

Total factor productivity and outsourcing: the case of Vietnamese small and medium sized enterprises

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Abstract

Purpose – The paper aims to investigate the difference in total factor productivity (TFP) among those firms with and without outsourcing in a developing country like Vietnam. Also, it explores the effect of outsourcing activities on total factor productivity with a specified concentration on the Vietnamese small and medium-sized enterprises (SMEs).

Design/methodology/approach – The panel data set of SMEs used in this study was originated from biannual surveys conducted under the collaboration between educational organizations and government agencies: Stockholm School of Economics (SSE), Department of Economics – the University of Copenhagen, the Institution of Labor Studies and Social Affairs (ILSSA) in the Ministry of Labor, Invalids and Social Affairs (MOLISA). In this study, the model is developed based on the production function in accordance with the model of Girma and Görg (2004). The firms' TFP is the difference between the actual and the predicted output as with the approach by Levinsohn and Petrin (2003).

Findings – This study finds out that firms with outsourcing have higher total factor productivity than those without outsourcing activities. In addition, the more firms spend on outsourcing, the higher total factor productivity they can gain. Outsourcing to SMEs in a developing country can significantly increase its TFP by means of either maintaining core competencies or searching external resources in conducting some internal activities.



Originality/value – Although outsourcing has been widely applied by large firms, the research studying its impact on productivity at firm level is limited. Especially, this study can shed light on the impact for the case of SMEs in a developing economy.

Keywords Outsourcing, Total factor productivity, Small and medium sized enterprises (SMEs)

Paper type Research paper

1. Introduction

Outsourcing or the act of contracting out internal activities to foreign suppliers has rapidly become a critical approach in the modern economy, especially for manufacturing firms. Despite being a widely-used concept, outsourcing, originated from the late 1970s to early 1980s, is defined as a mean to search for external resources to maximize the firm's profit (Corbett, 2004). While outsourcing allows companies to focus on their strength in maintaining and developing core competencies, it mitigates the expertise shortage in the less well-developed part of company which aims to outsource (López, 2014). Outsourcing delivers the diversity of benefits for business actors listed as reducing cost, improving productivity, enhancing efficiency and concentrating on the core business operation which leads to lower resource cost and higher quality products (Gilley & Rasheed, 2000). These advantages of outsourcing can be found as follows: outsource information technology helps reducing operational cost (Loh & Venkatraman, 1995) and outsourcing non-core activities develops service organizations' capability and flexibility so as to adapt to the rapidly changing economic environment (Lankford & Parsa, 1999; Sia, Koh, & Tan, 2008).

Outsourcing, despite positive aspects, poses serious risks towards the firms (Weidenbaum, 2005). For instance, the imbalance between the actual demands from outsourcing users and outsourcing contractor's products, the high product's price or the leakage of core competency can potentially affect the firm (Lutchen, 2004). This is to be explained by the inflated information on the vendor's capability on which they could offer, the misunderstanding regarding the product's requirement between the employers and the partners or the lack of control on the subcontract. In other words, the positive impact of outsourcing can be bounded by their threat (Antonietti, Ferrante, & Leoncini, 2016). A firm's technology might be stolen by the outsourcing vendor due to the lack of control in legal systems (Weidenbaum, 2005). According to Long (2005), the outsourcing decision of a firm would be facing a potential rival that can benefit from the spillovers associated with the training for workers by the outsourcing firm. As the result, the outsourcing firm will keep some of the production at home, regardless of the higher labor cost.

In fact, those unexpected effects can not prevent the widespread of outsourcing in doing business. Implementing outsourcing in the multinational company is undeniable (Landefeld & Mataloni, 2004). A variety of multinational companies listed as Apple, Boeing, or Nike corporations is practicing outsourcing successfully (Quinn & Hilmer, 1994; Doh, 2005; Strange & Magnani, 2017). For instance, since Nike outsources all their core production to the third parties in developing countries, Nike had increased 20% in growth rate and earned 31% return on equity (ROE) for its shareholder (Quinn & Hilmer, 1994).

From the empirical perspective, outsourcing has been explored in kinds of offshoring in international business or inshoring within the country. The measurement for outsourcing is based on collected information at the industry level and from input-output tables, rather than firm-level data (López, 2014). Due to data limitation, the existing literature have focused on outsourcing at the industry level and have found either positive impacts (Amiti & Wei, 2009; Lin & Ma, 2012, Austin-Egole & Iheriohanma, 2021) or negative effects (Winkler, 2010; Falk, 2012; Windrum, Reinstaller, & Bull, 2009). In explaining for why firms do outsourcing, the previous studies focused on the internal factors that might incur outsourcing decisions, which were analyzed differently through the agency cost theory, the resource dependency theory, and the transaction cost theory (Michael & Michael, 2011).

