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The impact of e-marketing orientation on performance in Asian SMEs: a B2B perspective

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ABSTRACT

Business-to-business (B2B) organisations are increasingly utilising electronic devices in their business operations in order to succeed in increasingly competitive markets. This trend is prevalent in the growing Asian markets, especially in the small and medium-sized enterprises (SMEs) sector. While prior research has focused on this issue in the context of large business-to-customer (B2C) organisations in Asia, there have hardly been any studies that have shed light on the B2B sector in the SME setting. This study aims to critically explore B2B e-marketing critical success factors (B2B-eM-CSFs) for SMEs operating in the Asian B2B marketplace. A key finding is the development of a theoretical framework for SMEs, emerging from the analysis of 406 companies from various industrial sectors. The study shows that interaction with the B2B-eM-CSFs is an important dimension and has a positive and significant impact on e-business efficiency and marketing improvements for Asian SMEs.

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KEYWORDS

Critical success factors; B2B e-marketplace; e-marketing; SMEs

Introduction

The development of a business-to-business (B2B) e-marketplace based on the use of Internet technologies for marketing purposes has attracted the attention of marketers for some years. The B2B e-marketplace can significantly improve the way companies deal with their customers and suppliers (Gilmore, Gallagher, and Henry 2007; Kosh and Schultze 2011) proved to be sustainable for B2B business relationships in the digital business environment (Stockdale and Standing 2004). The majority of the participants in the B2B e-marketplace are small and medium-sized enterprises (SMEs) (Chong et al. 2010).

E-marketing is a fundamental feature of the B2B e-marketplace, and the integration of marketing services within the B2B e-marketplace has long been studied by practitioners, academics and researchers (e.g. Kierzkowski et al. 1996; Rohm et al. 2004). According to Chong et al. (2010), the B2B e-marketplace is the main e-marketing resource for SMEs. Wong, Wilkinson, and Young (2010) agree that e-marketing is no longer new but is becoming a well-established marketing practice that SMEs use for customer relationship development. The B2B e-marketplace impelled the growth of B2B markets and e-marketing solutions that drive SMEs' marketing activities. In order to increase firm's performance, selection of B2B e-marketplace is crucial for firms to focus on their core competency (Yoo, Choudhary, and Mukhopadhyay 2011). There is a need to review the benefits

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of the B2B e-marketplace for SMEs, and the improved e-marketing ability and results they can gain due to the increased use of Internet technology (Cannon and Perreault 1999). It is also important to study the best practices that SMEs can use to capitalise on the opportunities provided by the B2B e-marketplace, through the integration of e-marketing with their existing marketing channels and practices, to increase consumer satisfaction, loyalty and profitability (Chong et al. 2010; Yoo, Choudhary, and Mukhopadhyay 2007).

B2B e-business has clearly evolved as firms have grown accustomed to doing business electronically. The advent of the Internet technology for global sharing of information is creating an innovative idea in marketing practices. The literature reflects the growth of the B2B sector in all industries, and the B2B e-marketplace is one of the platforms that have witnessed rapid growth (Bakos 1998; Yoo, Choudhary, and Mukhopadhyay 2011). Hence, identifying B2B-eM-CSFs for business efficiency and improved value chains in B2B exchanges is important. However, the literature is limited and most research in the past has been either descriptive or theoretical and often ignores the relationship between the B2B-eM-CSFs and e-business performance that could guide SMEs in their 'e' transformation. Consequently, marketing academics and practitioners have devoted considerable effort to identifying these critical factors. Based on our research of both the B2B-eM-CSF and the B2B e-marketplace literatures, and using the Asian B2B marketplace as an important context, we intend to answer the following research questions (RQs):

RQ1) What are the CSFs that are associated with B2B e-marketing?

RQ2) Do B2B-eM-CSFs affect e-business performance?

The paper is structured as follows. First, we review the B2B-eM-CSFs and their effects on e-business performance, and expose the research gaps in the field. A conceptual framework is developed. The research methods are then explained followed by the findings of the empirical analysis. Conclusions and some discussion are then presented. Finally, we address the study's limitations and identify future research avenues.

