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Examining the Effect of Informal and Foreign Competitors on Innovation and Export: Evidence from Service SMEs

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ABSTRACT

Threats from informal and foreign competitor groups have been particular importance for local emerging economy firms' strategies. In this line, previous studies have examined the link between competitor groups and emerging economy firm success. Extant studies have mostly explored firms in the manufacturing sectors and they have not investigated what the results mean for smaller firms. To extend prior research, this paper examines to what extent informal and foreign competition affect the innovation and export performance of service SMEs. In analyzing cross-sectional data across Eastern Europe and Central Asia countries, this research finds that informal and foreign competition increase service SMEs' innovation performance and the informal competition has bigger effect than foreing competition. The findings further reveal that informal competition decreases service SMEs' export performance whereas foreign competition raises service SMEs' export performance. Overall, this research aims to extend the existing literature that explores the influence of competition on firms' strategies and decisions.

Keywords: Informal Competition, Foreign Competition, Service Sector, SMEs, Innovation, Export Performance.

JEL Classification Codes: L80, O31, O14, F10, K40

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INTRODUCTION

Informal and foreign competitors have attracted considerable research attention in developed economies (Chen & Macmillan, 1992; Chen, 1996). Studies in emerging economies have also drawn their attention towards informal competitors (McCann & Bahl, 2017; Schneider, 2002; Williams & Kosta, 2020) and foreign competitors (Cui, Meyer & Hu, 2014; Fu, Pietrobelli & Soete, 2011; Iriyama, Kishore & Talukdar, 2016; Ozturk Kose, 2023). Informal firms are defined as unregistered with the government but derive income from the production of legal goods and services (Darbi, Hall & Knott, 2018; McGahan, 2012; Nichter & Goldmark, 2009). These competitors are typically small and have fewer resources and capabilities. Foreign competitors refer to foreign firms that are active within a host country (Nuruzzaman, Singh & Pattnaik, 2019). These competitors have certain advantages, such as abundance of resources, skilled employees, and experienced managers. Foreign competitors also enjoy a great level of advanced technologies compared to emerging economy firms (Wiersema & Bowen, 2008). Foreign competition hence affects the local formal firms' strategies and performance (Bowen & Wiersema, 2005).

So far, extant literature has explored to what extent informal and foreign competition affect formal firms' success and strategies. For example, previous studies have examined the effect of informal competitors on new product introductions, annual sales, corruption, and tax evasion (Gokalp, Lee & Peng, 2017; McCann & Bahl, 2017; Williams & Kosta, 2020). In addition, existing studies have explored how foreign competitors impact on different firm level strategies, such as innovation, human resource training, and product quality (Iriyama, Kishore & Talukdar, 2016; Lam, Ding & Dong, 2022; Nuruzzaman, Singh & Pattnaik, 2019; Ozturk Kose, 2023; Wadho & Chaudhry, 2018; Xia & Liu, 2017). Although these studies advance our understanding of the consequences of informal and foreign competition, the field is still nascent and needs further research.

In addition, studies on competitive rivalry from different competitor groups have largely been studied in the context of manufacturing firms (Iriyama, Kishore & Talukdar, 2016; Krammer, Strange & Lashitew, 2018; Mendi & Contamagna, 2017; Nuruzzaman, Singh & Pattnaik, 2019; Perez, Kunc, Durst, Flores & Geldes, 2018). In fact, the service sector has long been recognized as an important force in the economy (Barrett, Davidson, Prabhu

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& Vargo, 2015). Fierce competition coming from informal and foreign competitors poses significant challenges to service firms (Gonzalez & Lamanna, 2007). In spite of its increasing importance in the economy and among the scholars, there is little knowledge about to what extent service firms are influenced by the competitive pressures coming from different competitor groups, i.e., informal and foreign competitors. In addition, previous studies have not investigated how small and medium-sized firms (SMEs) are likely to be influenced by competitive threats coming from informal and foreign competitors (Amin, 2023). Despite the potential role of informal and foreign competitors in affecting SMEs, theoretical and empirical work in this area is very limited.