For a developing country like Vietnam, regardless of the multinational companies in terms of foreign direct investment, SMEs play a very important role in contributing in GDP and providing 80% of jobs in the labor market in accordance with the annual statistics of the General Statistics Office. Thanks to the data availability of outsourcing in the SME surveys conducted by the University of Copenhagen, in collaboration with the Vietnamese Ministry of Labor, Invalids and Social Affairs (MOLISA), this study, with the aim to fill in the literature gap by detecting the role of outsourcing for SMEs, is expected to find out positive effect on firms' total factor productivity.

2. Literature review

Outsourcing has been approached with different perspectives in line with the actual practice in business operations. In the study of [Loh and Venkatraman \(1995\)](#) regarding information technology, outsourcing was defined as “important input from outside supplier in the physical or human resources relate to specific components of the information technology structure of buyer”. It helps reduce operational cost for the firms doing outsource. [Lei and Hitt \(1995\)](#) explained outsourcing as the reliance of the firm on resources and component from external for firm's value-added. Outsourcing can be classified into two types: abstention and substitution. In terms of the abstention outsourcing, outsourcing is raised when goods or services are purchased from outside firms; however, those are not produced internally previously. In contrast, for the substitution outsourcing, the former internal activities are substituted by the external resource from purchasing. Both types of outsourcing reflect the decision of a company on rejecting the internalization and implementing outsource to the supplying network. In this paper as well as the study by [Matejun \(2010\)](#) in terms of small and medium-sized enterprises, outsourcing is commonly considered as contracting out their activities to external partner due to its shortages of resources in order to focus on their core competencies.

According to [Long \(2005\)](#), the outsourcing activity is likely to be exploited within firms' strategic consideration which would result in the 'incomplete outsourcing'. It is argued that when a firm outsources its production, it must balance the marginal gain (cost saving) of outsourcing an additional unit with the marginal cost of doing so (lowering rivals' cost). Consequently, it would retain head office those high value added activities listed as design, patent application and marketing while the remaining fraction is outsourced abroad. Therefore, firms accept high cost for some activities to prevent risks by which they may face to potential competitors via technology spillovers that they transfer to outsourcing partners.

Regarding the fundamental background, three main theories, including transaction cost theory (TCT), resource-based view (RBV), and resource dependency theory (RDT), have been used in explaining the outsourcing behavior. These theories are elaborated to answer why firms need to terminate in-house to transfer to outside services ([Gerbl, McIvor, & Humphreys, 2009](#)).

Firstly, transaction cost theory, a primary outsourcing theory, was initiated by [Coase \(1937\)](#) and developed later by [Williamson \(1979\)](#). This theory specifies the conditions which influences the decision of an organization to manage itself internally (within its boundaries) or externally (i.e. outsourcing) ([Gerbl et al., 2009](#)). Transaction cost, in accordance with [Gurbaxani and Whang \(1991\)](#), is the cost of “using a market” containing operational costs (listed as: search cost, selection cost, bargaining cost) and contractual costs (listed as: writing, monitoring and enforcing a contract, coordinating cost). All activities of firms are dependent upon the balance between transaction cost and production economics; however, the decision of firms for “make-or-buy” is decided based on economizing of transaction costs ([Williamson, 1985](#)). Besides, transaction costs are affected by three factors: conditional asset specificity supporting the transaction, the level and the kind of uncertainty rounding the transaction and the frequency of transaction. In which, asset specificity is identified as critical to transaction since it has a substantial impact on the selection of governance structures ([Riordan &](#)

Williamson, 1985; Williamson, 1989). Two main behavioral approaches are applied for this theory are bounded rationality (the experience of uncertainty from various sources in transacting) and opportunism. When combining bounded rationality with opportunism, the organization will experience the complicated problems with uncertain complexity. The problem of an organization is dealing with economizing organizational transaction on bounded rationality while protecting them against the hazards of opportunism (Williamson, 1985). Consequently, transaction cost theory advises the business actors to keep processes that are highly specific in-house because the market transaction costs for communication and agreement are too high to make outsourcing a viable alternative (Gerbl *et al.*, 2009).

Secondly, the assumption regarding resource dependency theory is that firms seek the opportunities to enhance their power (Pfeffer & Salancik, 1978; Ulrich & Barney, 1984). Therefore, before the lack of resources firm can get the needed resources, they have to try to set up the relationship with powerful firms. As a result, firms change their structure and strategies to purchase the external resources. Resource dependency theory is one useful way to examine the relationship between outsourcing decision of firm and their abilities to utilize resources from outside environment (Yuchtman & Seashore, 1967). Resource dependency theory reveals that the economic actors should adjust their strategy to have strong processes and outsource from the weaker vendor so as to gain advantage from outsourcing (Teng, Cheon, & Grover, 1995). Therefore, firms could access the balancing power through resource accessibilities, potential supplier number besides switching supplier's cost (Teng *et al.*, 1995).