Identification and development of factors

We conduct an extensive literature analysis to provide new theoretical grounds in the B2B e-commerce field. The findings generally consider seven main factors that can assist firms in the implementation of B2B strategies. These factors are the following:

Customer management services (CMS)

The integration of customer relationship management (CRM) and e-marketing has long been studied by practitioners, academics and researchers (e.g. Kierzkowski et al. 1996; Saini, Grewal, and Johnson 2010). E-marketing is no longer new but is becoming a well-established marketing practice among SMEs for the management of customer relationships. In order to address this wider perspective, there is a need to identify the benefits of CMS derived from the B2B e-marketplace in order to enhance the e-marketing ability and results obtained from the increased use of CRM technology. It is also crucial to study best practices that SMEs can use to capitalise on the opportunities provided by the B2B e-marketplace, through the integration of e-marketing with their existing marketing channels and practices so as to increase consumer satisfaction, loyalty and profitability (Chong et al. 2010; Saini, Grewal, and Johnson 2010). As B2B and CMS are demanded more and more by customers, it is likely that CMS gained from the B2B e-marketplace will add value for SMEs. However, neither of the aforementioned works examined the relationship between CMS and e-business performance. CMS is an organisational interface with customers and is widely accepted as an effective formulation of marketing strategy for collecting, analysing and translating customer information into managerial action that can help in achieving resources allocation and

customer satisfaction (Ernst et al. 2011; Lam et al. 2014). The ability of the CMS to find a new market that is applicable to firms, which allow for integration and justification of desirable properties of an electronic transaction platform, is gradually becoming a powerful approach to increase marketing operational performances (Chong et al. 2010; Palumbo and Herbig 1998). Hence, we believe that there is a positive relationship between e-business performance and CMS. We therefore propose that CMS is an important factor that concentrates on the integration of e-marketing services derived from the B2B e-marketplace in order to maintain long-term relationships with customers in the e-marketplace.

Supply chain facilities (SCF)

Many academics and practitioners (Premkumar 2003; Albrecht, Dean, and Hansen 2005; Wong, Lai, and Cheng 2011) believe that integrating supply chain management (SCM) with the B2B e-marketplace could change the traditional B2B exchange methods and lead to the collaboration and sharing of information via the Internet. The main purpose of SCF is to link the manufacturer's operations with their suppliers, customers and intermediaries (Wong, Lai, and Cheng 2011). Hence, the exploration of how the B2B e-marketplace links with companies' procurement processes, operations, sales and marketing and distributions processes at different supply levels, in partnerships with their stakeholders, becomes important. The integration of SCF with the B2B e-marketplace has already been explicitly recognised and deliberately included in e-marketing studies (Premkumar 2003; Albrecht, Dean, and Hansen 2005). SMEs have realised that the B2B e-marketplace is emerging as a platform that is highly integrated with SCF, and thus enhances the performance of their existing marketing practices. The adoption of the B2B e-marketplace will be high if firms understand the benefits of SCF for their supply chain networks. Among the benefits of developing supply chain efficiencies using B2B are improved demand forecasts (Noordhoff et al. 2011), more efficient logistics information management (Wong, Lai, and Cheng 2011) and reduced cycle times (Premkumar 2003; Albrecht, Dean, and Hansen 2005; Noordhoff et al. 2011; Wong, Lai, and Cheng 2011). As suggested by Premkumar (2003), in order to make SCF to be more efficient, it is useful to use the B2B e-marketplace as a substitute for each participating business. Therefore, we propose that SCF must be understood as a dynamic e-marketing factor in which the understanding and management of future value-creating supply chain activities are crucial for achieving superior long-term e-business performance.

New product development (NPD)

The ability of e-marketing to explore new markets is gradually becoming one of the main tools for marketing activities (Porter 2001; Albrecht, Dean, and Hansen 2005; Bockstedt and Goh 2011). While e-marketing services derived from the B2B e-marketplace may offer cost savings in the form of low operational costs, the savings are not the only reason why e-marketing is important. A substantial proportion of any marketing costs will ultimately be passed on to the end-consumers. The more important effect of e-marketing will be that on firms' NPD ability (Ernst et al. 2011). The Internet can enable various kinds of collaborations between companies, helping them to achieve sustainable competitive advantages in the global business environment.

As a result, the B2B e-marketplace involves developing new product activities that enable the marketplace to offer unique value in the delivery of services to customers. Therefore, we propose that the integration of the B2B e-marketplace into a firm's marketing strategy and its value chain can open up opportunities for collaboration, thereby increasing the NPD ability of firms and their e-business performance.

Information system/information technology (IS/IT) infrastructure

IS/IT integration is a necessary element for collaboration among firms, markets and products/services in the e-marketplace (Bakos 1998; Glazer 1999; Kaplan and Sawhney 2000; Porter 2001). Bakos (1998) provides one of the earliest ideas relating to the emerging roles of IS/IT in marketing activities. Son and Benbasat (2007) emphasise the advantages of IS/IT integration of electronic purchasing and manufacturers' incentives to participate in the e-marketplace. Frost and Strauss (2002) focus on developing a website for cyber branding by adopting IS/IT integration. Glazer (1999) and Porter (2001) analyse the new IS/IT integration marketing paradigm for Internet economies. Kaplan and Sawhney (2000) argue that IS/IT integration produced a highly visible and prolific technological marketing tool for businesses. A critical aspect of IS/IT integration is that it involves multiple services which need to be integrated in order to provide a link between a firm and its customers (Ernst et al. 2011). We follow this view and stress that the IS/IT need to be integrated so as to achieve effective execution of marketing strategies and improve overall e-business performance. However, existing studies have not examined IS/IT integration in the B2B marketplace as an important factor for achieving business goals from the e-marketing perspective. In our study, we novelly link the IS/IT integration of the B2B e-marketplace to the firm's e-business performance.