Overall, this paper contributes to competitive rivalry literature by highlighting that informal and foreign competitors influence innovation and export performance of service SMEs. This work distinguishes between informal and foreign competitors by building on research demonstrating the importance of two strategic groups in emerging economies (Iriyama, Kishore & Talukdar, 2016; Schneider, 2002). First of all, this research contributes to existing research by explicitly connecting two specific competitor threats to innovation performance. This research suggests that informal and foreign competitors are important types of competitors which influence innovation performance of service SMEs. However, this research argues that the effect of informal competitors on innovation performance is more influential than the effect of foreign competitors. Second, this research contributes to extant literature on competitive rivalry by examining the link between informal and foreign competitors and export performance of service SMEs. This paper proposes that informal competitors negatively affect service SMEs' export performance while foreign competitors positively affect. In this way, this paper extends previous studies in internationalization by explaining the antecedents of exporting (Krammer, Strange & Lashitew, 2018). This study tests its hypotheses by utilizing the 2009 World Bank Enterprise Survey of 30 Eastern European and Central Asian countries.

The remainder of this paper is organized as follows. In the next section, the literature regarding informal and foreign competitors in emerging economies is reviewed and hypotheses about the effects of informal and foreign competitors on innovation and export performance of service SMEs are proposed. In methods section, the data and variables are explained and then the results are presented. Finally, findings are discussed along with limitations and further research directions.

LITERATURE REVIEW AND HYPOTHESES

Competitor groups in emerging economies

Informal competitors consist of firms that do not follow government regulation and systems but trade legal products and services (Darbi, Hall & Knott, 2018; McGahan, 2012). These firms are different from those whose activities are illegal. Two opposing views have been around that push new firms to be unregistered. The first view argues that a burdensome regulatory environment pushes firms to be informal (Williams & Martines, 2014). In fact, firms choose to be informal to avoid the high costs of registration (Webb, Tihanyi, Ireland & Sirmon, 2009). Even though the process of registration with the government ranges across countries, on average firms spend a long time and have to follow many procedures. In addition, they need to obey with the taxation systems thereby paying high fees and taxes (Godfrey, 2011). The second view suggests that weak government system fails to support young businesses at their initial stage (Williams & Martinez, 2014). For instance, unstable and weak institutional framework causes firms to face higher tax rates and bribery (Bu & Cuervo-Cazurra, 2020). Therefore, in order to pay-off the costs of operating in emerging economies, informal firms are likely to occur. While the informal sector comprises more than half of the economic output of emerging economies (Schneider & Williams, 2013; Wellalage & Locke, 2016), these firms can have detrimental effects on countries' economic development.

Foreign competition is likely to happen through foreign direct investment (FDI) and exports (Gaur, Ma & Ding, 2018). As a result, emerging economy local firms are exposed to competition of foreign firms coming from other countries due to local firms lack of innovative capabilities (Singh & Gaur, 2013). For example, local Turkish firms, such as Turkcell fight against Westerns rivals such as Vodafone in the telecommunication sector in Türkiye. Local firms operating in emerging economies significantly compete with foreign competitors for inputs (Nuruzzaman, Singh & Pattnaik, 2019). Since foreign competitors have both country and firm specific capabilities they raise the level of competition between formal firms and foreign competitors (Singh & Gaur, 2013; Wiersema & Bowen, 2008). Nevertheless, competition from foreign competitors helps emerging economy firms build their capabilities through knowledge spillovers (Araujo & Salerno, 2015; Fu, 2012). Thus, instead of threatening local firms' success, foreign competitors can help them by improving their efficiency and productivity.

