are reinforced which may favour their success in foreign markets (Yi, Wang, & Kafourous, 2013).

In terms of practical implications of the present study, skilled workforce and technology adopted are important but foreign-sourced technology is not that important for Indian firms. It can be concluded that the skilled labour force may be employed in older and larger firms. Older firms have lower export intensities, while larger firms have higher export intensities. In case of India, the use of labour-intensive techniques are still predominant or the products are sourced through intermediaries which may indicate that the skills possessed by the workforce may not be sophisticated. Thus, Indian firms should focus on developing skills and upgrading technology continuously, to have higher export intensities. In terms of policy suggestions, political instability should be addressed and competition in the home country should be healthy as they promote exports. This may lead to an adverse impact on firms operating domestically and thus having a negative impact on the economy. Recent policy measures of *Skill India* and *Make in India* strongly favour access increased access to the skilled labour force and strengthening the



domestic industry which may lead to an increase in export intensity of Indian firms. Similarly, a number of reforms in terms of access to latest technology have been adopted by Government of India like an online assessment of taxes, clearance of exports and payments under *Digital India* which led to the strengthening of export propensities and intensities of Indian firms by reducing corruption indirectly too. Thus, the recent institutional measures adopted favour a stable environment of doing business as well as providing firms opportunities to focus and leverage their competencies in the best possible manner. The current nascent steps of policy reforms need to be aggressively implemented for enhanced export capabilities of Indian firms.

Though the present study provides original and interesting insights for firms exporting from India, there are several limitations which open further avenues for research. First, the study assesses

the country, sector-specific comparative studies will provide a holistic view on promoting exports from the country. Second, the institutional factors are mainly selected based on past studies which may or may not be major obstacles for Indian firms. Thus, other regulatory factors, financial development and labour regulations may be considered for future studies. Third, the enterprise dataset does not cover time-invariant variables which may have a significant impact on firm's export behaviour and with new enterprise surveys being developed over the period of time other estimation techniques may be applied to control heterogeneity. Fourth, a comprehensive examination of links between export performance, firm's competencies and country's institutional infrastructure across sectors and time will facilitate in assessing the firm performance in exports and developing policy recommendations.

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