Transparency and visibility of information (TVI)

The abundance of data available in the marketplace is intended to provide more information about trading parties, markets, procurement and competition in the e-business environment (Bakos 1998; Rollins, Bellenger, and Johnston 2012; Singh, Salam, and Iyer 2005). In such a transparent environment, it becomes easier for buyers/sellers to obtain competitive information. Therefore, TVI in the trading environment is a crucial factor in sustaining long-term relationships with trading partners. According to Bakos (1998), e-marketers are demanding a higher degree of transparency and visibility of information to foster improvements in their e-marketing strategy. The standardisation and visibility of information in the markets (Zhu 2004), and about trading parties (Singh, Salam, and Iyer 2005), procurement (Soh, Markus, and Goh 2006), competition (Bakos 1998; Yan 2010) and legal administration (Singh, Salam, and Iyer 2005) are important for addressing marketers' requirements. Among the items to be considered are their users, the quality of products/services, types of industry and geographical market information. Based on the previous studies, we therefore suggest that TVI in the B2B e-marketplace can raise a firm's e-business performance.

Government encouragement (GE)

For SMEs that want to take a share of revenues from the B2B e-marketplace and catch up with large-scale companies in the Internet economy, it is essential that governments accelerate their promotion and encouragement of B2B e-commerce. Promotion of B2B e-marketplace adoption by governments will push SMEs to a higher level of adoption (Morgeson and Mithas 2009). Nevertheless, the legal environment for e-business is still unclear in certain countries. Compared with B2B e-commerce in developed countries, those in emerging economies are facing a highly uncertain legal environment. For instance, in China there are several elements hindering the development of B2B e-commerce, including a lack of network security, insufficient telecommunication infrastructure, a lack of trust, a lack of laws and regulation concerning the e-environment, problems with standardisation, payment issues and a lack of awareness of the benefits of the e-environment (Hu, Wu, and Wang 2004). Thus, it is a must for governments to accelerate their law-making processes and develop sustainable and stable legal environments to support B2B e-marketplace adoption.

Senior management involvement (SMI)

Embarking on a B2B e-marketplace adoption initiative is a strategic decision and can only be taken by senior management. Senior executives' understanding of the B2B e-marketplace's operations and their knowledge, experience and leadership are among the important elements of adoption initiatives (Eid, Trueman, and Ahmed 2006; Gunasekaran and Ngai 2008). Top managers play a critical role in providing direction, authority and resources both during and after the implementation of B2B e-commerce. Several researchers (e.g. O'Callaghan, Kaufmann, and Konsynski 1992; Wang and Lin 2009) suggest that senior management are critical to success in recognising the opportunity the B2B e-marketplace provides for exploring and integrating competing technological and customer-oriented e-marketing resources. Such researchers also indicate that resource allocation and assigning staff to explore the B2B e-marketplace could be considered integral to the internal relationship management within a firm. To achieve this broadened perspective, senior management needs to explore the potential benefits of marketing through the B2B e-marketplace by providing resources to improve firms' marketing ability.

E-business performance

The literature review represented an original attempt to develop the new B2B-eM-CSFs for the Asian B2B marketplace. Hence, this study has contributed to the cumulative body of research in both CSF concepts and techniques in the use of the B2B e-marketplace for B2B e-business purposes. It is important that SMEs develop a systematic approach to identifying and prioritising CSFs in the implementation process and in line with the environment in which the adoption of e-commerce is located. Therefore, SMEs need to establish a comprehensive approach so as to manipulate and adopt each factor based on the findings and interpretation of this study. There is some debate among academics and practitioners as to how the CSFs relate to the successful performance of a firm (Ariyachandra and Frolick 2008; Chaffey et al. 2009; Merrilees, Rundle-Thiele, and Lye 2011; Morgan 2012). For instance, Chaffey et al. (2009) argue that e-business performance pertains to financial benefits obtained from the business process that account for identifying, anticipating and satisfying customer needs. B2B e-marketplace is a virtual, interactive and dynamic electronic trading platform, therefore, it is regarded as one important part of e-business activities that can create and maintain the business value.