Competitor groups and innovation performance of service SMEs

In order to gain competitive advantages over informal competitors, prior studies have showed that formal firms can engage in innovative activities (McCann & Bahl, 2017; Mendi & Costamagna, 2017; Tian, Wang, Xie, Jiao & Jiao, 2019; Xia & Liu, 2017; Xie & Li, 2018). However, these studies have either focused on manufacturing industries or had a comprehensive approach by examining manufacturing and service industries together. Service innovation is one important strategy that increases firms' ability to be competitive across companies and different nations (Helkkula, Kowalkowski & Tronvoll, 2018). Service firms differ from manufacturers primarily due to the characteristics of services (Hipp & Grupp, 2005). The main characteristics of service firms are that they are intangible, heterogeneous, and inseparable. The heterogeneous nature of services makes it difficult to produce services identical to each other. The production and consumption phases of services occur simultaneously, making it inseparable. These features draw the attention to examine which strategies are beneficial for service firms to fight against informal and foreign competition (Gonzalez & Lamanna, 2007; Kotabe, 1989). Therefore, it becomes important to understand the effect of informal competition on innovation performance of service SMEs.

Service SMEs face severe competition from informal firms because these competitors prefer to operate in sectors characterized by low levels of technology, skills, and capital requirement, such as retail and services (Distinguin, Rugemintwari & Tacneng, 2016; Gonzalez & Lamanna, 2007). These competitors are likely to be small and they like to keep their heads down to become invisible (Nichter & Goldmark, 2009). This presents significant challenges to SMEs since they are also small and have similar resources with their informal competitors (Iriyama, Kishore & Talukdar, 2016). In addition, SMEs are likely to share the same customers with informal competitors, thereby having market commonality. Despite these similarities, informal firms some advantages over formal ones. Informal firms can lower their operational costs by not being exposed to following government rules and regulations. Moreover, these informal firms can lower production costs by hiring non-skilled labour and using less advanced technology (Abbas, Adaba, Sheridan & Azeem, 2022). Therefore, the cost advantages these informal competitors have enable them operate more cheaply. Informal competitors can lower the price following the customer demand whereas formal firms are not keen on reducing the price.

Additionally, since informal competitors do not follow any regulations they are keen on copying the knowledge and technology from their counterparts (Bu & Cuervo-Cazurra, 2020). This creates a big issue for service firms since it is easier for a competitor to imitate a new service due to its intangibility compared to a product (Hipp & Grupp, 2005). In addition, service firms find it difficult to protect their services from the competitors because of the complexity of defining appropriate regime of knowledge and technology (Santamaria, Nieto & Miles, 2012). Therefore, it is important to take actions that informal competitors will find difficult to imitate (Miocevic, Arslanagic-Kalajdzic & Kadic-Maglajlic, 2022). Since informal competitors lack in resources and capabilities to innovate, formal firms can fight against informal competitors by increasing their innovativeness.

SMEs perceive foreign competitors as a threat as well. SMEs can operate successfully in markets where foreign firms also aim to function (Oviatt & McDougall, 1994). Foreign competition either pushes inefficient firms out of the market or forces them to be more innovative to compete (Fu, Pietrobelli & Soete, 2011; Li & Vanhaverbeke, 2009). The competitive threat from foreign competitors increases formal firms' awareness of competence gap and the need to catch-up (Cui, Meyer & Hu, 2014). When foreign firms produce advanced products, this leads to diminishing demand for existing products (Xia & Liu, 2017). Since foreign competitors will likely to possess different combinations of resources and capabilities, the expected strategic response of the formal firms would be to strength its resources and capabilities (Wiersema & Bowen, 2008; Xia & Liu, 2017). Therefore, service SMEs update their skills and advance management techniques to meet this competitive challenge, thereby, increasing the introduction of innovative services. In addition, foreign competitors can help local firms innovate through potential knowledge spillovers from foreign firms to local firms (Zhang, Li, Li & Zhou, 2010). When local firms observe foreign firms' new product they develop similar or related products. Hence;

Hypothesis 1: In service SMEs, informal and foreign competitors positively affect focal firms' innovation performance.

