Performance and Obstacles of SMEs: An Empirical Evidence from BRICS Countries

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ARTICLE INFO

ABSTRACT

This study empirically examines the performance and obstacles of SMEs in BRICS economies. For empirical evaluation, Ordinary Least Square technique has applied by taking the time period between "2000-2017". Performance has taken as dependent variable and obstacles; firm characteristics and global factor have taken as explanatory variables. Results show that ownership and size have a positive impact on SMEs growth and performance. Age has a negative and significant impact on the performance and growth of SMEs. Technology has a positive and significant impact on the performance of SMEs. Obstacles, i.e. courts, crime, access to finance, practices of competitors and electricity has a negative and significant impact on the performance of SMEs. Access to land, infrastructure and workforce has a positive and significant impact on SMEs performance. It becomes essential for the policymakers or investigators to pay attention towards making SMEs more competent, capable and productive to attain the goal of sustainable development and progress.

Corresponding Author's Email: madeehanoshad@gmail.com
Citation: Noshad, M., Amjad, M., Shafiq, M. N., & Gillani, S. (2019). Performance and Obstacles of SMEs: An Empirical Evidence from BRICS Countries. *IRASD Journal of Economics*, *1*(2), 113–131. https://doi.org/10.52131/joe.2019.0101.0010

1. Introduction

In the 20th century, SMEs had been seen the pillar for the growth process of countries and have equal importance for both the developing and developed world. SMEs are supposed as a significant part of a vibrant and knowledge-based economy. Existing theories regarding SMEs are redesigned, but still, some factors remained missing for the measurement of performance and obstacles of SMEs. Major theories had been developed for the obstacles of SMEs, i.e. financial constraint, competition, corruption, political instability and high cost of production but these theories had been slightly concerned with the influence of the growth pattern of SMEs in BRICS countries.

The whole period of the 20th century was occupied by SMEs including the development of economic theories, enhancing the GDP and economic growth. Small and medium enterprises have attracted significant attention of researchers because of their importance and contribution to the economy. The groundwork of SMEs can be traced from the work of (Subrahmanya, 2015) who investigated that small firms are "entrepreneurial" in nature and positively contribute towards sales growth as compared to the mature and bigger firms.

Vijayakumar (2013) reported that SMEs are significantly contributing to improving economic growth and reducing poverty in developed countries in general and particular in developing countries. From those scholars, (Meyer & Meyer, 2017) emphasized that in many developing and developed economies, gross domestic product rate increased due to SMEs. SMEs play a role of significant and a paying aspect in enhancing the GDP and economic growth. SMEs contributes 50 % to GDP in many countries i.e. Turkey (53.9%), China (58 %), UK (52%), USA (54%), Egypt (80%), Italy (68%), France (58%), Spain (62%), Germany (53%), Greece (75%). In South Africa, it has been reported that 91% of bodies of the official corporate are SME's. They are also contributing 57% towards GDP and increase 61% employment rate. According to the UNDP (United Nations Development Program), 90% of business around the world is being carried through SMEs, and they provide 60 percent of employment and contribute 58 percent to gross value added.

The empirical shreds of evidence of the study of (Subrahmanya, 2015) that have shown that one of the highlighted sources by which SMEs become enabled to make more contributions in development is their competency to realize innovation. SMEs are more flexible, adaptable, close to their customers and implement new ideas. These qualities, along with organization structure, are facilitating these firms to be innovative. Globalization has opened a new global business environment for the enterprises. SMEs are making substantial contributions towards economies of developing and developed countries as well, and the rate of employment through their contributions is reached up to 93% in various economies. Internationalization of SMEs improves their knowledge and ideas, which therefore leads their economies of scale. Beck, Demirgüç-Kunt, and Maksimovic (2005) reported that many factors have an impact on SMEs' growth like human capital, technology and the economic condition of the country. Particularly in developing countries, the poor infrastructure and weak regulatory system hinder the growth of firms. Moreover, SMEs of developing countries face a lack of skills to manage, access to finance and high tax rate etc. Performance of SMEs might be influenced by both inner and externals environmental aspects.

Although plenty of studies devoted their entire attention towards obstacles of SMEs, only a few studies have empirically claimed that how these obstacles impact the performance of SMEs in BRICS. Still, evidence related to moderating effects of obstacles is quite conflicting regarding the relationship among technology and performance of SMEs as the prior studies have faced some limitations. Limited studies have explained that how firm characteristics in BRICS countries promote small and medium entrepreneurship. The main limitation was the prior researchers devoted their all attention towards a single dimension that is obstacles. Limited amount of research focuses on obstacles, firm characteristics and global factor together.