According to Ariyachandra and Frolick (2008), identifying CSFs can help an organisation to focus on the important elements that affect business performance. Several drivers have been identified as motivating SMEs to adopt e-marketing to improve their business performance. The opportunity to eliminate the competitive disadvantages of SMEs in peripheral areas (Downie 2002; Gilmore, Gallagher, and Henry 2007), the chance to lower operating and marketing costs (Sculley and Woods 2001), the opportunity to better promote the company and enrich the overall marketing performance (Petersen, Ogden, and Carter 2007) are some such drivers.

Based on the above studies, we can develop an understanding of how performance is best measured so as to enable an organisation to monitor its ability to satisfy its customers in the B2B context. Ernst et al. (2011), Gunasekaran et al. (2009), Kwon, Yang and Rowley (2009), Naumann et al. (2010) and Zalocco, Pullins and Mallin (2009) suggest that measures of sales performance (e.g. sales units, revenue, market share and new accounts), customer satisfaction (extent of customer acquisition, retention and loyalty), operational cost reduction (cost savings and increased operational effectiveness) and relationship development (extent of establishing, developing and maintaining successful customer relationships) are key requirements of e-business success. Therefore, we propose that e-business performance can be measured with four items adapted from those prior works, namely, 'customer satisfaction', 'operational cost reduction', 'relationship development' and 'increased sales volume'.

Literature is indicative of the growth of the e-marketing activities in all industries, and B2B relationships is one of the business models that will offer greater value for SMEs in the e-marketing orientation. The main implication from the above is indicative of the need to understand the key success factors that are affecting marketing performance to ensure business efficiency in the B2B e-commerce environment. Hence, identifying The B2B-eM-CSF for business efficiency is important. However, the literature is limited and most research in the past has often ignored the development of a solid framework to guide SMEs for business transformation. Furthermore, it appears that there is limited literature that can contribute to solid academic or practical support in this area, often because they are limited exploitation of such frameworks by academics and industry professionals. The absence of a valid B2B-eM-CSF framework for SMEs as a guideline to participate in B2B e-commerce become a major research gap. In order to develop a better understanding of the topic under study, this paper has devoted considerable effort to identifying the critical factors to fill the research gap.

Methods

The B2B-eM-CSF model was subjected to validation using the literature and empirical data collected from an online survey. Since this study covers a wide geographic area in Asia, an online survey was considered the most suitable technique for data collection. The greatest strength of online surveys is their potential for collecting a large amount of data in a relatively short amount of time. Furthermore, Cavana, Delahaye and Sekaran (2001) emphasise that online surveys are easy to design for data collection and analysis purposes in the quantitative research approach. An online survey provides a quick, efficient and accurate means of assessing information with expanded geographic coverage without a corresponding increase in cost. The data received from the recipients were used in principal component factor analysis conducted in SPSS to identify whether a factor structure underlay the correlations between some of the variables. A sequential data collection strategy was employed and the process is described below.

Phase I: generation of the success factors through the literature

Following other similar research (Cullen and Taylor 2009; Loh and Koh 2004), potential success factors were generated through a literature review. A computer-based search of the academic databases was carried out to find previous research related to the successful implementation of B2B e-marketing. The search used keywords related to 'success', 'B2B e-marketing', 'SMEs' and 'B2B e-marketplace'. The full list of potential CSFs derived from the literature is summarised in Table 1.

Phase II: pilot study

Prior to the dissemination of the questionnaire, interviews were piloted on a selected sample. The purpose of the pilot was to refine and establish the validity of the success factors drawn from the literature and the structure of the questionnaire.

The factors were verified by two academicians and piloted on 20 senior management members (decision makers) of SMEs that participated in the B2B e-marketplace. The data collected via interviews were examined to remove incomplete and ambiguous information. Jointly with the respondents, a thorough review was made of the interview records and post-interview communication, so as to ensure data accuracy. Based on the feedback from the respondents, small corrections were suggested to the flow and phrasing of the questions. The pilot study also confirmed the relevance and clarity of the proposed factors which would ensure that the findings were consistent and relevant.