However, this research suggests that competitive threat from informal competitors is more effective on formal firms' innovation performance than competitive threat from foreign competitors. This is particularly important for service SMEs. SMEs and foreign competitors do not have similar level of resources and capabilities. Foreign competitors are typically associated with more resources

and capabilities (Wiersema & Bowen, 2008). They have advanced technology and skilled human resources compared to local SMEs in emerging economies. However, the liability of foreignness creates certain difficulties for foreign competitors (Zaheer, 1995; Zhou & Guillen, 2015), making SMEs more advantageous. For instance, foreign firms need to adjust their rules and regulations following a host country (Zhou & Guillen, 2015). These create extra costs and attention for foreign firms especially when these competitors operate in service sector. Service firms require extensive customization and customer contact, which make things more costly to manage (Goerzen & Makino, 2007). Therefore, certain advantages of SMEs can sometimes make such firms more advantageous over foreign competitors. In addition, small firms typically tend to be less diversified and not have multiple service lines. For that reason, these firms have a higher chance of operating in the same market with their informal competitors (Chang & Xu, 2008). This is also explained with Iriyama et al.'s (2016) study suggesting that undiversified firms perceive a higher level of competition from informal competitors than diversified firms. This means that small firms are likely to take informal competitors as a bigger threat compared to foreign competitors. Therefore;

Hypothesis 2: In service SMEs, informal competitors have a stronger impact on innovation performance than foreign competitors.

Competitor groups and export performance of service SMEs

With the globalization service firms have started to seek market opportunities beyond their national borders (Cavusgil, Knight & Riesenberger, 2020). Consulting, advertising, and banking companies are examples for service firms that are likely to undertake cross-border businesses. Exporting is one of the important ways for firms to cross borders. It is considered as a quick, less costly, and less risky approach to cross national borders (Golovko & Valentini, 2011). Despite these benefits, firms can face difficulties in the exporting process, provoking negative attitudes towards exporting (Leonidou, 1995; Tesfom & Lutz, 2006). In particular, small firms can have lack of capital and competent personal required for exporting. In addition, small firms can have more difficulties in exporting process as often these firms cannot offset the negative impact of domestic market environment such as uncertainty due to resource scarcity (Tesfom & Lutz, 2006). Exporting process requires managers to direct firms' resources, such as financial, managerial, and personnel to exporting (Navarro, Losada, Ruzo & Diez, 2010). Managers need to be committed and risk-taking in this challenging process. Therefore, since exporting requires a great level of resources and capabilities, the exporting process can be challenged by the existence of informal competitors and improved by the presence of foreign competitors.

Informal competitors become advantageous over formal firms because this competitor type has cost advantages and flexibility regarding their operations (Godfrey, 2011; Williams & Martinez-Perez, 2014). Doing business for emerging economy firms - i.e., the operations and activities of formal firms - can be disrupted by informal competitors (Mendi & Costamagna, 2017; Webb, Tihanyi, Ireland & Sirmon, 2009). The threat coming from informal competitors exerts restrictions on formal firms' exporting activities due to increased operational and transactional costs. Informal competition increases operational costs because it creates an uncertain environment by avoiding governmental regulations and rules. Formal firms' managers need to devote their time and effort to deal with the informal business environment (Bu, Luo & Zhang, 2022). They need to spend greater time and cost in order to scan, analyze, and adapt to the informal competitors' activities. More importantly as they serve same customers, informal competition is an important factor that influences the success of formal firms (Stevens, Xie & Peng, 2016). In addition, transaction costs can increase because formal firms can take non-market strategies such as lobbying to avoid delay in bureaucracies (Iriyama, Kishore & Talukdar, 2016; Krammer, 2019). Overall, the threat of informal competition imposes substantial transaction costs particularly on service firms' internationalization procedures (Goerzen & Makino, 2007). Formal firms therefore direct their attention to the home market and passively adopt an international strategy (Manopolulos, Chatzopoulou & Kottaridi, 2018; Wan, 2005). It means that additional costs of operating at home with informal firms can decrease the level of exporting. Therefore;

Hypothesis 3: In service SMEs, competition from informal competitors negatively affects focal firms' export performance.

