Building reputation through sustainable supplier selection: the case of an emerging economy

Mohammad Asif Salam

Department of Business Administration, Faculty of Economics and Administration, King Abdulaziz University, Jeddah, Saudi Arabia, and

Murad Ali

Department of HRM, Faculty of Economics and Administration, King Abdulaziz University, Jeddah, Saudi Arabia

Abstract

Purpose – The purpose of this research is to examine the drivers of sustainable supplier selection (SSS) and investigate the extent to which it is associated with a buyer's financial performance within an emerging economy context.

Design/methodology/approach – The data were collected from 235 supply chain and procurement professionals in Thailand. The structural relationship was tested using partial least squares based structural equation modeling (PLS-SEM) and PROCESS tool.

Findings – Based on the empirical findings, firms that pursue sustainability initiatives during supplier selection process enjoy better financial performance than their competitors. The analysis suggests six hypothetical paths explain SSS. Suppliers' human rights and safety focus are the most powerful determinants of SSS. Significantly, positive support was found for the SSS and buyers' financial performance relationship. Finally, there is a significant moderating effect of resource investment on sustainability efforts.

Research limitations/implications – Data for the study were collected from a single industry, so the findings are indicative but not representative of all supply chains. Due to this limitation, the findings cannot be generalized across other countries and industries. This study is a starting point in understanding the role of SSS in creating a sustainable supply chain. Future research may develop a comprehensive understanding of the nature and magnitude of the impact of SSS on sustainable supply chains.

Originality/value – This paper contributes toward an understanding of the determinants of SSS and its consequences for sustainable supply chains.

Keywords Sustainable supplier selection, Purchasing social responsibility, Financial performance, Supply chain management, Stakeholder theory

Paper type Research paper

1. Introduction

Many of the global supply chains rely on emerging economy suppliers for their sourcing decisions due to various reasons, such as close proximity to markets, close proximity to manufacturers, quality, delivery, flexibility and skilled and low-cost labors. In recent years, the reputations of many organizations have been at stake by the questionable practices of their suppliers owing to sustainability issues (Foerstl *et al.*, 2015). There is ample anecdotal evidence suggesting that firms can suffer severe losses due to social, ecological or ethical problems hidden in their supply chains. To make things even worse, they know very little about the

magnitude of sustainability issues that emerge as risks and how those risks eventually impact focal firms to suffer losses (Hofmann *et al.*, 2014). For example, Chowdhury (2017) describes the Rana Plaza (Bangladesh) tragedy which triggered international outrage, forcing reputable US and European clothing brands to improve safety conditions at their supplier factories. Incidents such as these emphasize the need for more research into supplier selection, social responsibility and sustainability. Despite the renewed call for research focusing on sustainability in purchasing and supply management (Thornton *et al.*, 2013; Kumar and Rahman, 2016), the challenges of identifying sustainable suppliers are still under-explored.

The process to sustainable supply chain practice begins with sustainable suppliers. Carter and Easton (2011) suggest that firms should not select suppliers purely based on price, delivery and service quality but also on their ability to integrate sustainability into their business practices. Buying firms are paying close attention to sustainability compliance as scandals can damage their business (Koplin *et al.*, 2007). Reuter *et al.* (2010, p. 46) defined sustainability as "the tripartite pursuit of economic, ecological, and social performance," which Elkington (1998) named the "triple bottom line" of an organization. The purpose of this study is to explore the drivers of sustainable supplier selection (SSS) and its impact on firms' financial performance. Donaldson and Preston (1995) argued that commitment to sustainability comes at a cost, and stakeholder pressures are the drivers of SSS phenomena in the supply chain. Building on stakeholder theory, the current study addresses the SSS issue by examining how socially responsible purchasing practices which are measured by the purchasing social responsibility (PSR) dimensions, such as customers, the government, employees and the society at large as primary constituencies of the firm, determine the extent to which firms consider sustainability aspects in the selection of emerging economy suppliers. Further, we analyze how SSS relates to the firm's financial performance, which eventually reflects its market reputation.

On this backdrop, current study aims to examine the role of SSS on financial performance within an emerging economy context by addressing three research questions: *(1) What are the links between the purchasing social responsibility (PSR) and SSS? (2) Is SSS associated with firms' financial performance? (3) Does a firm's investment in sustainability programs impact the SSS-financial performance relationship?* To approach these research questions, the researchers develop a research framework using stakeholder theory.

2. Literature review

2.1 Purchasing social responsibility (PSR)

Carroll (1979) defined PSR as "purchasing activities that meet the ethical and discretionary responsibilities expected by society." Carter and Jennings (2004) examined the role of PSR in supply chain management, theoretically and empirically. The dimensions of PSR include diversity, environment, ethical or fair treatment, human rights, community focus and safety. The dimensions of PSR are closely related to those of corporate social responsibility (CSR) and embedded within the central tenets of stakeholder theory. Consumer perception of a firm's CSR activities positively influences their view of the company, customer satisfaction, loyalty and hence financial performance (Feng *et al.*, 2017).