Table 1. Literature summary on potential critical success factors and e-business performance.

| Success factors | Sources |
|--|--|
| Customer management services (CMS) | |
| CMS1 Improve communication with customers | Harrison-Walker and Neeley (2004), Kierzkowski et al. (1996), Saini, Grewal and Johnson (2010) |
| CMS2 Reduce marketing operational costs | Harrigan, Ramsey and Ibbotson (2011), Krasnikov, Jayachandran and Kumar (2009) |
| CMS3 Identify customers' characteristics and purchase behaviours | Avlonitis and Karayanni (2000), Ernst et al. (2011), Rauyruen and Miller (2007) |
| CMS4 Develop better marketing plans | Chang, Park and Chaïy (2010), Harrigan, Ramsey and Ibbotson (2011) |
| Supply chain facilities (SCF) | |
| SCF1 Sourcing | Cullen and Taylor (2009), Wong, Lai and Cheng (2011) |
| SCF2 Procurement | Albrecht, Dean and Hansen (2005), Angeles and Nath (2007), Prasad and Sounderpandian (2003), Premkumar (2003) |
| SCF3 Inventory | Chong, Shafaghi and Tan (2011), Green Jr., Whitten and Inman (2012) |
| SCF4 Delivery | Cullen and Taylor (2009), Green Jr., Whitten and Inman (2012), Prasad and Sounderpandian (2003) |
| New product development (NPD) | |
| NPD1 Research and development | Coviello and Joseph (2012), Ulaga and Reinartz (2011) |
| NPD2 Product quality | Beverland, Ewing and Matanda (2006), Molina-Castillo, Jimenez-Jimenez and Munuera-Aleman (2011) |
| NPD3 Product innovation | Beverland, Ewing and Matanda (2006), Coviello and Joseph (2012), Molina-Castillo, Jimenez-Jimenez and Munuera-Aleman (2011), Noordhoff et al. (2011) |
| NPD4 Product competition | Avlonitis and Karayanni (2000), Ernst et al. (2011), Ulaga and Reinartz (2011) |
| IS/IT infrastructure (ISIT) | |
| ISIT1 Personalisation | Eid, Trueman and Ahmed (2006) |
| ISIT2 Navigation and search tools | Bakos (1998), Geigenmüller, Ata and Toker (2012) |
| ISIT3 Ordering tools | Singh, Salam and Iyer (2005) |
| ISIT4 Internet advertising | Strauss and Frost (2001) |
| ISIT5 Search engine optimisation | Bakos (1998) |
| ISIT6 E-procurement | Mukhopadhyay and Kekre (2002) |
| ISIT7 E-mail marketing | Strauss and Frost (2001) |
| ISIT8 Electronic data interchange (EDI) | Mukhopadhyay and Kekre (2002), O'Callaghan, Kaufmann and Konsynski (1992) |
| Transparency and visibility of information (TVI) | |
| TVI1 Buyer/seller information | Bakos (1998), Ernst et al. (2011), Lancaster and Lages (2006) |
| TVI2 Product information | Bockstedt and Goh (2011), Lancaster and Lages (2006), Zhu (2004) |
| TVI3 Competition information | Bockstedt and Goh (2011), Singh, Salam and Iyer (2005), Zhu (2004) |
| TVI4 Legal information | Singh, Salam and Iyer (2005) |
| Government encouragement (GE) | |
| GE1 The government is actively promoting the B2B e-marketplace | Eid, Trueman and Ahmed (2006), Morgeson and Mithas (2009) |
| GE2 Using the e-marketplace it is easier to get government grants | Teo and Tan (2002), Wang and Lin (2009) |
| GE3 The government encourages SMEs to participate in the B2B e-marketplace | Prasad and Sounderpandian (2003), Wang and Lin (2009) |
| GE4 The government regulates the online trading environment (e.g. protects trading privacy) | Teo and Tan (2002), Wang and Lin (2009) |
| Senior management involvement (SMI) | |
| SMI1 Senior management's knowledge/experience in the B2B e-marketplace is significant | Chong, Shafaghi and Tan (2011), Saini, Grewal and Johnson (2010), Teo and Tan (2002) |
| SMI2 Senior management highly recognises that the B2B e-marketplace can enhance the firm's competitiveness | Eid, Trueman and Ahmed (2006), Gunasekaran and Ngai (2008), Teo and Tan (2002) |
| SMI3 Senior management allocates the required resources to the B2B e-marketplace every year | Eid, Trueman and Ahmed (2006), Teo and Tan (2002), Wang and Lin (2009) |
| SMI4 Senior management explores the B2B e-marketplace regularly with the staff | Chong, Shafaghi and Tan (2011), Gunasekaran and Ngai (2008) |

(Continued)

Table 1. (Continued).

| Success factors | | Sources |
|----------------------------|----------------------------|---|
| E-business performance (P) | | |
| P1 | Customer satisfaction | Ernst et al. (2011), Naumann et al. (2010), Zallocco, Pullins and Mallin (2009) |
| P2 | Operational cost reduction | Gunasekaran et al. (2009), Kwon, Yang and Rowley (2009) |
| P3 | Relationship development | Kwon, Yang and Rowley (2009) |
| P4 | Increased sales volume | Ernst et al. (2011), Zallocco, Pullins and Mallin (2009) |