Local firms can lack certain capabilities to succeed in international markets (Singh & Gaur, 2013). Foreign competitors become important for local firms' activities and operations because foreign competitors' knowledge can be transferred to these firms (Araujo & Salerno, 2015). That is, foreign competitors can help local formal firms improve their performance (Zhang,

Li, Li & Zhou, 2010). Local firms can observe foreign competitors' knowledge and technology and develop similar products thereby increasing their chance of success in international markets (Cui, Meyer & Hu, 2014). In fact, foreign competitors are associated with their best management practices that make them successful in the home and host countries. Local firms can adopt these best practices in their activities and operations. In doing so, the gap in technological and management capabilities between foreign and local firms decreases, making local formal firms more successful in foreign markets (Chen, Zeng, Wu & Fu, 2021).

Moreover, firms in emerging economies are linked with liability of foreignness when these firms enter into foreign markets (Zaheer, 1995). By interacting with these foreign competitors, local firms can have a chance of obtaining important information to develop basic capabilities to succeed in exporting activities (Nuruzzaman, Singh & Pattnaik, 2019). These competitors can also help local formal firms to learn about competitors' countries, thereby increasing their success in foreign market expansion activities (Chen, Zeng, Wu & Fu, 2021). Hence;

Hypothesis 4: In service SMEs, competition from foreign competitors positively affects focal firms' export performance.

METHODS

Data

The data comes from the 2009 version of the Business Environment and Enterprise Performance Surveys (BEEPS), a survey by the World Bank. Scholars interested in management studies have used this data extensively (e.g., Lee, Mutlu & Lee, 2023; Qi & Nguyen, 2021). This survey provides information about firm characteristics and institutional environment. This data is very comprehensive firm level data to explore emerging economy firms' competitive environment. The total number of valid responses after removing missing observations is 9132 firms. The sample consists of 3340 service SMEs in 30 Eastern European and Central Asian countries. This research focuses on firms with less than 250 employees, thus complying with the European Commission (2003) definition of SMEs.

Variables

Dependent variables: To measure *innovation performance*, this study utilizes two variables from the survey. The first is a binary variable. The survey asks respondents whether their firms introduced new services in the last three years. Respondents answer this question with 'yes' or 'no'. The responses then are coded as 1 if they answer yes, and the ones answer no are coded as 0. The second variable is the percent of annual sales in 2007 accounted for by new services introduced during 2005 - 2007. In order to obtain a fuller picture of innovation performance, this research uses both the binary variable and the ratio for innovative sales. *Export performance* is measured as the percentage of a firm's export volume over total sales. The values range from 0 to 100.

Independent variables: This paper follows prior studies to measure competitive pressures (Mendi & Costamagna, 2017; Nuruzzaman, Singh & Pattnaik, 2019; Perez, Kunc, Durst, Flores & Geldes, 2018). *Informal competition* is measured with a binary variable. The survey questionnaire asks respondents whether they compete against informal firms. The respondents answer this question with 'yes' or 'no'. Respondents are coded as 1 if they respond yes, and as 0 if they answer no. *Foreign competition* is measured with a four point Likert scale. The survey asks respondents to indicate the importance of pressure from foreign competitors firms perceive regarding to developing new services and markets.