Furthermore, this study updates the research by using the latest dataset. SMEs are a substantial part of a vibrant and knowledge-based economy and have equal importance for both the developing and developed world. By using World Bank data, which indicate that the study of emerging countries is essential, which is why this research focuses on the BRICS countries. BRICS appear to become the largest group of the global economy by the middle

of this century. By 2020 these five BRICS countries will contribute in the future almost half of the total global GDP.

Wang (2016) stated in his studies that the accessibility of funds is considered as the most critical hindrance, and it significantly constrains the progress of SMEs. The part of the management for financing SMEs is predominantly captivating, and the core obstacles to external financing are high borrowing costs and deficiency of consultant support. The main obstacles placed in the path of SMEs growth, i.e. access to investment and high cost of production. In emerging economies, SMEs tentatively create the most functioning firms. According to Goldman Sachs prediction, China and India are leading worldwide suppliers of services and manufactured goods. However, Russia and Brazil are considered as leading raw material suppliers in the world. Lee (2014) reported that policymakers or researchers must focus on how to make SMEs work efficiently and achieve sustainable growth. Policymaker should make sure that existing SMEs perform efficiently by overcoming the challenges faced by them. Challenges related to SMEs growth include the shortage of skill, access to finance and cash flows.

The BRICS economies were established in 2010.BRICS involve five evolving countries, i.e. Brazil, Russia, India, China, and South Africa. In 2016, BRICS had a total of 3.1 billion populations (43%), and its nominal GDP was $16.04 trillion (32%). SMEs in India and China give rise to half of the GDP and employment opportunities. The progress and growth of SMEs is the primary task of BRICS economies (Bazhenova, Taratukhin, & Becker, 2012).

By overviewing past literature and covering the academic gap in the research area of SMEs, this study is presented to examine that to what extent obstacles impact the performance of SMEs in BRICS countries also to analysis and observe the influence of firms characteristics on small and medium entrepreneurship as well as examine that whether global factor impacts the performance of SMEs in BRICS. This study is elaborated by taking obstacles faced by SMEs along with firm characteristics and global factor, i.e. technology which is previously backed up by BRICS countries. The review is done associated with the debate of the study. In a literature review, a review of articles is done regarding the development of SMEs in BRICS economy. The data collection method and research methodology are being discussed for the research purpose to examine the empirical technique applying on the dataset. Empirical results are reported with tables. Results, conclusion and policy implications are discussed.

2. Literature Review

Singh, Garg, and Deshmukh (2009) investigated that in all countries, SMEs reflect as a pillar for financial progress and expansion because they perform 80% in the economic progress of the world. In East Asia, it also contributes a considerable portion in exporting the industrial products. In developing countries, SMEs plays a significant part in job-creating opportunities and accommodates a bulk of the workforce in their businesses. SMEs also contribute towards reducing poverty in many developing countries. In the industrial sector, SMEs turn as a skilled and cheaper seller of sub-assemblies, fragments, and gears to huge corporations. The production of this machinery in their own production house becomes costly for large corporations.

Beck (2007), examined that younger and national SMEs are more affirmed to financial constraints even after regulating the other organization features. The possibilities of financial constraint for small organization's are 39 %, for medium organization's, it is 36%, and for large corporations, it is 32%. Bank provides below 10% finance to the small

firms and above 20% to the large firms to fulfil their speculation requirements. In contrast to large corporations, SMEs funded their new investments mostly through equity, inner reserves, and unofficial finance. SMEs used just 12% bank credit to fund their investment projects, while it is 30% for the large organization's. These financial hurdles affect the SMEs growth twofold as compared to the large firms. Some scholars examine that SMEs are more inhibited in the process and growth contrary to large firms. In emerging and unindustrialized economies, one of the main constraints which hinder their growth is to get finance. Fiscal institutes in developing countries are more hesitant to reach out towards these small firms and discuss strategies to get outdoor funds quickly. SMEs have faced more hindrances to get finance as compared with large firms; it is because of official and market letdowns produces a rough playing ground among SMEs and large firms. Increases in the corporation's registration cost hinder the formation of a new firm, whereas proper rules and protection of property rights encourage financial access and growth of SMEs (Ayyagari, Demirgüç-Kunt, & Maksimovic, 2008; Beck, 2013; Chavis, Klapper, & Love, 2010; Wang, 2016).

Business (2012) examined that SMEs are generally in case of information, modernization, practical speculation, commercial operation, and sound administration are not very competitive. These aspects are important in upgrading the quality of the manufacturing process. Competition signifies a risk for the existence of separate companies. But the extreme rate of risk enables the corporations to enhance their production process, which results in a high rate of progress and development. The main obstacle challenged by SMEs is the biased competition in terms of tax structure, public facilities, and the informal economy. The biased competition mainly hinders the investment process. Customers have a negative attitude about homegrown goods and gathering of imported goods is more favorite among them. This negative attitude is caused by the absence of assurance towards the quality of local goods, and it hinders the progress and development of SMEs.