Phase III: empirical study

This study focuses on the SMEs operating in the Asian economies of China, Malaysia, the Philippines, Singapore, Thailand and India. The rationale for choosing the sample for this study was based on their well-established and informative SMEs databases. The quantitative research (online survey) was targeted at business owners, senior management members and senior sales/marketing managers of selected SMEs that participated in the B2B e-marketplace. The sampling frame consisted of 1,066 randomly selected SMEs that were active members of the B2B e-marketplaces (based on their transaction volumes). All the SMEs were contacted by an email covering letter to which the questionnaire was attached. A total of 423 surveys were collected, of which 406 were valid (17 were considered invalid due to the incomplete nature of the responses), providing a response rate of 38.1% (see Table 2 for descriptive data on the respondents). The respondents were instructed to indicate how strongly they agreed or disagreed with a number of statements using a five-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree and 5 = strongly disagree).

Validity and reliability

We used principal component factor analysis to test the discriminant validity and reliability of the data. We ran Eigenvalue, Bartlett's Test of Sphericity (BTS) and the Kaiser-Meyer-Olkin (KMO) to

Table 2. Demographic profiles of respondents.

| | | Frequency | Percentage (%) |
|---------------------|-----------------------------------|-----------|----------------|
| Number of employees | Below 5 | 8 | 2.0 |
| | 5–20 | 54 | 13.3 |
| | 21–50 | 119 | 29.3 |
| | 51–100 | 137 | 33.7 |
| | 101–150 | 55 | 13.5 |
| | 151–200 | 20 | 4.9 |
| | 201–250 | 13 | 3.3 |
| | Group total (N) | 406 | 100.0 |
| Position | Proprietor | 26 | 6.4 |
| | Chief executive officer | 29 | 7.1 |
| | Managing director/general manager | 119 | 29.3 |
| | Sales/marketing manager | 162 | 39.9 |
| | Export manager | 70 | 17.3 |
| | Group total (N) | 406 | 100.0 |
| Industry | Manufacturing | 160 | 39.4 |
| | Building | 51 | 12.5 |
| | Wholesale | 143 | 35.2 |
| | Retail | 27 | 6.7 |
| | Lodging and catering | 25 | 6.2 |
| | Group total (N) | 406 | 100.0 |
| | Country of origin | China | 66 |
| Malaysia | | 84 | 20.7 |
| The Philippines | | 44 | 10.8 |
| Singapore | | 21 | 5.2 |
| Thailand | | 49 | 12.1 |
| India | | 142 | 35.0 |
| Group total (N) | | 406 | 100.0 |

Table 3. Extraction of factors.

| Variables | Factor loading | Eigen value | KMO | Bartlett's test | | Percentage of variance |
|--|----------------|-------------|------|--------------------|------|------------------------|
| | | | | Approx. chi-square | Sig | |
| Customer management services (CMS) | | | | | | |
| CMS1 | .557 | 1.851 | .652 | 184.002 | .000 | 46.271 |
| CMS2 | .612 | | | | | |
| CMS3 | .756 | | | | | |
| CMS4 | .771 | | | | | |
| Supply chain facilities (SCF) | | | | | | |
| SCF1 | .758 | 2.277 | .678 | 416.542 | .000 | 56.918 |
| SCF2 | .831 | | | | | |
| SCF3 | .718 | | | | | |
| SCF4 | .705 | | | | | |
| New product development (NPD) | | | | | | |
| NPD1 | .753 | 2.586 | .703 | 651.275 | .000 | 64.647 |
| NPD2 | .819 | | | | | |
| NPD3 | .839 | | | | | |
| NPD4 | .803 | | | | | |
| IS/IT infrastructure (ISIT) | | | | | | |
| ISIT1 | .928 | 2.840 | .685 | 239.058 | .000 | 45.505 |
| ISIT2 | .528 | | | | | |
| ISIT3 | .648 | | | | | |
| ISIT4 | .929 | | | | | |
| ISIT5 | .930 | | | | | |
| ISIT6 | .851 | | | | | |
| ISIT7 | .843 | | | | | |
| ISIT8 | .668 | | | | | |
| Transparency and visibility of information (TVI) | | | | | | |
| TVI1 | .868 | 2.833 | .773 | 818.700 | .000 | 70.815 |
| TVI2 | .882 | | | | | |
| TVI3 | .836 | | | | | |
| TVI4 | .776 | | | | | |
| Government encouragement (GE) | | | | | | |
| GE1 | .863 | 3.095 | .788 | 1094.183 | .000 | 77.380 |
| GE2 | .889 | | | | | |
| GE3 | .897 | | | | | |
| GE4 | .869 | | | | | |
| Senior management involvement (SMI) | | | | | | |
| SMI1 | .795 | 2.679 | .732 | 670.145 | .000 | 66.966 |
| SMI2 | .842 | | | | | |
| SMI3 | .839 | | | | | |
| SMI4 | .796 | | | | | |

ensure the validity and significance of the variables. The summary of the results is the following (the measurements were adapted from Brace, Kemp and Snelgar 2006 and Dancey and Reidy 2007) (Table 3):