Control variables: This study controls for *firm size* since size of the firms can be important in the success of innovation and exporting. This variable is the logged number of workers. *Top manager industry experience* is controlled as the logged years that top manager has experience in its industry. In addition, *firm age* is controlled since more experienced firms can be better at dealing with the competition. It is the logged number of years since the founding date of the firm. Business group is measured with a value of 0 and 1, for whether the firm is a part of a group. *Employee education intensity* is the percent of employee with a university degree. This study also controls for ownership to understand whether firms have *foreign ownership* or *government ownership* share in the focal firm. They are measured in the form of precentages. *Domestic competitor* variable is also controlled with responses for pressure from domestic competitors with respect to developing new services. In addition, *started unregistered* is controlled by a binary variable. The questionnaire collects data about whether their firms were formally registered when they started operations. Finally, this study includes seven *industry effects* and thirty *country effects* into the regression models.

RESULTS

Table 1 provides details of the summary statistics. As it can be seen, 45% of firms compete against informal firms. On average 50% of firms compete against foreign firms. On average 84% of firms compete against domestic competitors. The average firm age is 14 years old and the average firm has 54 workers. The average level of foreign and government ownership is 6.21% and 1.86% respectively. Table 2 provides the details of correlations for the examined variables. According to the correlations, interested variables are correlated with each other.

Table 3 reports regression results about the innovation performance of service SMEs. Since the innovation dependent variables are both binary and percentage

Table 1. Summary statistics

Variables				
	Min.	**Max.**	**Mean**	**Std. Dev.**
Size	10	249	54.10	53.07
Age	0	124	14.56	12.47
Top manager experience	1	60	16.72	9.97
Employee education intensity	0	100	24.79	25.49
Unregistered firms	0	1	0.96	0.18
Foreign ownership	0	100	6.21	22.41
Government ownership	0	100	1.86	10.65
Business group	0	1	0.11	0.31
Domestic competition	1	4	2.76	1.04
Service innovation	0	1	0.51	0.49
Percentage of sales from service innovation	0	100	13.64	22.06
Export intensity	0	100	5.51	18.01
Export intensity (only exporters)	1	100	33.46	32.15
Informal competition	0	1	0.45	0.49
Foreign competition	1	4	1.93	1.08

Table 2. Correlation matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Service innovation	1.00													
2. Percentage of service innovation	0.59*	1.00												
3. Export intensity	0.04*	0.02	1.00											
4. Informal competition	0.06*	0.04*	-0.04*	1.00										
5. Foreign competition	0.11*	0.07*	0.20*	0.11*	1.00									
6. Domestic competition	0.08*	0.04*	-0.02	0.16*	0.28*	1.00								
7. Size	0.02	-0.01	0.05*	-0.04*	0.05*	0.04*	1.00							
8. Age	-0.00	-0.07*	0.01	0.04*	0.03	0.05*	0.18*	1.00						
9. Top manager experience	0.00	-0.02	0.05*	0.01	0.04*	0.06*	0.04*	0.32*	1.00					
10. Employee education intensity	0.07*	0.07*	-0.00	-0.02	-0.04*	-0.09*	-0.05*	-0.13*	-0.10*	1.00				
11. Unregistered firms	-0.03*	-0.01	0.00	-0.02	-0.00	0.02	0.06*	-0.05*	-0.01	0.02	1.00			
12. Foreign ownership	0.08*	0.08*	0.12*	-0.05*	0.11*	0.00	0.10*	-0.06*	-0.03*	0.09*	0.00	1.00		
13. Government ownership	-0.01	-0.02	0.00	-0.03*	-0.00	-0.06*	0.11*	0.10*	-0.00	-0.02	0.00	-0.03	1.00	
14. Business group	0.03*	0.07*	-0.01	-0.02	0.04*	0.00	0.11*	-0.03	-0.07*	0.05*	0.00	0.18*	0.11*	1.00

Note: *p<0.05.