Morrison (2012) analyzed that businesses have been affected by different macroeconomic aspects, for example, governmental situation, financial, public, technical and lawful issues. These external issues were out of the control of SMEs, as they hardly exaggerated by administration decisions. There were various aspects which affect the functioning and progress of SMEs, i.e. corruption, financial constraint, competition among companies and management strategies, etc. Deficiency of working capital is also a major issue for SMEs growth and development. SMEs mostly assemble their private capital and funds to enlarge their corporate. Govori (2013) examined that corruption was almost dominant in all developing countries. It creates difficulties for the entrepreneur and inhabitants. Corruption affects both external and local investment in the country. Administration policies, i.e. rules that allow enterprises to function competently and the rules that lessen their production cost etc. contribute towards progress and development of SMEs. These strategies represent the status of SMEs in their country. These are the only originalities from the managing authorities for SMEs to promote their development and decrease poverty. There was an absence of rule and sincere organizational strategies, namely the availability of support from the management agencies. Controlling formal situation for free enterprise denotes that government monitoring strategies boost the formation of innovative corporate, creation of new machinery and subsidies firm strategic performance as offering financial support to the businesses involved in internationalization. Underdeveloped monitoring framework leads to firms in using substitute behaviors to lessen the risk of uncertainty. To satisfy the official voids, informal connections are settled between management officials and the firms.

Schiffer and Weder (2001) examined that size of the firm was linked to its efficiency, its subsistence and productivity. There were important challenges which have to be faced

for the up-gradation of SMEs. Big firms internationalize most of the investment distribution function supported by economic markets and financial mediators. Therefore, minor firms get unequal profits from the financial markets and organization's. Further, big firms are more liable to duty the reserve of a weak financial structure and are more liable for enduring funding and huge mortgages than the small companies. Size of the firm is a key aspect in determining in what way other features control the progress of firms. Small firms must face harder difficulties in getting financial support, accessing the authorized structure and to avoid corruption. Size of firms indirectly affects the progress and efficiency of small firms. All problems are expressively lesser in wealthier, more prominent and fast-growing economies. Some researcher examined that increase in firm size can infer an excessive need for accuracy in the association between several representatives contributing to the business activity. This was because of the possibility of regulating the administration action decreases with the increase in firm size. Small businesses specified the smaller firmness of their administrative structure and bargained it simpler to distinguish advanced prospects. Similarly, small businesses have more capability to regulate innovation development and establish links with other companies. Thus, an increase in firm size not essentially surge the process of firm's growth and performance(Goddard, Tavakoli, & Wilson, 2005; Rogers, 2004).

Subrahmanya (2015) examined that small firms have more talent to generate employment opportunities, enhance financial growth process and changes and to adopt innovation. The capability of small SMEs towards innovation undertakes significance as the invention was generally known as a vital aspect of competition among state, multinationals and regions. SMEs that effectively included innovation have raised their chance of existence and progress. Innovative SMEs are more capable of high growth rates. The strength and important policies of innovative SMEs were more than the non-innovative SMEs. Small innovative businesses are entrepreneurial and have an extraordinary rate of sales growth than the older and bigger firms whose aim is just to raise one's salary rather than to become innovative. Laforet and Tann (2006), analyzed that structural innovation has raised the output, border, marketplace guidance and operational environment. Structural innovation has a considerable effect on SMEs performance. The organizational invention enables corporations to work beyond their core capability. Companies must stabilize their inputs and productions so that the innovation process does not affect the internal and outdoor environment of companies adversely because the production cost of firms increased. Because of the availability of fewer resources, i.e. skilled labor force, investment, and material, etc. in SMEs, their innovation cost expressively is higher than the big corporation. Funds are not only the issue which hinders innovation process in SMEs; high risk of uncertainty is also one of the obstacles in the innovation process among SMEs. SMEs essentially sidestep the unexpected invention results because they become more risk-averse if invention results in a flop. Innovation setting is a precondition for structural innovation. Innovative firms must take an innovation setting which involves risk-taking confidence, preparedness to acquire and an invention policy as a portion of their general, occupational strategy.

3. Research Methodology

Following the research objective of current research, this study adopts the econometric model and technique applied, i.e. pooled regression model because quantitative research methods are essential for the achievement of the research objective mentioned before. It is recommended that quantitative research methods are highly suitable for testing the hypotheses, which are deducted from agency theory. The pooled cross-sectional data for this study is collected from the World Bank enterprise survey (WBES) from the period 2000 to 2017. Cross-sectional statistics is the joint type of data in economics, which consist

of the number of entities on a given point in time. These entities have variations overtime period, i.e. cities, firms, countries, etc. These entities generally measured in a time duration provided, i.e. profit earned by the firm in 2009 and the population of a city in 2008 etc. In the case of cross-sectional data, the sequence of observation of data is random. An identifier variable is present in cross-sectional data, i.e. ID, code, etc.