Global sourcing has become a prominent topic in the field of purchasing and supply management (PSM) and leads to the emergence of PSR (Monczka *et al.*, 2008). Moreover, Munro *et al.* (2018) also argue that CSR initiatives must be relevant to stakeholders and local market needs. Hence, sustainability encompasses the tripartite pursuit of economic, environmental and social performance, the triple bottom line (Carter and Rogers, 2008). The PSR makes the firm responsible for sustainable processes on suppliers' premises. Any failure or irresponsible actions of suppliers reflect on the buying firm, and may lead to loss of reputation and legal obligations (Koplin *et al.*, 2007; Panahifar *et al.*, 2018). In line with earlier studies by Carroll

(1979), Carter and Jennings (2004), Munro *et al.* (2018) and Carter and Rogers (2008), in this study, PSR has been defined as *a set of purchasing practices that encompass the ecological, social, ethical, economic and discretionary responsibilities expected by society.*

2.2 Sustainable supplier selection (SSS)
The term sustainability encompasses an integration of social, environmental and economic responsibilities. In a McKinsey and Co. (2014) global survey, 43% of 3,344 executives representing the full range of industries, regions, company sizes and functional specialties reported their companies seek to align sustainability with their overall business. This result was up from 30% in 2012. Sustainable supplier selection (SSS) is a critical step toward creating a sustainable supply chain which is defined by Carter and Rogers (2008) as, "the strategic, transparent integration and achievement of an organization's social, environmental and economic goals in the systemic coordination of key inter-organizational business processes for improving the long-term economic performance of the individual company and its suppliers [and customers]" (p. 368). Drawing on the extant literature (e.g., Carter and Jennings, 2004, 2002a, b; Walker and Jones, 2012), the central focus of this study is to integrate supplier selection, PSR and sustainability in the supply chain, and link them to a firm's financial performance through SSS.

SSS is treated as a multidimensional construct and based on studies by Walker and Jones (2012) and Thornton *et al.* (2013), in this study, SSS is defined as, *a firm's strategic orientation and transparent commitment toward selecting suppliers who are capable of delivering materials through business processes that are environmentally safe, socially responsible and economically viable for improving the long-term performance of entire supply chain.* This definition combines supplier selection, sustainability and PSR in the field of supply chain management. SSS has been operationalized as a higher-order construct and formative construct including six sub-dimensions adapted from Carter and Jennings (2008; 2004; 2002a and b). These dimensions are diversity, environmental, supplier ethical treatment, human rights, philanthropy, safety and commitment to sustainability.

In the sustainable supply chain management (SSCM) stream of research, studies have analyzed the impact of suppliers' practices on buyers' financial performance. Thornton *et al.* (2013) found a relationship between socially responsible supplier selection and buyer performance. However, the study addressed only the social dimension of sustainability using buyers' aggregate practices. This study goes further and considers the ecological, social and economic roles of supplier selection in financial performance. This study provides sustainable supplier selection measures rather than the aggregate practices of the buyer, and analyzes the causal mechanisms through which changes in the SSS influence the buyer's performance.

2.3 Linking PSR dimensions and SSS
Supplier's environmental awareness is a prerequisite for socially responsible sourcing. According to Carter and Jennings (2002a) and Carter and Rogers (2008), socially responsible firms ensure that supplier processes and products are environmentally sound. Carter and Jennings (2004) and Carter and Rogers (2008) argued environmental awareness will lead to successful implementation of an SSS initiative. This argument leads to the first research question and related hypotheses (H1–H6):

H1. There is a positive association between a supplier's environmental focus and SSS implementation.

Suppliers must be judged to be hones/ethical during the supplier selection process (Thornton *et al.*, 2013; Carter and Jennings, 2004). According to Carter and Jennings (2002b), unethical behavior includes lying, misleading or blaming suppliers' representatives for mistakes that

were not their fault. Munro *et al.* (2018) found fairness in the treatment of suppliers' leads to the successful implementation of SSS. This argument leads to the second hypothesis:

H2. There is a positive association between supplier's ethical treatment and SSS implementation.

Supplier's diversity reflects the extent to which the firms select suppliers belonging to gender or ethnic minority groups (Carter and Jennings, 2004). Firms can play a crucial role by contributing to the development of disadvantaged groups in the society. According to *Carter et al.* (1999), sourcing from minority-owned suppliers plays a key role in strengthening their economic outlook. Carter and Rogers (2008) proposed greater supplier diversity leads to the successful implementation of SSS. This argument leads to the third hypothesis:

H3. There is a positive association between supplier's diversity focus and SSS implementation.

The supplier's human rights dimension represents the extent to which firms actively seek suppliers who emphasize human social issues during normal operations (Carter and Jennings, 2004). According to Culpan *et al.* (2010), as supply chains become more globalized, interest in human rights and ethical treatment of workers by overseas suppliers is growing. Carter and Jennings (2004) and Carter and Rogers (2008) found increased respect for human rights leads to successful implementation of SSS. This argument leads to the fourth hypothesis:

H4. There is a positive association between a supplier's human rights focus and SSS implementation.

The supplier's safety dimension captures the emphasis firms place on potential suppliers' safety-related behavior (Carter and Jennings, 2004). A safe workplace can only be achieved by strict enforcement of safety measures. The significant increase in the number of industrial accidents (Yuan *et al.*, 2010) and work-related injuries (Yu *et al.*, 2012; Chowdhury, 2017) in countries such as China and Bangladesh highlights the need for scrutiny of the potential suppliers' safety conditions and standards. Strict enforcement of safety measures by supplier leads to successful implementation of SSS. This argument leads to the fifth hypothesis:

H5. There is a positive association between supplier's safety focus and SSS implementation.