Thirdly, the resource-based view theory supplements transaction cost theory and resource dependency theory by emphasizing the firm's resource accumulation (Penrose, 1959; Wernerfelt, 1984). The fact that firms receive the sustained competitive advantage from external resources was imperfectly imitable and non-substitutable in competing for firm resources (Arnold, 2000; Barney, 1991). Outsourcing helps to solve the problem of constraint by maintaining current resources and enhance strategic affordances (Grant, 1991; Teng *et al.*, 1995). In this case, this resource-based view theory demonstrates that the competitive advantage of a firm comes from owning the "difficult-to-replicate" resources listed as having loyal customers, good reputation, and competent employees (Lovallo & Mendonca, 2007). The competitive advantages of a firm come from core competency, in which its marginal impact did not underline the sustainable competitive advantage, making it appropriate for outsourcing (Arnold, 2000; McIvor, 2009). In this way, the resource-based view theory related to internal strategy's activities is pertained to competitors versus external arrangement (McIvor, 2009). In short, this approach is more likely to explain the motivation and effects of SMEs's outsourcing activity in this study.

How does outsourcing affect firm's productivity? The most significant researches assert that outsourcing leaves a positive effect on total factor productivity. These positive effects of outsourcing on firms' TFP are usually explained by the benefit that outsourcing helps firms improve their financial performance through immediately-improving cost and non-financial performance in order to keep firm concentrating on developing core competencies. López (2014), using a sample of 1,728 Spanish manufacturing from 1990 to 1999, indicates that outsourcing intensity for manufacturing firm has positive effect on TFP. Girma and Görg (2004), by utilizing the data of three manufacturing industries in the United Kingdom in the 1980-1992 period, finds that outsourcing is positively related to both TFP and labor productivity. The reason is that outsourcing can switch suppliers as new and more cost-effective technologies becomes available, instead of committing a specific type of technology. Ten Raa and Wolff (2001) discovers that total factor productivity growth in manufacturing industries is positively related to change in outsourcing in the U.S manufacturing with the industry data during the 1980s and 1990s whereas other sectors do not. Another study of Amiti and Wei (2009) for the U.S. data at industrial level in the 1992-2000 period, confirms the significant positive effect of international services outsourcing and smaller positive effect of

material international outsourcing on labor productivity. [Crinò \(2008\)](#), based on the panel data of 20 industries in both manufacturing and services for nine Western European countries from 1990 to 2004, reveals that service offshoring has a significant and largely positive impact on productivity in the home countries. By using outside suppliers for products or services, an outsourcer is able to take the advantage of emerging technology without investing significant amounts of capital in that technology. According to [Lin and Ma \(2012\)](#), outsourcing is defined as two types: services and material purchased from external. It identifies the positive relationship between material outsourcing and productivity for the Korean industry during the 1985-2001 period. This result is explained that outsourcing could reduce investment in manufacturing capacity and lower fixed costs, all of which leads to improvement in firm's productivity. [Strange and Magnani \(2017\)](#) argued outsourcing in terms of production externalization as one performance-enhancing strategy; therefore, it has potential impacts upon a number of 'performance' outcomes listed as productivity/efficiency and many others in production and business. [Austin-Egole and Iheriohanma \(2021\)](#) found the positive effect of outsourcing for organizational productivity in the Covid-19 era.

However, the effect of outsourcing on productivity is to be valued as negative since it can cause the loss of long-run research and development (R&D) competitiveness. The reliance of firms on outsourcing is declining innovation by the outsourcer because outsourcing is often used as a substitute for innovation. As a result, firms that outsource are likely to cease touch with new technological breakthroughs offering opportunities for product and process innovations. For example, [Winkler \(2010\)](#), with data of German manufacturing industries in the 1995-2006 period, reveals that the effects of a share of intermediate material either from domestic suppliers or from abroad are small and even negative whereas the purchased services from abroad have a positive and significant impact on labor productivity. In addition, as suppliers gain knowledge of the product being manufactured, they may use this knowledge to begin marketing the product on their own. [Falk \(2012\)](#) introduces different results as follows: outsourcing material leaves the positive effect while outsourcing service have the negative effect on firm's productivity. Moreover, [Daveri and Jona-Lasinio \(2008\)](#), using data for 21 manufacturing industry sectors in Italy between 1995 and 2003, indicates that the imported intermediate materials have a significantly positive impact on overall productivity growth whereas the purchased services have a negative impact on productivity.

3. Data and methodological approach

This study employs the panel data of Vietnamese SMEs in the 2005-2013 period. These surveys are conducted every two years by the collaboration of educational organizations and government agencies: Stockholm School of Economics (SSE), Department of Economics - the University of Copenhagen, the Institution of Labor Studies and Social Affairs (ILSSA) in the Ministry of Labor, Invalids and Social Affairs (MOLISA). The selected data at the firm level has 12,939 observations from the five-round surveys.