Table 3. Predictors of innovation performance

	Service Innovation (Logit regression - 0,1)		Service Innovation (Tobit regression - Percent of sales)	
	Model 1	**Model 2**	**Model 1**	**Model 2**
Size	.149*** (.045)	.155*** (.045)	.011 (.008)	.012 (.008)
Age	-.046 (.064)	-.057 (.064)	-.033*** (.012)	-.034*** (.012)
Top manager industry experience	.086 (.061)	.094 (.061)	.011 (.011)	.011 (.011)
Employee education intensity	.006*** (.001)	.006*** (.001)	.001*** (.000)	.001*** (.000)
Unregistered firms	-.404* (.220)	-.377* (.220)	-.047 (.034)	-.041 (.034)
Foreign ownership	.005*** (.001)	.005*** (.001)	.000*** (.000)	.000*** (.000)
Government ownership	.003 (.003)	.003 (.003)	.000 (.000)	.000 (.000)
Business group	.029 (.123)	.021 (.122)	.050** (.023)	.049** (.023)
Domestic competition	.152*** (.037)	.097** (.039)	.021*** (.007)	.013* (.007)
Predictors				
Informal competition		.369*** (.079)		.058*** (.014)
Foreign competition		.111*** (.038)		.018*** (.006)
Country effects	Inc.	Inc.	Inc.	Inc.
Industry effects	Inc.	Inc.	Inc.	Inc.
Number of firms	3340	3340	3340	3340
Pseudo R-squared	0.1004	0.1076	0.1034	0.1106
Log likelihood	-2080.89	-2064.42	-1633.28	-1620.15

Note: *p<0.1; **p<0.05; ***p<0.01.

of sales, this study uses Logit and Tobit estimations, respectively. The latter estimation method is censored between 0 and 100 because sales of new services can only be zero or positive. Model 1 regresses the control variables on the innovation performance. The results suggest that larger and younger firms produce service innovations. Firms with foreign ownership invest in innovation. Additionally, firms which have employees with a university degree are more into innovation. Domestic competition has also significant impact on innovation performance, suggesting that firms having pressure from domestic competitors are more into service innovation. The Model 2 shows that the coefficient of informal competition (β= 0.369; p<0.01; β= 0.058; p<0.01) is significant and positive. Likewise, the coefficient of foreign competition is significant and positive (β= 0.111; p<0.01; β= 0.018; p<0.01). This shows that service SMEs facing competitive threats from informal and foreign competitors are more into service innovation, supporting the Hypothesis 1. The coefficient of informal competition is greater than the coefficient of foreign competition, providing support for the Hypothesis 2 (model 2).

Table 4 reports regression results regarding service SMEs' export performance. Since the export performance is the percentage of sales, this study uses Tobit estimation. Model 1 regresses the control variables on the export performance. The findings suggest that larger and younger firms cross national borders with

Table 4. Predictors of export performance

	Export intensity (exporters and non-exporters)		**Export intensity (only exporters)**	
	Model 1	**Model 2**	**Model 1**	**Model 2**
Size	6.27*** (1.78)	5.09*** (1.71)	-.245 (1.43)	-.846 (1.41)
Age	-3.12 (2.51)	-2.77 (2.45)	-3.87* (2.11)	-3.740* (2.09)
Top manager industry experience	7.70*** (2.66)	6.77*** (2.56)	-2.32 (2.41)	-2.94 (2.41)
Employee education intensity	.352*** (.072)	.293*** (.072)	-.014 (.061)	-.038 (.063)
Unregistered firms	.568 (10.20)	2.61 (9.91)	-14.35 (8.93)	-12.92 (8.28)
Foreign ownership	.206*** (.059)	.153*** (.058)	.160*** (.043)	.140*** (.043)
Government ownership	.053 (.157)	.001 (.147)	.003 (.128)	-.011 (.124)
Business group	-1.97 (4.96)	-3.66 (4.78)	-10.03*** (3.68)	-11.71*** (3.49)
Domestic competition	-4.51*** (1.59)	-7.86*** (1.66)	-5.24*** (1.34)	-6.75*** (1.41)
Predictors				
Informal competition		-8.42*** (3.04)		-5.09** (2.57)
Foreign competition		13.71*** (1.45)		5.75*** (1.23)
Country effects	Inc.	Inc.	Inc.	Inc.
Industry effects	Inc.	Inc.	Inc.	Inc.
Number of firms	3330	3330	549	549
Pseudo R-squared	0.0860	0.0989	0.0280	0.0329
Log likelihood	-3631.51	-3580.31	-2608.72	-2595.47