Microeconomics dataset can also be organized in pooled cross-sectional data, in which both subscripts i and t are present (Baltagi & Baltagi, 2001). Pooled cross-sectional data observe both individual and time measurement of economic behavior. SMEs performance is the dependent variable and is measured through the proxy of productivity growth and sales growth, while the independent variables include obstacles, firm characteristics and global factor. These variables selected from the literature that discussed mostly as the SME's performance determinants. The obstacles, as identified in the literature, vary across countries. These proxies and sources of these variables are reported in the table given below.

This study used pooled cross-sectional data that have other variables gather at a single fact in time. To identify the obstacles which impact more on the performance of SME's countries, this study has developed a general mathematical model.

Performance = f (Obstacles, Firms characteristics, Global Factor) (1)

Where,

Obstacles= Access to finance, Corruption, courts. Infrastructure, workforce, Access to Land, Electricity, Crime, Practices of competitors

Global Factor = Innovation and Technology
Firm Characteristics **=** Firm Age, Ownership and Firm Size

$$P_{i,k} = \alpha + \beta(OBC)_{i,k} + \sigma(FC)_{i,k} + \delta(GF)_{i,k} + \mu_{i,k} \qquad (2)$$

Where performance represents the dependent variable, i.e. α, β, σ, and δ are the parameters to be valued in this equation. μ is the error term. Performance is the dependent variable measured by the proxy of actually early sales growth and yearly labor output growth. This proxy is used in literature by (Chadee & Roxas, 2013; Kamunge, Njeru, & Tirimba, 2014; Wang, 2016). An obstacle of infrastructure is measured by the proxy of the duration of insufficient water supply. The obstacle of the workforce is measured by the proxy of the total number of years of the highest management experience at work in an organization. The proxy of losses measures the obstacle of crime because of robbery and destruction counter to the firm. While other obstacles are measured by the proxy of corruption, electricity provision, law court hinders, and practice of competitors in the informal sector. Global factor, i.e. Innovation and Technology, measured as the percentage of firms having their website. Firm Characteristics is measured by proxy of age (years), size (Small, Medium, Large) and ownership (Foreign, Domestic).

$$Y_{it} = \beta_0 + \beta_1(X_{it}) + \mu_{it} \qquad (3)$$

$$P_{i,k} = \alpha + \beta(OBC)_{i,k} + \sigma(FC)_{i,k} + \delta(GF)_{i,k} + \mu_{i,k} \qquad (4)$$

Ordinary least square method has specific arithmetical properties. Numerical properties are those which are necessary for the result of using the OLS method. These properties are independent of the way used to generate the dataset(MacKinnon, 2006).

This study has examined the problem of heteroskedasticity, diagnostic tests were made, and the outcomes of these tests were stated in appendix. Reported results in tables represent that P-value of F-statistics of the intercepts was changed among pooled cross-sectional economies. So, Ordinary Least Square method was appropriate for the empirical evaluation of results. This study has checked the homoscedasticity of data, the Breusch-Pagan test was performed to check the issue of heteroskedasticity. Both dependent and predictor variables were examined for this issue. Evaluated results confirm that no heteroskedasticity was present in the dataset. Results were stated in (Appendix).

4. Empirical Results (Regression analysis)

In table 1, the impact of a firm's characteristics checked on the performance of MNCs by taking the proxy of sales growth. Estimated results have shown that ownership is positively associated with performance and is significant.

Table 1
Dependent variable: Performance (Sales growth)

Variables	Coefficients
Constant	4.193 ***
Ownership(Foreign)	0.037 ***
Size(large)	0.428**
Age	-0.116 ***
F-stat (p-value)	37.88***
R-squared	0.07
No of Observation	26397

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Size is positively associated with performance and is significant. Age is also positively associated with performance and is significant.

In table 2, the consequences of obstacles are checked on the performance of MNCs by taking the proxy of sales growth. Estimated results show that access to finance is negatively associated with performance and is significant. Access to land is positively associated with performance and is significant. Court hindrance also is positively associated with performance and is significant. Competitor's practices are negatively associated with performance and are insignificant.

In table 3 combine the influence of obstacles, firm characteristics and technology are checked. Estimated results represent that ownership is positively associated with performance and is significant. Size is positively associated with performance and is insignificant. Age is negatively associated with performance and is significant. Access to finance is negatively associated with performance and is significant. Access to land is positively associated with performance and is significant. Court hindrance is also negatively associated with performance and is significant. Crime is negatively associated with performance and is significant. Competitor's practices are negatively associated with performance and are insignificant. Infrastructure is positively associated with performance and is significant. The workforce is positively associated with performance and is significant. Technology is positively associated with performance and is significant.