In this study, the model is developed in accordance with the model of [Girma and Görg \(2004\)](#) in their study in terms of the impact of outsourcing, foreign ownership on labor productivity and total factor productivity for the case of United Kingdom. This research model establishes the relationship between the dependent variable (total factor productivity) and explanatory variables (the ratio of outsourcing expenditure in total cost/dummy outsourcing and control variables (firm age, firm size, firm capital structure and innovation).

Therefore, the models should be estimated as follows.

Model 1 - firms' total factor productivity calculation

In Model 1, the calculation of TFP is performed using the semi-parametric method developed by [Levinsohn and Petrin \(2003\)](#). Applied to the Cobb-Douglas production function, this

method is designed to address the endogeneity issues inherent in TFP calculation, typically arising from simultaneous decisions on input and output levels.

To accommodate instances of missing or zero investment values, intermediate inputs are employed as a proxy. This approach not only circumvents issues that could contradict the monotonicity assumption and potentially impact estimate reliability but also enables the inclusion of firms with zero investments in the analysis. Selection bias is prevented as well as the sample representativeness is ensured.

It is observed that an increase in the usage of intermediate inputs correlates with output expansion in firms, suggesting that levels of intermediate inputs could serve as a reliable indicator of productivity.

In terms of the estimation of the impact of outsourcing on TFP, the potential for endogeneity which could arise from unobserved firm characteristics or macroeconomic shocks is acknowledged. To account for these factors, industry fixed effects and year fixed effects are incorporated into the model. This strategy, albeit imperfect, serves to control for industry-specific characteristics and time-specific shocks. Despite the limitations of this approach, it is identified as one necessary step in mitigating endogeneity and potential biases in the analysis.

$$tfp_{it} = y_{it} - (\beta_k k_{it} + \beta_l l_{it} + \beta_m m_{it})$$

In which, $\beta_k k_{it}$, $\beta_l l_{it}$, $\beta_m m_{it}$ are obtained from the result of running the regression following Cobb Douglas production function model as below:

$$Y_{it} = F(A_{it}, K_{it}, L_{it}, M_{it}) = A_{it} K_{it}^{\beta_k} L_{it}^{\beta_l} M_{it}^{\beta_m}$$

Model 2 - the impact of outsourcing on firms' total factor productivity

$$tfp_{it} = \beta_1 firm_age_{it} + \beta_2 firm_size_{it} + \beta_3 capital_structure_{it} + \beta_4 dummy_innovation_{it} + \beta_5 dummy_outsourcing_{it} + \epsilon_{it}$$

Model 3 - the impact of outsourcing expenditure on firms' TFP for firms with outsourcing activities

$$tfp_{it} = \beta_1 firm_age_{it} + \beta_2 firm_size_{it} + \beta_3 capital_structure_{it} + \beta_4 dummy_innovation_{it} + \beta_5 outsourcing_exp_intensity_{it} + \epsilon_{it}$$

This study further employs Fixed Effect Model with Driscoll & Kraay's standard error adjustment to ensure the robustness of the finding result (Driscoll & Kraay, 1998). Variable description and expected signs presented in Table 1 signals the positive role of outsourcing in promoting Vietnamese SMEs' TFP regarding the firms in developed countries, which is in accordance with the research results by López (2014) or Lin and Ma (2012).

4. Empirical results

Table 2 presents the information regarding the average firm age of 14 years, with the oldest firm working for 77 years. Apparently, the outsourcing expenditure of SMEs is low, with 0.4% as the percentage of total expenditure. Firms with outsourcing are more likely with double size of capital, labor and revenue; for instance, the averaged numbers of labor at non-outsourcing and outsourcing firms are 14 and 29 persons, respectively.

Table 3 introduces the impact of outsourcing participation on firms' total factor productivity using OLS (Column 1), fixed effect (Column 2) and FE adjusted with Driscoll Kraay's standard error (Column 3).

Variable	Definition	Expected sign	Reference
tfp_{it}	Total factor productivity is measured by LP method		Petrin, Poi, and Levinsohn (2004)
K_{it}	Average value of physical capital of firm i at year t	(+)	Petrin <i>et al.</i> (2004)
L_{it}	Total labor of firm i at year t	(+)	Petrin <i>et al.</i> (2004)
M_{it}	Average value of intermediate input of firm i at year t	(+)	Petrin <i>et al.</i> (2004)
$Firm_age_{it}$	Age of firm i is calculated at year t	(+)	Cucculelli, Mannarino, Pupo, and Ricotta (2014), Huergo and Jaumandreu (2004), Saeidi, Sofian, Saeidi, Saeidi, and Saeidi (2015)
$Firm_size_{it}$	Proxy as logarithm total asset of firm i at year t	(+)(-)	Margaritis and Psillaki (2010), Cucculelli <i>et al.</i> (2014), Tovar, Ramos-Real, and De Almeida (2011), Dhawan (2001)
$Capital_structure_{it}$	Ratio of debt over total asset of firm i at year t	(+)	Jensen and Meckling (1976), Myers (1977), Margaritis and Psillaki (2010)
$Dummy_innovation_{it}$	The variable takes the value of 1 if firm i has R&D expenditure during year t . Otherwise, it takes the value of 0	(+)	Belderbos, Carree, and Lokshin (2004), Hall, Lotti, and Mairesse (2009), Griffith, Huergo, Mairesse, and Peters (2006)
$Dummy_outsourcing_{it}$	It takes the value of 1 if the firm i has outsourcing activities during that year t , and 0, otherwise	(+)	Girma and Görg (2004), López (2014), Ten Raa and Wolff (2001)
$Outsourcing_exp_intensity_{it}$	Ratio of total outsourcing expenditure to total expenditure of firm i at year t	(+)	Daveri and Jona-Lasinio (2008), Girma and Görg (2004), López (2014), Ten Raa and Wolff (2001)