Note: *p<0.1; **p<0.05; ***p<0.01.

exporting. Foreign owned firms also engage in exporting. Additionally, firms which have university degree of employees and more experienced managers are more likely to increase their exporting. Firms, a part of business group, negatively affect export performance. Domestic competition has also negative impact on exporting, suggesting that firms having pressure from domestic competitors are less likely to export. Model 2 suggests that informal competition has significant and negative impact on exporting (β= -8.42; p<0.01). The results also show that it has negative impact on export performance for the model which is run for only exporters (see model 2 in Table 4). This result suggests that service SMEs facing informal competition are less likely to export, providing support for the Hypothesis 3. Model 2 also demonstrates that foreign competition has significant and positive impact on exporting (β= 13.71; p<0.01). It has also positive impact on export performance for only exporters, supporting the Hypothesis 4.

CONCLUSION

This research examines to what extent informal and foreign competition affect innovation and export performance of service SMEs. The results showed that service SMEs benefit from both informal and foreign competition to increase their innovation performance, with the former competition having a greater effect on innovation than the latter competition group. Further, the findings revealed that service SMEs do not benefit from informal competition to increase export performance whereas foreign competition becomes effective for exporting.

This paper contributes to the existing literature on competitive rivalry by exploring service SMEs. The influence of informal competition on innovation and firm performance has been investigated from the perspective of manufacturing firms (Abbas, Adaba, Sheridan & Azeem, 2022; McCann & Bahl, 2017; Miocevic, Arslanagic-Kalajdzic & Kadic-Maglajlic, 2022). Likewise, prior studies on foreign competition have mainly investigated the impact of such competition on innovation performance (Elejalde, Ponce & Roldan, 2022; Iriyama, Kishore & Talukdar, 2016; Nuruzzaman, Singh & Pattnaik, 2019). In fact, these studies are very comprehensive, covering all sectors and different sized firms together. It is important to differentiate between manufacturing and service firms when examining the influence of competition since both sectors vary in terms of their features. Additionally, it is important to differentiate small firms from large ones when investigating the influence of competitive rivalry groups (Ozturk Kose, 2023). Therefore, this research extends prior studies by explicitly focusing on service SMEs to explore how competition from informal and foreign firms influences their innovation and export performance. The findings suggest that service SMEs take the innovation action to fight against informal competitors, confirming the previous studies (McCann & Bahl, 2017; Miocevic, Arslanagic-Kalajdzic & Kadic-Maglajlic, 2022; Perez, Yang, Bai, Flores & Heredia, 2019). The findings also show that informal competitors pose significant challenges to exporting process of service SMEs. More interestingly, this research shows that informal competitors can be both the source of competitive advantage and also the detrimental effects on the prospects of growth, such as exporting (Narula, 2019). In line with the previous studies, the findings on foreign competition suggest that the threats coming from foreign firms push service SMEs to be innovative and active in international markets (Nuruzzaman, Singh & Pattnaik, 2019).

Despite these positive findings, this study has some limitations that need to be addressed. First of all, this research has focused on the consequences of informal and foreign competition. Future studies can examine contextual factors that shape the link between competition and firm performance. Second, this study is also limited in that it is based on cross-sectional data. Hence, it would be good if future studies would conduct longitudinal studies to further investigate the relations examined in this research over years. Third, the data is drawn from an older version of the survey. Hence, future studies can examine these relationships with a more recent data. Finally, this research has focused on SMEs. However, the differentiation between small and medium sized firms would be important since these firms differ from each other in terms of resources and capabilities.

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