Table 4 shows that firm characteristics have more impact on the performance of SMEs when its impact on performance is checked. While in case of a combine, affect its overall effect would decrease.

Table 2
Dependent variable: Performance (Sales growth)

Variables	Coefficients
Constant	3.062 ***
Lack of access to finance	-0.009 *
Access to land	0.033 ***
Court hindrance	-0.045 ***
Practices of competitors	-0.008
F-stat (p-value)	7.902***
R-squared	0.02
No of Observation	26397

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 3
Dependent variable: Performance (Sales growth)

Variables	Coefficients
Constant	2.511 ***
Ownership(Foreign)	0.026 **
Size(large)	0.296
Age	-0.094 ***
Lack of access to finance	-0.014 **
Crime	-0.253 **
Infrastructure	0.048 *
Workforce	0.038 *
Court hindrance	-0.028 *
Access to land	0.025 **
Practices of competitors	-0.008
Technology	0.013 ***
F-stat (p-value)	9.64 ***
R-squared	0.01
No of Observation	26397

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 4
Dependent variable: Performance (Sales growth)

	Variables	Coefficients
Firm characteristics	Ownership(Foreign)	0.037 ***
	Size(Large)	0.428 **
	Age	-0.116 ***
Obstacles	Lack of access to finance	-0.014 **
	Crime	-0.253 **
	Infrastructure	0.048*
	Workforce	0.038 *
	Court hindrance	-0.028 *
	Access to land	0.025**
	Practices of competitors	-0.008
Global factor	Technology	0.013 ***

In table 5, combine the influence of all variables in the case of Brazil is evaluated. Estimated results show that ownership is positively associated with performance but is insignificant. Size is positively associated with performance and is insignificant. Age is negatively associated with performance and is significant. Access to finance is positively associated with performance and is insignificant. Crime is negatively associated with performance and is significant. Court hindrance is also positively associated with performance and is insignificant. Access to land and technology is positively associated with performance and is significant, but technology is insignificant in this case. Infrastructure and

workforce are negatively associated with performance. Competitor practices are negatively associated with performance and are significant. Combine the effects of all variables in the case of Russia is evaluated.

Table 5
Dependent variable: Performance (Sales growth)

Variables	Brazil	Russia	India	China	South Africa
Constant	5.13	3.329	1.51**	1.826	9.06 ***
Ownership(Foreign)	0.038	0.032	0.028	0.024	-0.006
Size(large)	1.214	-1.617	0.693 **	0.472	-0.45
Age	-0.166 **	-0.047	-0.096 ***	-0.125 *	-0.065 **
Lack of access to finance	0.019	-0.001	-0.015 **	-0.019 *	-0.006
Crime	-0.819 ***	-0.137	0.03	1.474	-0.402
Infrastructure	-0.176	0.049	0.422 ***	0.325	0.067
Workforce	-0.055	0.042	0.041 *	0.084	0.024
Court hindrance	0.072	-0.065	-0.037 ***	0.527 ***	-0.053
Access to land	0.159 *	-0.016	0.029 **	0.018	0.082 **
Practices of competitors	0.026	-0.028	-0.014 **	0.008	-0.033
Innovation and technology	0.019	0.031	0.014 ***	0.021 **	-0.028 **
F-stat (p-value)	2.25 **	0.542	11.45 ***	3.47 ***	2.68 ***
R-squared	0.03	0.06	0.02	0.02	0.05
No of Observation	26397	26397	26397	26397	26397

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Estimated results show that ownership, infrastructure, workforce, and technology are positively associated with performance but are insignificant. Size, age, access to finance, access to land, crime, court, and competitor practices are negatively associated with performance and are insignificant. Now combine the effects of all variables in the case of India is evaluated. Estimated results show that ownership is positively associated with performance, but it is not significant. Size is positively associated with performance and is significant. Age is negatively associated with performance and is significant. Access to finance has a significant connection with performance but in a negative direction. Crime is positively associated with performance but is insignificant. Court hindrance also is negatively associated with performance and is significant. Access to land, infrastructure, workforce, and technology is positively associated with performance and is significant. Competitor practices are negatively associated with performance and significant. Now we evaluate the combined effects in case if the individual economy of China.