- BTS results are significant at $p = .000$, which means the variables are ready for factor analysis;
- KMO results between .652 and .788, indicating the variables are from an appropriate sample and
- Eigen values are greater than 1 (45.505% and 77.380% of the total variance) and factor loadings are higher than 50%, which means the variables are statistically significant.

The reliability and consistency of the data were then scrutinised using Cronbach's alpha, which is the standard reliability measurement for quantitative data collection. The reliability of the data is high if the Cronbach's alpha value is more than .7 (Nunnally 1978). Referring to Table 4, all of the Cronbach's alpha values are more than .7, implying the existence of internal consistency or homogeneity among the variables. Potential non-response bias was assessed, we found no

Table 4. Means, standard deviations and Cronbach's alpha values of the variables.

| Variable | Mean | Standard deviation | Cronbach's alpha |
|--|--------|--------------------|------------------|
| Customer management services (CMS) | | | .711 |
| CMS1 | 4.3276 | .51504 | |
| CMS2 | 4.0616 | .54311 | |
| CMS3 | 3.9360 | .59698 | |
| CMS4 | 3.8251 | .60161 | |
| Supply chain facilities (SCF) | | | .732 |
| SCF1 | 4.0640 | .56292 | |
| SCF2 | 3.9433 | .54364 | |
| SCF3 | 4.2291 | .75637 | |
| SCF4 | 3.6281 | .70770 | |
| New product development (NPD) | | | .810 |
| NPD1 | 4.0099 | .53509 | |
| NPD2 | 3.9113 | .55956 | |
| NPD3 | 3.7685 | .70665 | |
| NPD4 | 3.6773 | .78995 | |
| IS/IT infrastructure (IS/IT) | | | .710 |
| ISIT1 | 4.3251 | .52841 | |
| ISIT2 | 4.1256 | .58498 | |
| ISIT3 | 3.6897 | .80874 | |
| ISIT4 | 3.0887 | .82971 | |
| ISIT5 | 3.0665 | .83917 | |
| ISIT6 | 4.3473 | .54440 | |
| ISIT7 | 4.3695 | .53190 | |
| ISIT8 | 3.0714 | .79958 | |
| Transparency and visibility of information (TVI) | | | .860 |
| TVI1 | 3.7241 | .60268 | |
| TVI2 | 3.6182 | .60005 | |
| TVI3 | 3.6453 | .64583 | |
| TVI4 | 3.4187 | .64179 | |
| Government encouragement (GE) | | | .902 |
| GE1 | 3.4187 | .72490 | |
| GE2 | 3.2980 | .78715 | |
| GE3 | 3.0788 | .79424 | |
| GE4 | 2.9704 | .81293 | |
| Senior management involvement (SMI) | | | .831 |
| SMI1 | 3.6281 | .64567 | |
| SMI2 | 3.5665 | .60798 | |
| SMI3 | 3.5074 | .68759 | |
| SMI4 | 3.3325 | .76998 | |
| E-business performance (P) | | | .701 |
| P1 | 4.1576 | .77286 | |
| P2 | 3.5468 | .74139 | |
| P3 | 4.1207 | .58179 | |
| P4 | 3.8300 | .58642 | |

significant differences in the mean scores between the early and late respondents (Armstrong and Overton 1977; Weber and Kantamneni 2002).

Results

Referring to Table 5, the results show that CMS ($\beta = .244$), SCF ($\beta = .269$), NPD ($\beta = .731$), IS/IT ($\beta = .326$), TVI ($\beta = .268$), GE ($\beta = .190$) and SMI ($\beta = .190$) are all positive, which answers RQ1 of this study. These figures are reflecting with the previous work of several academics and practitioners (e.g. Saini, Grewal, and Johnson 2010; Gunasekaran and Ngai 2008), who claim that these variables have a large influence over the development of B2B-eM-CSFs. Our results show full support for the claim that these dimensions of B2B-eM-CSFs are derived from the B2B e-marketplace. The findings in Table 5 also answer RQ2, as they show that the B2B-eM-CSFs influence e-business performance positively and significantly ($\beta = .768$).