The supplier's community focus dimension reflects the extent to which firms consider the impact of their supplier choice on the broader community (Carter and Jennings, 2004; Thornton *et al.*, 2013). Firms should consider the involvement of local suppliers and support them. Carter and Jennings (2002a) argue that firms can positively impact the local community by selecting and supporting local suppliers. This argument leads to the sixth hypothesis:

H6. There is a positive association between supplier's community focus and SSS implementation.

2.4 Linking SSS and financial performance

The focus of this study is to investigate empirically the extent to which buyer firms benefit financially from engaging in SSS. SSS is positively related to firms' long-term performance, which includes reputation, loyalty, innovativeness, lead time, quality and responsiveness (Blome *et al.*, 2014). In this case, firms' reputation is reflected through its financial performance due to the fact that the firm capitalizes on its image, "doing well, by doing good." The link between SSS and its outcome can be explained by stakeholder theory. Studies by Preston and O'bannon (1997), McGuire *et al.* (1988) and Cochran and Wood (1984) linked sustainable supplier behavior to economic performance. A firm's business activities are not

always governed by the shareholders' desires, but by supply chain partners and society as a whole. External stakeholders influence the firm and the supply chain, by ensuring that the firm undertakes activities that go beyond the profit-oriented view of shareholders. Firms that consider external stakeholders' interests in making an ethical decision may gain supernormal returns, if those decisions align with internal stakeholder interests (Freeman *et al.*, 2004; Donaldson and Preston, 1995). Carter and Jennings (2004) found a link between PSR practices and financial viability in their meta-analysis.

Based on morality shared end-users, Thornton *et al.* (2013) argue that financial performance improves as firms employ SSS. Carter and Rogers (2008) argue that many firms have recently begun to focus on sustainable supply chain issues, and it seems likely that SSS will be a strong predictor of financial performance. This argument leads to the second research question and related hypothesis: *What is the relationship between SSS and a firm's financial performance*?

H7. There is a positive association between SSS and financial performance.

Chandler (1962) proposed contingency theory suggesting that there are numerous ways that firms may choose to maximize their performance, depending on how they allocate their limited resources. In line with the strategy-structure-performance (SSP) paradigm, Galbraith and Nathanson (1978) argue that a firm's strategy to match with environmental factors will drive the improvement of organizational structure and processes. Miles and Snow (1984) postulate that firms that have proper strategic alignment should perform better. Following this line of argument, firms that strategically pursue SSS will gain more profit. The third research question addresses this, examining the hypothesized moderating effect: *Does a firm's investment in sustainability programs impact the SSS-financial performance relationship*?

H8. There is a moderating effect of a firm's resource investment in social programs on the relationship between SSS and financial performance.

The research model integrating all the hypothesized relationships among variables discussed above is summarized in Figure 1.

3. Methodology
3.1 Measurement instrument
All six dimensions of PSR scales were adapted to form the exogenous variables and measured by scales developed by Carter and Jennings (2004). These six exogenous variables are supplier's diversity focus, supplier's environmental focus, supplier's ethical treatment, supplier's human rights focus, supplier's community focus and supplier's safety focus. The resultant scales are designed to achieve the needs of organizational stakeholders while simultaneously considering ecological, social and economic constraints (Chow and Chen, 2012). The respective measures and SSS dimensions are shown in Table 1. To validate the SSS construct, the researchers followed the literature (e.g. Carter and Jennings, 2008; 2004; 2002a,b; Foerstl *et al.*, 2015; Thornton *et al.*, 2013) and tested its correlation with financial performance. We adopted three items from Thornton *et al.* (2013) to measure buyers' financial performance: (1) comparing sales revenue with other firms in their industry, (2) comparing sales growth with other firms in their industry and (3) comparing change in market share with other firms in their industry.

The questionnaire based on these SSS measures and financial performance measures was developed. We measured SSS using a 7-point Likert scale ranging from 1 (None whatsoever) to 7 (To a very great extent). We measured financial performance by using a 7-point Likert scale ranging from 1 (Much worse) to 7 (Much better). Although the questionnaire was originally developed in English, it was subsequently translated into Thai to facilitate

Figure 1.
Research model
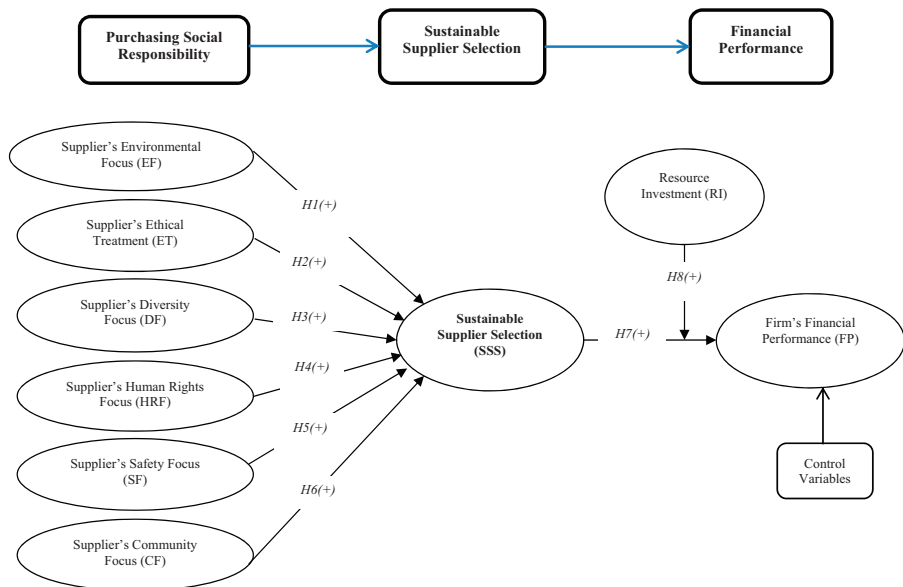
respondents' understanding. We followed the approach of Bhalla and Lin (1987) and ensured the linguistic equivalence of the two versions by using the back-translation technique. All measures were professionally translated and back-translated to ensure conceptual equivalence. A pretest was carried out with local professors to refine the measurement items. Using their feedback, we improved the final version of the questionnaire. Table 1 presents the questionnaire on the SSS dimensions and their measures.