Source(s): Authors' synthesis

Table 1.
Variable description and expected signs

Variables	Obs	Mean	Std. Dev	Min	Max
lnTFP	12,939	4.437	5.538	0.225	507.901
Dummy outsourcing	12,939	0.056	0.230	0	1
Outsourcing expenditure Intensity	12,939	0.004	0.031	0.000	0.972
Firm age	12,939	13.661	10.245	2	77
Firm size	12,939	13.678	1.832	5.288	19.995
Capital structure	12,939	0.091	0.255	0.000	12.886
Dummy innovation	12,939	0.481	0.499	0	1

Source(s): Authors' calculations

Table 2.
Descriptive statistics of TFP and other variables

The results suggest that outsourcing can explain the difference in total factor productivity at 1% statistically significant level; nevertheless, the effect is relatively modest due to the coefficient of 2.15%. This means that firms with outsourcing activities will get the total factor productivity at 2.15%, higher than that of those without outsourcing activities. In addition, firm size and innovation factors are negative while firm leverage and firm age have positive correlation with firm productivity. Smaller firms may have higher productivity than that of the larger ones. The reason for this case is that small firms have more motivations to develop themselves to be bigger, resulting in their efficiency improvement. Higher ratio of debt over

Variables	OLS (1)	FE (2)	FE, Driscoll Kraay (3)
Dummy_outsourcing	-0.023** (0.010)	0.016 (0.011)	0.022*** (0.004)
Firm age	-0.001 (0.001)	0.001*** (0.001)	0.001* (0.001)
Firm size	-0.001 (0.001)	0.012*** (0.004)	-0.008*** (0.003)
Capital structure	0.041*** (0.0110)	0.034*** (0.013)	0.029*** (0.010)
Dummy_innovation	0.021*** (0.005)	0.006 (0.006)	-0.009*** (0.002)
Constant	1.422*** (0.020)	1.233*** (0.049)	1.409*** (0.057)
Year dummies	N	N	Y
Industry dummies	N	N	Y
Observations	12,939	12,939	12,939
R-squared	0.003	0.005	
Number of groups	4,549	4,549	4,549

Note(s): (1) Robust *t*-statistics in parentheses; (2)* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

For definitions of the variables, please refer to [Table 1](#)

Source(s): Authors' calculations from STATA software

Table 3.
Effects of outsourcing
participation on TFP

total capital of firm will create the incentive for firms to grow their productivity. In contrast with the initial expectation, the innovation variable in this case is with negative impact on firm productivity. For SME manufacturing enterprises in developing countries, leveraging inexpensive labor is currently prioritized while investing in R&D often requires significant capital for equipment and human resources. These high costs can impact profit margins, leading to potentially reducing further investments intended to enhance TFP for businesses. Additionally, the environment for efficient utilization of R&D expenditure is not fully developed in these regions yet, leading to limiting the effectiveness of such investments.

4.1 The relationship of outsourcing expenditure and firms' TFP

Similarly, [Table 4](#) presents the results to investigate the effect of outsourcing expenditure intensity on total factor productivity within the group of firms with outsourcing activities.

The results from Column 3 (using FE with Driscoll Kraay's standard error method with year and industry controller) confirm that outsourcing expenditure intensity have the significant positive effect on total factor productivity; in particular, the increase of one percent in outsourcing expenditure intensity will lead to an 0.334% increase in total factor productivity. The positive relationship between outsourcing expenditure intensity and firm productivity reveals in this study is consistent with those results from the previous literature; listed as [Amiti and Wei \(2009\)](#) and [López \(2014\)](#) for developed countries. Similar to the result for the total sample, firm age as well as firm leverage, and capital structure brings positive impacts on firms' total factor productivity. It is argued that when applying outsource, larger firm will have better possibility to employ more outsourcing to get higher TFP. For those SMEs in a developing economy like Vietnam, it is difficult to explain the change in productivity based on transaction cost theory or resource dependency theory. Instead, resource-based view (RBV) is the most suitable to understand the positive effects of outsourcing on SMEs' TFP. An SME, owning some advantages, is more likely to keep its core competencies listed as market experience, quick service, or adaptability to emerging shocks in order to improve their financial and non-financial performance, by which it can improve