Table 5. Analysis results.

| | Beta (β) | t-value | Sig. | E-business performance |
|---|------------------|---------|------|------------------------|
| CMS | .244 | 5.047 | .000 | |
| SCF | .269 | 5.620 | .000 | |
| NPD | .731 | 6.602 | .000 | |
| ISIT | .326 | 6.936 | .000 | |
| TVI | .268 | 5.584 | .000 | |
| GE | .190 | 3.881 | .000 | |
| SMI | .160 | 3.253 | .000 | |
| B2B-eM-CSFs | | | | $\beta = .768$ |
| F | 67.163 | | | 80.765 |
| R-squared | .542 | | | .508 |
| N = 406. Dependent variable: e-business performance (P) | | | | |

Discussion and implications

We use online surveys and literature analysis to address the key research questions for this study. Based on a literature review, we propose a conceptual framework on the relationship between B2B-eM-CSFs and e-marketing performance. We empirically tested 406 SMEs from various industries to evaluate whether the proposed key success factors are significantly related to e-marketing performance. Based on our findings, customer management services, supply chain facilities, new product development, IS/IT infrastructure, transparency and visibility of information, government encouragement and senior management involvement suggested by various academics and practitioners are crucial for e-marketing orientation on business performance. This study contributes an empirically understanding of the e-marketing communications approach in the B2B settings.

Previous research indicates that SMEs are still hesitating whether or not they should adopt to electronic-based business environment. It is crucial that SMEs identify CSFs in the e-business implementation process. We believe our study can help SMEs to develop a systematic approach to adopt each factor based on the findings and interpretation of this study. In addition, the B2B-eM-CSFs can serve as an important milestone for the development of an e-marketing framework. The findings provide a guideline for the practitioners and highlight the significant role each factor plays in the development and maintenance of effective e-marketing practices for SMEs. Practitioners can have a better understanding and measurement of marketing strategies that appropriately apply to their marketing plan. Meanwhile, B2B-eM-CSFs can be embedded into firms so that they can measure their level of marketing performance in the B2B environment. Drawing from the findings, we have provided new theoretical grounds into e-marketing research that can deliver high marketing value for SMEs. In addition, this study contributes an empirical assessment of the essential elements of B2B e-marketplace adoption and implications regarding which CSFs should be prioritised. Based on the need for the literature to produce a dynamic framework for e-business transformation, this study is significant for small business owners, e-marketers, technology-based practitioners and other users that use the Internet technology for marketing purposes.

We also found that the B2B e-marketplace is suitable to SMEs operating in low-technology environments. The examination and demonstration of B2B-eM-CSFs derived from the B2B e-marketplace can enhance their marketing performance in the B2B settings. SMEs could better perform by adopting B2B e-marketplace, by integrating e-marketing services to improve B2B coordination. Based on this paper, we found that the findings could provide a systematic guideline for supply chain practitioners to identify the business value of the B2B e-marketplace to make better marketing decisions. Hence, in terms of managerial contributions, it is important to develop a coordination mechanism between SMEs and the B2B e-marketplace.

Despite governmental intervention, B2B e-business model has become an integral part of the digital business environment. Based on our findings, there is widespread recognition of the

significance and the need for B2B e-marketplace to enhance firm's business performance. We strongly believe that a country's readiness for e-business generally relies on the B2B-eM-CSFs for creating an effective digital trading eco-system. Based on the findings, the B2B-eM-CSFs derived from B2B e-marketplace is crucial for SMEs to compete in the digital environment. The analysis performed in this paper shows that integration with the B2B e-marketplace and B2B-eM-CSFs is academic and managerial important that will certainly lead to a positive and significant influence to SME's business efficiency and performance. The results also indicated that B2B-eM-CSFs is fundamentally important to the refinement of SME's e-marketing practices in order to obtain competitive advantages in the digital business environment.

Limitations and avenues for future research

The main limitation of this study may be the sample size. Also, although the literature findings were international, the empirical study was restricted to China, Malaysia, the Philippines, Singapore, Thailand and India. The application of the findings to wider geographical areas may require further consideration of the environment in which B2B e-marketplaces are located. The representativeness and generalisability of the research only applies to SMEs from the above countries. The applicability of findings to others countries and to large-scale organisations may be limited. To further understand the e-marketing theories and practices derived from the B2B e-marketplace, future work may be done at both pedagogical and practical level. This study provides many opportunities for future research including:

- Additional empirical studies can be conducted on other countries to compare the study in cross-cultural differences. Such replication will help academic and practitioners to understand which geographical influences play a specific role to the study.
- This study has identified seven CSFs. Future work could be done by exploring more dimensions. It may deepen the understanding of B2B e-marketplace participants.
- A valuable extension of this study would be to choose a sample of SMEs and spend a period of time as a participant observer within the firm as part of an ethnographic study examining their B2B e-marketing operation.

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