SSS in this study has been treated as a mediating variable. Construct correlations are presented in Table 2. It was concluded that all scales were valid and reliable. The moderating effect of resource investment in social programs was included to determine whether tangible investments would financially differentiate firms from those adopting SSS principles but without investing in any other programs. The social program investment variable was composed of a four-item scale tapping investments in (1) SSS-related technology/innovations, (2) resource endowment to benefit underprivileged social groups, (3) providing jobs for the disabled, (4) supporting education/culture/arts programs, (5) investing in local economic development and (6) investing in national economic development. The social program investment scales were adopted from Thornton *et al.* (2013).

Control Variables. Due to the possible impact of external environmental and internal firm-level characteristics on the relationships between SSS and its dimensions and firm-level outcomes, several control variables were included. These measures were reflected by the *workforce size* (number of employees), *age* and *annual revenue* at the company level, along with an *industry sector* and *ownership structure.* The detailed description of control variables is given in Table 1.

4. Data analysis
4.1 Reliability analysis
The assessment of the individual reliability of the items depends on examining the standardized factor loadings. A widely recognized rule of thumb is to accept items with

Constructs	Code	Item wording	S.L	S.E	t-value[1,2]	A	C.R	AVE[3]	VIF
Sustainable supplier selection (SSS)		Please indicate your choice on a scale 1 = No extent whatsoever to 7 = Very great extent				0.94	0.95	0.77	3.24
	SR1	We seek suppliers based on their reasonability toward the environment	0.87	0.02	34.91				
	SR2	We seek suppliers based on their reasonability toward diversity	0.91	0.01	64.24				
	SR3	We seek suppliers based on their reasonability toward human rights	0.91	0.02	56.84				
	SR4	We seek suppliers based on their reasonability toward philanthropy	0.89	0.02	38.76				
	SR5	We seek suppliers based on their with reasonability toward safety	0.89	0.02	45.77				
	SR6	We seek suppliers based on their commitment to sustainability by addressing/balancing environmental, social and economic perspectives in their business decisions	0.76	0.04	21.56				
Resource investment in social programs (RINV)		Please indicate your choice on a scale 1 = Extremely unimportant to 7 = Extremely important				0.94	0.95	0.77	3.20
	RINV1	Investment in SRSS-related technology/ innovations	0.87	0.05	19.14				
	RINV2	Resource endowment to benefit underprivileged social groups	0.98	0.02	39.25				
	RINV3	Providing jobs for the disabled	0.87	0.05	17.59				
	RINV4	Investing in local economic development	0.73	0.07	10.6				
	RINV5	Supporting education/ culture/arts programs	0.74	0.07	10.9				
	RINV6	Investing in national economic development	0.72	0.09	7.94				
Supplier's diversity focus (SDF)		Please indicate your choice on a scale 1 = Strongly disagree to 7 = Strongly agree				1.00	1.00	1.00	2.10
	SDF1	We try to choose suppliers that are owned by minority ethnic groups/women	1.00	0.00	0.00				

Table 1.
Measurement model
results

Constructs	Code	Item wording	S.L	S.E	*t*-value[1,2]	*A*	C.R	AVE[3]	VIF
Supplier's environmental focus (SEF)		Please indicate your choice on a scale 1 = Strongly disagree to 7 = Strongly agree				0.83	0.88	0.66	2.30
	SEF1	We try to choose suppliers whose processes/products are environmentally safe	0.91	0.01	65.9				
	SEF2	We try to choose suppliers that use recyclable/reusable packaging	0.94	0.01	87.92				
	SEF3	We try to choose suppliers who participate in green purchasing initiative	0.56	0.07	8.18				
	SEF4	We try to choose suppliers that create as little waste as possible	0.79	0.04	19.18				
Supplier's ethical treatment (SET)		Please indicate your choice on a scale 1 = Strongly disagree to 7 = Strongly agree				0.87	0.91	0.72	2.41
	SET1	We avoid tactics that could mislead supplier salespeople during negotiations	0.82	0.03	23.65				
	SET2	We never lie or exaggerate when negotiating with suppliers	0.89	0.02	58.39				
	SET3	We avoid blaming suppliers for mistakes that were our own fault	0.86	0.02	43.38				
	SET4	We avoid using terms in our supply contracts that would allow us to take unfair advantage of suppliers	0.82	0.03	29.53				
Supplier's human rights focus (SHR)		Please indicate your choice on a scale 1 = Strongly disagree to 7 = Strongly agree				0.92	0.94	0.81	3.50
	SHR1	We try to choose suppliers that do not use sweatshop labor	0.89	0.02	42.52				
	SHR2	We try to choose suppliers that do not use child labor	0.90	0.02	51.25				
	SHR3	We try to choose suppliers that pay their employees a fair wage to live on	0.93	0.01	84.46				
	SHR4	We try to choose suppliers that support human rights	0.87	0.02	40.63				

Table 1.