Variables	(1) <i>OLS</i>	(2) <i>FE</i>	(3) <i>Driscoll Kraay</i>
Outsourcing expenditure intensity	0.308** (0.133)	0.200 (0.320)	0.334*** (0.096)
Firm age	-0.001 (0.001)	0.006 (0.005)	0.004*** (0.001)
Firm size	0.017*** (0.005)	0.047** (0.023)	0.028** (0.014)
Capital structure	0.064*** (0.025)	0.123** (0.050)	0.091*** (0.030)
Dummy innovation	0.019 (0.022)	0.004 (0.053)	0.020 (0.035)
Constant	1.121*** (0.071)	0.614* (0.332)	0.802*** (0.198)
Year dummies	N	N	Y
Industry dummies	N	N	Y
Observations	726	726	726
R-squared	0.034	0.048	
Number of groups	584	584	584

Table 4. Effects of outsourcing expenditure on TFP

Note(s): (1) Robust *t*-statistics in parentheses; (2)* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$
For definitions of the variables, please refer to [Table 1](#)
Source(s): Authors' calculations from STATA software

total productivity factor. As in line with [Long \(2005\)](#), it is possible SMEs possibly keep incomplete outsourcing as well in order to prevent technology spillover to the supply partner.

5. Conclusion

Main findings obtained from this study are drawn as follows. Firstly, a statistically significant and positive relationship between outsourcing and firms' total factor productivity is indicated. Outsourcing-firms intend to have 2.15% higher in total factor productivity than those without outsourcing activities; however, the descriptive statistics analysis of study reveals that the number of Vietnamese SMEs are aware of outsourcing practices is being minor. These results are consistent with the conclusions from a majority of the previous papers in Western countries ([Girma & Görg, 2004](#); [Amiti & Wei, 2009](#)).

Secondly, outsourcing expenditure intensity provides a significantly positive relationship on firms' total factor productivity. An increase of 1% in outsourcing expenditure intensity can lead to the increase of 0.33% in firms total factor productivity when running regression for the group of firms with outsourcing activities. This result is supported by the variety of theories and previous researches ([López, 2014](#); [Görg, Hanley, & Strobl, 2008](#); [Austin-Egole & Iheriohanma, 2021](#)). This is appropriate for the Vietnam market which is dominated by SMEs. Outsourcing services help SMEs overcome their constraint in some aspects. Consequently, employing more outsourcing activities (representing the fact of spending more outsourcing expenditure) will open more opportunities for SMEs to be more efficient in enhancing the TFP.

Thirdly, the regression analysis conducted on the entire dataset or specific groups of outsourcing firms demonstrates that the control variables, namely firm age and capital structure, exhibit a positive association with firm-level total factor productivity. This indicates that firms with greater experience tend to operate more efficiently. Moreover, firms with a higher proportion of debt in relation to their total assets are anticipated to outperform firms with a lower debt ratio.

While the findings provide valuable insights into the research gap regarding the impact of outsourcing on productivity in a developing country using firm-level data, there are certain limitations that should be addressed in future studies. This study primarily focuses on two dimensions of outsourcing, namely the presence of outsourcing (represented by an outsourcing dummy variable) and the intensity of outsourcing expenditure. However, it does not capture the nuances of different types of outsourcing, such as inshore outsourcing versus offshore outsourcing, or material outsourcing versus service outsourcing.

Future studies should extend their exploration of outsourcing, assessing various types beyond just binary and intensity measures, listed as inshore versus offshore and material versus service outsourcing. Additionally, the influence of local factors, including political environment, union presence, legal aspects, and organizational culture, should be considered as these can significantly shape the productivity of an outsourcing relationship. Future research could benefit from a comparative analysis of outsourcing impacts on productivity across the developed nations and the developing nations. Furthermore, industry-specific studies, particularly in sectors like banking and healthcare where human resource outsourcing is prevalent, could offer valuable insights, especially in the context of small and medium-sized enterprises leveraging inexpensive labor within the service sector (Awe, Kulangara, & Henderson, 2018).

In summary, this research presents compelling evidence for policymakers and business practitioners regarding the strategic adoption of outsourcing to enhance the productivity of small and medium-sized enterprises (SMEs). Importantly, the study reinforces previous findings by demonstrating that outsourcing can be beneficial not only for multinational corporations or large firms in developed nations but also for small businesses operating in developing economies. These findings highlight the potential of outsourcing as a growth driver for SMEs and emphasize its relevance across diverse business contexts.