Table 6
Dependent variable: Performance (Productivity growth)

Variables	Coefficients
Constant	-1.093 **
Ownership(Foreign)	0.020 **
Size(Large)	-0.789 ***
Age	0.026 **
F-stat (p-value)	5.83 ***
R-squared	0.01
No of Observation	26397

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

In table 6, the impact of a firm's characteristics is checked on the performance of MNCs by taking the proxy of productivity growth. Estimated results show that ownership has a positive and significant relationship with performance. Size has a negative and

significant relationship with performance. Age also has a positive and significant relationship with performance.

In table 7, the impact of obstacles is checked on the performance of MNCs by taking the proxy of productivity growth. Estimated results show that access to finance has a positive and significant relationship with performance. Corruption has a positive and significant relationship with performance. Electricity also has a positive and significant relationship with performance.

Table 7
Dependent variable: Performance (Productivity growth)

Variables	Coefficients
Constant	0.209 ***
Lack of access to finance	0.005 ***
Corruption	0.005 **
Electricity	0.006
F-stat (p-value)	5.098
R-squared	0.01
No of Observation	26397

*** p<0.01, ** p<0.05, * p<0.1

In table 8, combine the effect of obstacles, firm characteristics and technology are checked. Estimated results show that ownership has a positive and significant relationship with performance. Size has a negative and significant relationship with performance. Age has a negative and significant relationship with performance. Access to finance has a negative and significant relationship with performance. Corruption also has a positive and significant relationship with performance. Electricity has a negative and insignificant effect on performance. Technology also has a positive and significant effect on performance.

Table 8
Dependent variable: Performance (Productivity growth)

Variables	Coefficients
Constant	-1.379 ***
Ownership(Foreign)	0.020 **
Size(Large)	-0.990 ***
Age	0.024 *
Lack of access to finance	-0.012 **
Corruption	0.010 **
Electricity	-0.001
Technology	0.011 ***
F-stat (p-value)	5.180
R-squared	0.03
No of Observation	26397

*** p<0.01, ** p<0.05, * p<0.1

Table 9
Dependent variable: Performance (Productivity growth)

	Variables	Coefficients
Firm characteristics	Ownership	0.020 **
	Size	-0.789 ***
	Age	0.026 **
Obstacles	Lack of access to finance	-0.012 **
	Corruption	0.010 **
	Electricity	-0.001
Global factor	Technology	0.011 ***

Table 9 shows that firm characteristics have the same impact on the performance of SMEs when the individual impact and combine effect is checked on the performance of SMEs.

In table 10, combine the effects of all variables in the case of Brazil is evaluated. Estimated results show that size has a negative and significant relationship with performance. Ownership, age and access to finance have a positive and insignificant relationship with performance. Technology, corruption, and electricity have a negative and insignificant relationship with performance. The effect of all variables in the case of Russia is evaluated. Estimated results show that access to finance and size has a negative and insignificant relationship with performance. Ownership, corruption, and electricity have a positive and insignificant relationship with performance. Technology and age have a positive and significant relationship with performance. Combine the effects of all variables in the case of India is evaluated. Estimated results show that access to finance and size has a negative and significant relationship with performance. Ownership, corruption has a positive and insignificant relationship with performance. Age and electricity have a negative and insignificant relationship with performance. Technology has a positive and significant relationship with performance. Now evaluate the combined effects in case if the individual economy of China. Estimated results show that ownership and age have a positive relationship with performance, but age is insignificant. Size has a negative and insignificant relationship with performance. Access to finance and technology has a negative and insignificant relationship with performance. Corruption and electricity have a positive effect on performance, but it is insignificant. The effect of all variables in case of the individual economy of South Africa is evaluated. Estimated results show that access to finance, ownership, age, corruption, and size has a positive and insignificant relationship with performance. Electricity has a positive and significant relationship with performance. Technology has a negative and significant relationship with performance.

Table 10
Dependent variable: Performance (Productivity growth)

Variables	Brazil	Russia	India	China	South Africa
Constant	3.716	-1.747	-1.016*	-4.59 ***	-2.985 **
Ownership(Foreign)	0.058	0.033	0.014	0.030 *	0.009
Size(Large)	-3.231 **	-1.457	-0.583 **	-0.139	0.152
Age	0.063	0.101 *	-0.016	0.010	0.034
Lack of access to finance	0.025	-0.008	-0.015 **	-0.005	0.002
Corruption	-0.040	0.002	0.004	0.016	0.021
Electricity	-0.113	0.009	-0.006	0.002	0.023*
Technology	-0.014	0.031 **	0.016 ***	-0.007	-0.018 *
F-stat (p-value)	1.715*	1.498	4.590***	0.752	1.302
R-squared	0.13	0.04	0.04	0.02	0.12
No of Observation	26397	26397	26397	26397	26397

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

4.1. Discussion

Estimated results have shown that ownership puts a positive and significant impact on SMEs growth and performance. Size puts a positive impact on SMEs performance, but its value is not significant. Variable of age put a negative and significant impact on the performance and growth of SMEs. These results are evident from (Damanpour, 1996; Farinas & Moreno, 2000; Hitt, Hoskisson, & Ireland, 1990; Sørensen & Stuart, 2000; Subrahmanya, 2015). So, the above results show that study can reject its null hypothesis

while accepting the alternative that SMEs will be likely to perceive that obstacles most significantly affects their performance and growth in BRICS countries.