(*continued*)

Constructs	Code	Item wording	S.L	S.E	t-value[1,2]	A	C.R	AVE[3]	VIF
Supplier's community focus (FCF)		Please indicate your choice on a scale 1 = Strongly disagree to 7 = Strongly agree				0.93	0.95	0.82	3.03
	FCF1	We try help our local economy by choosing local suppliers whenever possible	0.84	0.04	19.79				
	FCF2	We value social programs sponsored by our suppliers	0.93	0.01	80.67				
	FCF3	We value awareness of social issues by our suppliers	0.94	0.01	112.87				
	FCF4	Providing an opportunity for other local businesses to succeed is important to the success of our company	0.91	0.01	73.70				
Supplier's safety focus (SSF)		Please indicate your choice on a scale 1 = Strongly disagree to 7 = Strongly agree				0.85	0.93	0.87	2.65
	SSF1	We try to choose suppliers that operate a safe work environment	0.93	0.02	56.42				
	SSF2	We try to choose suppliers that move and deliver good safety	0.93	0.01	65.06				
Financial performance (FP)		Compared to other companies that do the same kind of work as yours, how does your company compare over the last 3 years on (please indicate your choice on a scale 1 = much worse to 7 = much better)				0.88	0.93	0.81	1.50
	FP1	Sales revenues	0.90	0.02	55.24				
	FP2	Sales growth	0.90	0.02	37.56				
	FP3	Market share	0.90	0.01	64.75				
Firm's age	Age	How long has your organization been established? (1. 10 or less; 2. 11–50; 3. 50 or more)	1.00	0.00	0.00	1.00	1.00	1.00	1.15
Firm's size	Size	What is your company size (employees)? (1. 100 or less; 2. 101–1,000; 3. 1,001–10,000; 4. 10,001+)	1.00	0.00	0.00	1.00	1.00	1.00	1.10

(*continued*)

Table 1.

Table 1.

Constructs	Code	Item wording	S.L	S.E	t-value[1,2]	A	C.R	AVE[3]	VIF
Annual revenue	Revenue	How large is your organization (annual revenues)? (1. $0 to $250M; 2. $250 to $500M; 3. $500M to $1B; 4. $1B to $3B; 5. $3B+)	1.00	0.00	0.00	1.00	1.00	1.00	1.01
Industry type	Industry	Which category best describes your organization's primary industry? (1. Supplier; 2. Manufacturer; 3. Distributor; 4. Retailer; 5. Transportation; 6. Mineral Resource; 7. Other)	1.00	0.00	0.00	1.00	1.00	1.00	1.07
Ownership	Ownership	Please indicate the ownership structure of your organization. (1. Private; 2. Public; 3. Joint -Public/Private)	1.00	0.00	0.00	1.00	1.00	1.00	1.09

Note(s): 'B' stands for Baht, the name of Thai currency. I baht = 32 $US
S.L = Standard loadings; S.E = Standard error; [1]Test-statistics are obtained by 5,000 Bootstrap runs; [2] Absolute t-values > 1.96 are two-tailed significant at 5%; α = Cronbach's alpha; C.R = Composite reliability; AVE = Average variance extracted; [3]Percentage of variance of item explained by the latent variable; VIF = Variance inflation factor

loadings of 0.80 (Fornell and Larcker, 1981), while loadings 0.50 or greater are considered practically significantly for exploratory research (Nunnally, 1978). In Table 1, the standardized factor loadings for each measurement item are provided. The t-test of all the loadings is at the $p < 0.001$ level. All the loadings are above this minimum. The reliability and convergent validity of the constructs are evaluated by analyzing the Cronbach's alpha and composite reliability of the indicator. Nunnally (1978) recommends a value of 0.80 as a threshold value for this indicator. The Cronbach's alpha scores ranged between 0.654 and 0.865, while the composite reliability scores ranged between 0.76 and 0.93, indicating adequate convergence or internal consistency. Table 2 shows the means, SD, minimum and maximum values of the response option of the scales, the correlation for all the constructs and the square root of the AVE on the diagonals. Mean values indicate that most constructs are above their respective mid-point, while correlations among the independent constructs are relatively low. Thus, multicollinearity was not a concern in this study (Hair *et al.*, 2010).