References:

- Amiti, M., & Wei, S. J. (2009). Service offshoring and productivity: Evidence from the US. *World Economy*, 32(2), 203–220.
- Antonietti, R., Ferrante, M. R., & Leoncini, R. (2016). Local market size, social capital and outsourcing: Evidence from Emilia Romagna. *Small Business Economics*, 47(1), 243–260.
- Arnold, U. (2000). New dimensions of outsourcing: A combination of transaction cost economics and the core competencies concept. *European Journal of Purchasing and Supply Management*, 6(1), 23–29.
- Austin-Egole, I. S., & Iheriohanma, E. B. J. (2021). Outsourcing as a leveraging strategy for organizational productivity in Covid-19 era. *European Journal of Business and Management*, 13(6), 133–139.
- Awe, O. A., Kulangara, N., & Henderson, D. F. (2018). Outsourcing and firm performance: A meta-analysis. *Journal of Strategy and Management*, 11(3), 371–386.
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99–120.
- Belderbos, R., Carree, M., & Lokshin, B. (2004). Cooperative R&D and firm performance. *Research Policy*, 33(10), 1477–1492.
- Coase, R. H. (1937). The nature of the firm. *Economica*, 4(16), 386–405.
- Corbett, M. F. (2004). *The outsourcing revolution: Why it makes sense and how to do it right*. Chicago: A Dearborn Trade Publishing.
- Crinò, R. (2008). *Service offshoring and productivity in Western Europe* (pp. 1–8). Economics Bulletin.
- Cucculelli, M., Mannarino, L., Pupo, V., & Ricotta, F. (2014). Owner-management, firm age, and productivity in Italian family firms. *Journal of Small Business Management*, 52(2), 325–343.

- Daveri, F., & Jona-Lasinio, C. (2008). Off-shoring and productivity growth in the Italian manufacturing industries. *CESifo Economic Studies*, 54(3), 414–450.
- Dhawan, R. (2001). Firm size and productivity differential: Theory and evidence from a panel of US firms. *Journal of Economic Behavior and Organization*, 44(3), 269–293.
- Doh, J. P. (2005). Offshore outsourcing: Implications for international business and strategic management theory and practice. *Journal of Management Studies*, 42(3), 695–704, doi: [10.1108/S1571-502720170000030009](https://doi.org/10.1108/S1571-502720170000030009).
- Driscoll, J. C., & Kraay, A. C. (1998). Consistent covariance matrix estimation with spatially dependent panel data. *The Review of Economics and Statistics*, 80(4), 549–560.
- Falk, M. (2012). International outsourcing and productivity growth. *Review of Economics and Institutions*, 3(1), 19.
- Gerbl, M., McIvor, R., & Humphreys, P. (2009). Global services outsourcing: Critical aspects and future directions. *Paper presented at the POMS 20th Annual Conference*, Orlando.
- Gilley, K. M., & Rasheed, A. (2000). Making more by doing less: An analysis of outsourcing and its effects on firm performance. *Journal of Management*, 26(4), 763–790.
- Girma, S., & Görg, H. (2004). Outsourcing, foreign ownership, and productivity: Evidence from UK establishment-level data. *Review of International Economics*, 12(5), 817–832.
- Görg, H., Hanley, A., & Strobl, E. (2008). Productivity effects of international outsourcing: Evidence from plant-level data. *Canadian Journal of Economics/Revue Canadienne D'économique*, 41(2), 670–688.
- Grant, R. M. (1991). The resource-based theory of competitive advantage: Implications for strategy formulation. *California Management Review*, 33(3), 114–135.
- Griffith, R., Huergo, E., Mairesse, J., & Peters, B. (2006). Innovation and productivity across four European countries. *Oxford Review of Economic Policy*, 22(4), 483–498.
- Gurbaxani, V., & Whang, S. (1991). The impact of information systems on organizations and markets. *Communications of the ACM*, 34(1), 59–73.
- Hall, B. H., Lotti, F., & Mairesse, J. (2009). Innovation and productivity in SMEs: Empirical evidence for Italy. *Small Business Economics*, 33(1), 13–33.
- Huergo, E., & Jaumandreu, J. (2004). Firms' age, process innovation and productivity growth. *International Journal of Industrial Organization*, 22(4), 541–559.
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305–360.
- Landefeld, J. S., & Mataloni, R. (2004). *Offshore outsourcing and multinational companies*. Washington, DC: Bureau of Economic Analysis, US Department of Commerce.
- Lankford, W. M., & Parsa, F. (1999). Outsourcing: A primer. *Management Decision*, 37(4), 310–316.
- Lei, D., & Hitt, M. A. (1995). Strategic restructuring and outsourcing: The effect of mergers and acquisitions and LBOs on building firm skills and capabilities. *Journal of Management*, 21(5), 835–859.
- Levinsohn, J., & Petrin, A. (2003). Estimating production functions using inputs to control for unobservables. *The Review of Economic Studies*, 70(2), 317–341.
- Lin, S., & Ma, A. C. (2012). Outsourcing and productivity: Evidence from Korean data. *Journal of Asian Economics*, 23(1), 39–49.
- López, A. (2014). Outsourcing and firm productivity: A production function approach. *Empirical Economics*, 47(3), 977–998.
- Loh, L., & Venkatraman, N. (1995). An empirical study of information technology outsourcing: Benefits, risks, and performance implications. *ICIS 1995 Proceedings* (Vol. 25).
- Long, N. V. (2005). Outsourcing and technology spillovers. *International Review of Economics and Finance*, 14(3), 297–304.