Older organization's are mostly inflexible and are having governmental structures. These organization's do not change their methods of production due to the internal pressure they are fronting. These firms do not show a productive response towards the improvement of innovation and technology, as; old firms have lesser administrative assurance in the direction of innovation. This would have a negative impact on the performance of SMEs. Size of SMEs also highly contributes towards growth and performances. Small organization's often face more difficulties in getting finance, approaching legal arrangements and to overcome corruption. Size of the organization's indirectly influences the performance of SMEs. Firms having small size have to face more obstacles as compared to large firms. Small firms characteristically have more resource limitation and take fewer administrative slack than big organization's.

Estimated results show that variable of size puts a negative and significant impact on the performance of SMEs when productivity growth is used to measure the performance of firms. These results are evident (Longenecker, Moore, Petty, Palich, & McKinney, 2006; Marlow, 2009).

Failure of small firms in emerging economies is mostly more significant than that of the established economies. One of the key hindrances regarding the growth of SMEs is the undesirable insight towards SMEs. Likely, customers distinguish that firm with smaller size is deficient in offering quality facilities and are further critical to satisfying their customers than the large firms. Frequently large firms are chosen and specified corporate for their blow in the business and tag identification alone. Deficiency of scheduling, inadequate funding, and deprived supervision are the key reasons for the failure of SMEs.

Estimated results show that variable of technology puts a positive and significant impact on the performance of SMEs. These results are evident from (Cui, Jiao, & Jiao, 2016; Subrahmanya, 2015). So, the above results show that study can reject its null hypothesis while accepting the alternative that SMEs will perceive that globalization factors such as technology affect their performance.

Structural innovation raises the output, border, marketplace guidance, and operational environment. Structural innovation has a significant effect on SMEs performance. The organizational invention enables corporations to work beyond their core capability. Companies must stabilize their inputs and productions so that the innovation process does not affect the internal and outdoor environment of companies adversely because the production cost of firms increased.

Estimated results show that obstacles, i.e. courts, crime, access to finance, practices of competitors and electricity put a negative and significant impact on the performance of SMEs. While access to land, corruption, infrastructure, and workforce, all these factors put a positive and significant impact on SMEs performance. These results are evident from (Ali, Fiess, & MacDonald, 2010; Beck, Demirguc-Kunt, & Levine, 2005; Mbonyane & Ladzani, 2011; Roe & Siegel, 2011). So, the above results show that study can reject its null hypothesis while accepting the alternative that SMEs will be likely to perceive that obstacles most significantly affects the performance and growth of SMEs in BRICS countries.

One of the major restraints in developing countries which hinder their growth is access to finance. Economic institutes in developing countries are more hesitant to extend these small firms and discuss strategies to get the outdoor finance easily. SMEs have faced

more hindrances in regard to getting finance as compared to the large firms; it is because of official and market letdowns which can create an irregular playing ground among SMEs and large firms. Increases in the corporation's registration cost hinder the formation of a new firm, whereas proper rules and protection of property rights encourage financial access and growth of SMEs. So, lack of access to finance negatively influence the productivity of small firms.

SMEs generally in case of information, modernization, practical speculation, commercial operation, and good administration are not very competitive. Competition signifies a risk for the existence of separate companies. The main obstacle challenged by SMEs is the biased competition in terms of tax structure, public facilities, and the informal economy. The biased competition mainly hinders the investment process. Customers have a negative attitude about homegrown goods and gathering of imported goods is more desired among them. This negative attitude is caused by the absence of assurance towards the quality of local goods, and it hinders the progress and development of SMEs.

Developing economies have weaker financial and legal structure have a high value of corruption and are listed in more corrupt economies. Increase in corruption positively influence the performance of SMEs is due to the increase in age of the firm government provides tax relaxation and other inducements to these firms to raise their production capacity which positively influences the performance of SMEs. In the case of overall BRICS economies, corruption has significantly affected the performance of SMEs. These results are evident from(Dut, 2015). While in the individual country, because of small firms; its impact is not obvious and is insignificant. In developing economies, mostly there occurs a shortage of infrastructure. Due to insufficient infrastructure inflow of investment in the country would decrease, which impacts the growth and performance of SMEs in those economies. Most of the profit-seeking businesses in the economies will be restricted due to inadequate infrastructure. Poor infrastructure includes bad conditions of roads, not approachability towards land, lack of electricity and workplace. There is also a deficiency of appropriate land in both urban and rural zone which hinders the growth and progress of SMEs (Kamunge et al., 2014).