4.2 Validity analysis
The average variance extracted (AVE) provides an assessment of convergent validity. Fornell and Larcker (1981) recommend an AVE value ≥0.5. This means that 50% or more of the indicator variance should be accounted for. Consistent with this suggestion, all the constructs have an AVE value above this minimum as shown in Table 1. This study follows three approaches to assess the discriminant validity, that is: (1) Fornell-Larcker criterion, (2) cross-loading and (3) the heterotrait-monotrait ratio of correlations (HTMT). The correlation matrix in Table 2 shows that for each pair of constructs, the AVE square root of each construct (see Table 2 values on the diagonal) is higher than the absolute value of their

	M	S.D	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. SDF	5.27	1.18	*1.00*	0.43	0.41	0.71	0.53	0.36	0.61	0.49	0.33	0.07	0.05	0.09	0.04	0.11
2. SEF	5.56	1.14	0.53	*0.81*	0.71	0.65	0.66	0.69	0.77	0.66	0.76	0.22	0.18	0.04	0.06	0.09
3. SET	5.74	0.95	0.37	0.66	*0.85*	0.61	0.64	0.52	0.69	0.71	0.73	0.24	0.18	0.03	0.05	0.10
4. SHR	5.68	1.14	0.78	0.69	0.48	*0.90*	0.72	0.64	0.83	0.79	0.56	0.22	0.07	0.07	0.05	0.06
5. SCF	5.71	1.16	0.57	0.73	0.55	0.72	*0.92*	0.71	0.86	0.82	0.63	0.22	0.17	0.07	0.09	0.05
6. SSF	5.48	1.19	0.50	0.70	0.53	0.59	0.73	*0.93*	0.80	0.75	0.71	0.30	0.14	0.05	0.02	0.05
7. SSS	5.81	1.11	0.71	0.72	0.49	0.79	0.76	0.79	*0.88*	0.64	0.71	0.30	0.11	0.06	0.06	0.05
8. RI	5.60	1.15	0.62	0.74	0.59	0.70	0.78	0.76	0.77	*0.88*	0.47	0.21	0.17	0.07	0.09	0.04
9. FP	5.80	1.07	0.34	0.71	0.75	0.48	0.53	0.58	0.56	0.55	*0.90*	0.35	0.18	0.09	0.11	0.07
10. Age	1.92	0.46	0.02	0.08	0.06	0.08	0.13	0.08	0.05	0.14	0.15	*1.00*	0.03	0.05	0.15	0.17
11. Size	4.30	14.01	−0.06	0.12	0.06	0.00	0.11	0.08	0.09	0.11	0.07	0.05	*1.00*	0.01	0.09	0.08
12. Revenue	5.66	17.60	−0.1	−0.17	−0.16	−0.18	−0.32	−0.18	−0.25	−0.23	−0.14	0.05	−0.03	*1.00*	0.02	0.26
13. Industry	2.43	1.30	−0.03	0.05	0.01	−0.07	0	−0.04	−0.07	−0.05	0.02	0.12	0.05	−0.06	*1.00*	0.03
14. Ownership	5.35	18.75	−0.06	0.06	0.1	−0.02	0.05	0.03	0.05	0.07	0.17	−0.05	0.27	−0.04	0.08	*1.00*

Note(s): SEF: Supplier's environmental focus; SET: Supplier's ethical treatment; SDF: Supplier's diversity focus; SHF: Supplier's human rights focus; SSF: Supplier's safety focus; SCF: Supplier's community focus; FP: Financial performance; RI: Resource investment; SSS: Sustainable supplier selection

Correlations are significant at the 0.01 level (2-tailed); M = Mean; S.D = Standard deviation, diagonal and italicized elements are the square roots of the AVE (average variance extracted); below the diagonal elements are the correlations between the constructs values; Above the diagonal elements are the HTMT values

Table 2.
Descriptive statistics, correlations, square root of AVE and HTMT analysis results

correlation (Fornell and Larcker, 1981). The results of cross-loading indicate that all items loaded higher on their respective constructs than on the other constructs and the cross-loading differences are much greater than the suggested threshold of 0.1 (Gefen and Straub, 2005). In all cases, the HTMT values are below the threshold of 0.85 or 0.90 as shown in Table 2. These results confirm that the discriminant validity is present in this study.

4.3 Analysis of structural model

4.3.1 Evaluation of the overall model predictability. This study follows Hair *et al.* (2017) to estimate the structural model using partial least squares based structural equation modeling (PLS-SEM) technique. This study assesses the structural model for collinearity. The results show minimal collinearity in the structural model as all variance inflation factor (VIF) values are far below the common cutoff threshold of 5–10 (Hair *et al.*, 2017). The structural model predictability is computed using variance explained R^2 values for the dependent latent constructs. The R^2 values of SSS is 0.83, and for FP is 0.54, as shown in Table 3, which is a satisfactory level of predictability. Following Hair *et al.* (2017), the significance levels of the path coefficients were obtained using the bootstrapping procedure (with 5,000 bootstrap samples and 235 bootstrap cases, using individual sign changes). The analysis of path coefficients and levels of significance of all direct relationships shows that H3–H7 were accepted while H1 and H2 were not accepted, as shown in Table 3(a).