- Lovallo, D. P., & Mendonca, L. T. (2007). Strategy's strategist: An interview with Richard Rumelt. *McKinsey Quarterly*, 4, 56.
- Lutchen, M. (2004). *Outsourcing IT headaches is no answer* (pp. 18–19). Chief Executive.
- Margaritis, D., & Psillaki, M. (2010). Capital structure, equity ownership and firm performance. *Journal of Banking and Finance*, 34(3), 621–632.
- Matejun, M. (2010). Application of the outsourcing concept in managing small and medium-sized enterprises. *Management*, 2, 77–90.
- McIvor, R. (2009). How the transaction cost and resource-based theories of the firm inform outsourcing evaluation. *Journal of Operations Management*, 27(1), 45–63.
- Michael, B., & Michael, R. (2011). A transaction cost economics view of outsourcing. *International Journal of Business, Humanities and Technology*, 1(2), 34–43.
- Myers, S. C. (1977). Determinants of corporate borrowing. *Journal of Financial Economics*, 5(2), 147–175.
- Penrose, E. (1959). *Theory of the growth of the firm*. New York: John Wiley & Sons.
- Petrin, A., Poi, B. P., & Levinsohn, J. (2004). Production function estimation in Stata using inputs to control for unobservables. *Stata Journal*, 4, 113–123.
- Pfeffer, J., & Salancik, G. R. (1978). *The external control of organizations: A resource dependence approach*. NY: Harper and Row Publishers.
- Quinn, J. B., & Hilmer, F. G. (1994). Strategic outsourcing. *Sloan Management Review*, 35(4), 43.
- Riordan, M. H., & Williamson, O. E. (1985). Asset specificity and economic organization. *International Journal of Industrial Organization*, 3(4), 365–378.
- Saeidi, S. P., Sofian, S., Saeidi, P., Saeidi, S. P., & Saeidi, S. A. (2015). How does corporate social responsibility contribute to firm financial performance? The mediating role of competitive advantage, reputation, and customer satisfaction. *Journal of Business Research*, 68(2), 341–350.
- Sia, S. K., Koh, C., & Tan, C. X. (2008). Strategic maneuvers for outsourcing flexibility: An empirical assessment. *Decision Sciences*, 39(3), 407–443.
- Strange, R., & Magnani, G. (2017). The performance consequences of manufacturing outsourcing: review and recommendations for future research. In T. Pedersen, A. Camuffo, T. Devinney, & L. Tihanyi (Eds), *Breaking up the global value chain: Opportunities and challenges* (Vol. 30, pp. 217–244), Advances in International Management, London: Emerald.
- Ten Raa, T., & Wolff, E. N. (2001). Outsourcing of services and the productivity recovery in US manufacturing in the 1980s and 1990s. *Journal of Productivity Analysis*, 16(2), 149–165.
- Teng, J. T., Cheon, M. J., & Grover, V. (1995). Decisions to outsource information systems functions: Testing a strategy-theoretic discrepancy model. *Decision Sciences*, 26(1), 75–103.
- Tovar, B., Ramos-Real, F. J., & De Almeida, E. F. (2011). Firm size and productivity: Evidence from the electricity distribution industry in Brazil. *Energy Policy*, 39(2), 826–833.
- Ulrich, D., & Barney, J. B. (1984). Perspectives in organizations: Resource dependence, efficiency, and population. *Academy of Management Review*, 9(3), 471–481.
- Weidenbaum, M. (2005). Outsourcing: Pros and cons. *Business Horizons*, 48(4), 311–315.
- Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, 5(2), 171–180.
- Williamson, O. E. (1979). Transaction-cost economics: The governance of contractual relations. *The Journal of Law and Economics*, 22(2), 233–261.
- Williamson, O. E. (1985). Reflections on the new institutional economics. *Journal of Institutional and Theoretical Economics*, H. 1, 187–195.
- Williamson, O. E. (1989). Transaction cost economics. *Handbook of Industrial Organization*, 1, 135–182.
- Windrum, P., Reinstaller, A., & Bull, C. (2009). The outsourcing productivity paradox: Total outsourcing, organisational innovation, and long run productivity growth. *Journal of Evolutionary Economics*, 19(2), 197.

Winkler, D. (2010). Services offshoring and its impact on productivity and employment: Evidence from Germany, 1995–2006. *The World Economy*, 33(12), 1672–1701.

Yuchtman, E., & Seashore, S. E. (1967). A system resource approach to organizational effectiveness. *American Sociological Review*, 32(6), 891–903.

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