5. Conclusion

This study has set out to empirically explore the factors which influence the performance and obstacles of SMEs' in BRICS economy. For empirical valuation pooled, cross-sectional data were taken over the period 2000-2017 from World Bank enterprise survey (WBES). The observed model evaluates the obstacles, firm characteristics and global factors affecting the performance of SMEs in BRICS economy. On cross-sectional pooled data, Ordinary Least Square method was applied to estimate the empirical results.

Estimated results were outlined as ownership and size put an encouraging influence on SMEs growth and performance. Age puts a negative and significant influence on the performance and growth of SMEs.Technology has a positive and significant impact on the performance of SMEs. Obstacles, i.e. courts, crime, access to finance, practices of competitors and electricity has a negative influence on the performance of SMEs and is significant. Access to land, infrastructure, corruption and workforce are positively associated with SMEs performance and are significant.

SMEs are generally dynamic organisations. SMEs have two main goals, i.e. to enhance the profit and productive capacity of the firms or organisations. In developing economies, mainly SMEs face the issue of funding which hinders the growth rate of SMEs. Large corporations internationalise the supply of investment function. Economic

intermediaries mainly back these investments. So, there occurs an uneven distribution of profits among the large and small firms by the economic marketplaces.

Further, big firms are more liable to duty the reserve of a weak financial structure and are more liable for enduring funding and huge mortgages than the small companies. Size of the firm is a key aspect in determining in what way other features control the progress of firms. There occur certain conflicts among large corporations and SMEs which include different organisational setting, the capability to make decisions and the progression of the struggle between them. Meanwhile, their competitive compensations incline to be fewer supportable as the situation varies. Small and medium enterprises are generally in terms of information; modernisation, practical speculation, commercial operation, and good administration are not very competitive. These aspects are important in upgrading the excellence of the manufacturing process. Due to the increase in the existence of individual firms and corporations, there exists more competition among them with the increase in competition the fear of risk will also increase. Due to the increase in the degree of risk, each firm upgrades its productive capacity to achieve the goal of progress and expansion of the firm.

Technical modernisation results in a higher presentation by adapting capitals and cooperating through partners. Workers training are cooperative for technological innovation by encouraging social and association knowledge practices. Company's formal characteristics affect the business tendency for technical invention. Businesses whose possession partly depends upon government asset tend to involve in fewer innovative activities.

5.1. Policy Recommendations

It is to be recommended that board of directors of SMEs have to develop a directorate should form a commission to outline SMEs, official procedure to remove uncooperative strategies and difficulties for those firms who choose to register their corporate. It is the responsibility of the government of each economy to provide a satisfactory professional environment for SMEs in BRICS economy and can eradicate all hindrances faced by them in the way of raising their firm performance. Proper strategies should be made to remove the problem of access to the official finance and to upgrading the productive capacity of SMEs to that extent so that they can easily get finance from banks and other formal institutes. It becomes significant for policymakers or investigators to pay attention towards making SMEs more competent, capable and productive to attain the goal of sustainable development and progress. SMEs are fronting many obstacles, i.e. shortage of availability of finance, expertise inflow of foreign exchange, etc. and encounters, i.e. corruption and competition, etc. So, policymakers must verify that SMEs should have the capability to overcome these obstacles and problems by working competently. Formation of policies and strategies for the SMEs must be justified by opinion,

- Mostly progress and evolution of the economy depends upon the expansion of SMEs
- SMEs are more capable of absorbing innovation and technology than other firms.
- SMEs absorbs most of the workforce of an economy, so, it reduces poverty and can create employment opportunities in the economy.
- The production process of SMEs is mostly controlled or restricted by organisational failure.
- Increases in the corporation's registration cost hinder the formation of a new firm, whereas proper rules and protection of property rights encourage financial access and growth of SMEs.

This research can help the policymakers in making certain strategies and policies regarding the obstacles faced by SMEs, i.e. access to finance, access to land, competition, corruption, and administrative constraints, etc. For future research, more obstacles, i.e. exchange rate, trade regulations, tax rate etc. should be added to get the more obvious impact of obstacles on firm performances. Additionally, a comparative study has to be conducted by taking other economies other than BRICS. This research is based on perception-based data if our data is real, then results will be more precise**.** Though, this study is a key step in finding the features which influence the performance and obstacles of SMEs' in BRICS economy. It is likely that this study inspired the discussion and boosts the additional facts regarding this area of investigation.

Conflict of Interests/Disclosures
The authors declared no potential conflicts of interest w.r.t the research, authorship and/or publication of this article.

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