Finally, the blindfolding procedure was run to compute the model's predictive relevance. Table 3 provides the Q^2 values of all the dependent constructs which are considerably above zero, thus providing support for the model's predictive relevance. This study follows Henseler *et al.* (2014) and refers to the standardized root mean square residual (SRMR) as an index for overall model fit validation. Scholars consider values below 0.08 as favorable (Hu and Bentler, 1999) in this instance. While the model estimation with PLS-SEM reveals an SRMR value of 0.07 as shown in Table 3, which confirms the overall fit of PLS-SEM (Hair *et al.*, 2017; Henseler *et al.*, 2014).
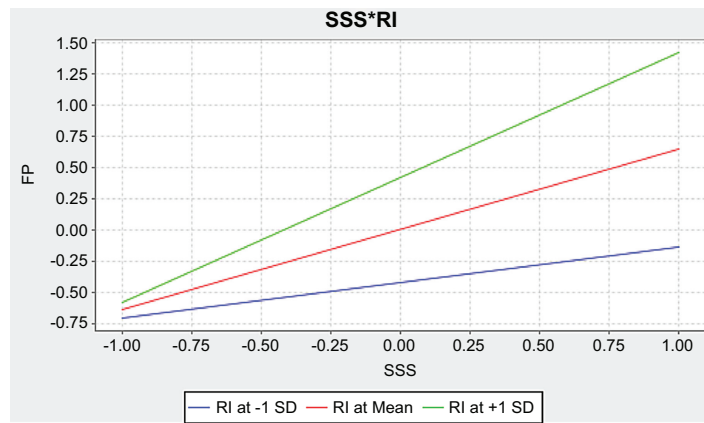
4.4 Analysis of moderating effect

This study employed a computational procedure in SPSS using the PROCESS macro developed by Hayes (2013), to test for moderation (H8). This procedure not only implements moderation or mediation analysis, but also combines both to determine the significance of the interaction effects at different values of the moderator in an integrated moderated mediation model (Hayes, 2013). This study used PLS latent variables scores in PROCESS for moderation analysis. The moderating effect of RI on the indirect relationships between PSR and FP via SSS was statistically significant ($\beta = 0.35$, $t = 7.55$), in support of H8.

Table 3(b) shows that RI moderates the relationship between SSS and FP which necessitates examining the effect of SSS on FP with changes in RI. Next, this study examined RI at three levels to determine if the indirect relationships associated with SSS varied at different levels of RI. In other words, a simple slope analysis is used to estimate the effect on the main variable (SSS) at the moderate ($M = 5.60$, S.D = 1.15) one SD below the mean (-1 S.D; i.e. 4.45) and one SD above the mean ($+1$ S.D; 6.75) levels of the moderator, RI (Hayes, 2013). All variables were mean-centered before analysis. Consistent with H8, Table 3(c) shows that when RI was low (-1 S.D), the conditional indirect effect (via SSS) of PSR on FP was positive and significant but weak ($\beta = 0.29$, boot SE = 0.07). However, when RI was high ($+1$ S.D), the conditional indirect effect was both positive and significant ($\beta = 0.99$, boot SE = 0.09). These findings support the notion of the H8, which means as the influence of the mediating role of SSS increases, the effect of RI increases even to a more considerable extent. As shown in Figure 2, the relationship between SSS and financial performance is lower when RI is low, and stronger when RI is high.

(a) Direct relationship

Hypothesis	Relationship	Path coefficient	S.E	t-value	Bootstrap 95% confidence interval	Conclusion
H1	SEF → SSS	0.01n.s	0.06	0.23	(−0.11, 0.13)	Not supported
H2	SET → SSS	0.01 n.s	0.05	0.23	(−0.09, 0.11)	Not supported
H3	SDF → SSS	0.16***	0.05	3.28	(0.06, 0.26)	Supported
H4	SHR → SSS	0.31***	0.07	4.60	(0.17, 0.45)	Supported
H5	SSF → SSS	0.29***	0.06	5.03	(0.17, 0.41)	Supported
H6	SCF → SSS	0.26***	0.06	4.29	(0.06, 0.26)	Supported
H7	SSS → FP	0.36**	0.12	2.91	(0.06, 0.26)	Supported

(b) Moderating effect

Hypothesis	Outcome	Interaction	Path coefficient	S.E	t-value	Bootstrap 95% confidence interval	Conclusion
H8	FP	Constant	−0.27	0.06	−4.95	(−0.38, −0.16)	Supported
		SSS	0.40	0.06	6.86	(0.28, 0.51)	
		RI	0.64	0.07	9.83	(0.51, 0.77)	
		SSS×RI	0.35	0.05	7.55	(0.26, 0.44)	

(c) Conditional indirect effect (via SSS) of PSR on FP at different levels of RI

Moderator	Effect	S.E	t-value	Bootstrap 95% confidence interval
Low; - 1.0022 SD (RI)	0.29	0.07	4.01	(0.15, 0.43)
Moderate; 0.0000 Mean (RI)	0.64	0.06	9.83	(0.51, 0.77)
High; + 1.0022 SD (RI)	0.99	0.09	11.35	(0.82, 1.17)

(d) Non-hypothesized relationship

Control variables paths	Effect	S.E	t-value	Bootstrap 95% confidence interval
Age → FP	0.03 n.s	0.05	0.62	(−0.07, 0.14)
Size → FP	−0.06 n.s	−0.06	−0.91	(−0.20, 0.07)
Revenue → FP	0.04 n.s	0.03	1.09	(−0.03, 0.10)
Industry → FP	0.05 n.s	0.05	1.03	(−0.04, 0.14)
Ownership → FP	0.14**	0.05	2.66	(0.04, 0.24)

SRMR composite model = 0.07
R^2 SSS = 0.83; $Q2$ SSS = 0.57
R^2 FP = 0.54; $Q2$ FP = 0.40

Note(s): SEF: Supplier's environmental focus; SET: Supplier's ethical treatment; SDF: Supplier's diversity focus; SHF: Supplier's human rights focus; SSF: Supplier's safety focus; SCF: Supplier's community focus; FP: Financial performance; RI: Resource investment; SSS: Sustainable supplier selection
$|t| \geq 1.65$ at p 0.05 level; ** $|t| \geq 2.33$ at p 0.001 level; *** $|t| \geq 3.09$ at p 0.001 level; n.s = Not significant (based on $t(4,999)$, one-tailed test)
R^2 = Determination coefficients; Q^2 = Predictive relevance of endogenous (omission distance = 7).
Threshold for $R^2 \geq 0.25$ (weak); ≥0.50 (moderate); ≥0.75 (substantial); Threshold for $Q^2 > 0$ indicate predictive relevance

Table 3.
Results for direct
relationships,
moderating and
conditional effects

Figure 2.
Moderating effect of RI
on the relationship
between SSS and FP
(see online version for
colors)

5. Conclusion and research implications

The SSS is a legitimate concern for the businesses while dealing with off-shore suppliers from the world's emerging economies, for example, Asia. Building on stakeholder theory, the current study examines the issue by analyzing the pressures from stakeholders' perspective as primary constituencies of the firm determining the extent to which firms consider social, ecological and economic aspects in the selection of emerging economy suppliers. Based on the data from one of the emerging markets in Asia, the results can be considered as indicative, rather than representative, of Asian supply chains. Based on the analysis of research model, all the eight hypothesized paths except two (suppliers' environmental focus and ethical treatment) were substantiated. These results are slightly different from earlier studies in the developed economies (Thornton *et al.*, 2013; Mishra and Suar, 2010; Carter *et al.*, 1999), where all of these paths were supported. Interestingly, we also found that firms' sustainable supplier selection practices are positively and significantly linked with superior financial performance. Also, the moderating effect of resource investment in sustainability initiatives was found to be significant.

The hypothesized paths that were not supported are H1 and H2: environmental focus and ethical treatment. This might be due to two features of selecting sustainable suppliers. First, anecdotal evidence suggests Thailand as an emerging economy is in the early stage of SSS adoption process. Companies seek short-term profits, while in later stages, companies might seek competitive advantage by adopting such practices. From the managerial perspective, our results suggest that the adoption of SSS is a multidimensional and gradual process rather than a static bundle of policies and practices related to choosing the right suppliers at a specific time. Second, Thailand is an emerging economy where environmental and ethical issues might have a lower priority than other PSR dimensions. However, awareness of the importance of the environmental and ethical treatment is growing.

In line with the stakeholder theory to achieve a combined result from which all the parties can benefit and take responsibility by pursuing the sustainability values of top management, a common desire to mitigate risk and stakeholder management are salient motivators for SSS adoption. Conversely, a lack of supplier awareness, negative perceptions and inadequate management support emerged as barriers to SSS implementation. This commitment to SSS through a cohesive and participative management in Thailand of all the relevant stakeholders can be benefited from the perspective of the theory of stakeholders. Many companies in Thailand are doing business with large MNCs and are increasingly under pressures from stakeholders (i.e. consumers, local government, global partners/alliances and

competitors). This motivates companies to adopt social and environmental practices to conform to global standards (Ansari *et al.*, 2010). This tendency is aligned with stakeholder theory, which postulated that businesses in emerging economies tend to adopt SSS to survive by reacting to external pressures, rather than proactively embedding SSS in their long-term business strategy and goals.

Finally, this study contributes to the sustainable supply chain management literature in three ways. First, a set of measurement scales for SSS has been adapted from the study by Carter and Jennings (2004) and applied with certain modifications. Second, this study theoretically establishes the link between Carter and Jennings's (2004) PSR variables and SSS, as well as empirically testing their relationships. Third, in earlier studies, Wu and Pagell (2011) found a positive relationship between a firm's sustainable business initiatives and its financial performance in the context of a mature economy. The present study was conducted within an emerging economy context that is culturally and economically different. Rettab *et al.* (2009) argue that socially and environmentally responsible business practices in emerging economies have little or no significance. Surprisingly, the findings of this study are counterintuitive, suggesting SSS and financial performance are also positively and significantly linked within the context of emerging economies.

This finding implies that by adopting SSS in emerging economies, MNCs and local firms can create a source of differentiation, and hence competitive advantage. Suppliers who do business with MNCs and are pursuing SSS can maintain and enhance their reputation as a qualifier and be a lucrative partner to do business with. This is in line with Porter and Kramer's (2006) argument, and it is through initiatives such as sustainable business practices that a company will have the most significant social impact and reap the greatest business benefits. Finally, building on SSS mechanism and drawing on stakeholder theory, current study adds to the existing body of literature by proactively engaging and communicating with key stakeholders, and having traceability and visibility into upstream supply chain operations can lead to superior financial performance.

Finally, the findings of this study have got macroeconomic implications in line with the sustainable development goals envisioned by the United Nations for the year 2030. Through adoption of SSS, business would be able to implement responsible production and consumption. This will enable to substantially change toward responsible management throughout the supply chain. SSS is expected to encourage companies, especially large and transnational companies operating in emerging economies, to adopt sustainable practices and to integrate sustainability information into their reporting system. Eventually, SSS will promote public procurement practices in emerging economies that are sustainable, in accordance with national policies and priorities, relevant information and awareness for sustainable development and lifestyles in harmony with nature.

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Corresponding author
Mohammad Asif Salam can be contacted at: mbamas@yahoo.com