E-Commerce Adoption: A Tool for Small and Medium-Scale Enterprises (SMEs) Empowerment through Internationalization

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ABSTRACT

In this era of globalization, economies all over the world have become increasingly international and competitive. This study examines the extent to which E-Commerce can be as a tool for Small and Medium-Scale Enterprises (SMEs) empowerment through internationalization. Secondary data was drawn from financial and operational records of smaller businesses operating on the Chinese web market “Taobao” over a five year interval. These were augmented with additional information from e-market stakeholders and were analyzed using the Statistica 7 program. We note that irrespective of their small sizes, E-Commerce can empower SMEs to compete favourably in the global business platform with limited risk. We further established that E-Commerce can boost SMEs profitability as the year on year profitability ratios on ROA increased by an average of 10% in the post-e-commerce adoption era. We further observed several barriers that limit SMEs progress to effectively employ e-commerce in their businesses but such challenges can be overcome through government and private sector intervening mechanisms.

Keywords: Small and Medium-Scale Enterprises, E-commerce, Internationalization

INTRODUCTION

In an era of globalization, economies over the world have become increasingly international and competitive. This research therefore aims to establish E-Commerce as a tool for Small and Medium-Scale Enterprises (SMEs) empowerment through internationalization. SMEs are job creation engines in countries worldwide, for example they account for 80% of China’s jobs, Chinese National Bureau of Statistics (2015), 67% of net new private sector jobs in the US (Bean, 2015). It is important for businesses moving to the e-commerce platform to evaluate all the various aspects of their organization and performance. It is important for businesses to identify factors which will determine successful revolution, and then direct strategy and resources towards those strategies. E-commerce platform appears along with the development of internet and the necessities of ventures give a web based exchanging spot to customers. It is a virtual system for purchasers and merchants, utilizing computer programming technology to coordinate assets on the web and accomplish the objective of community program (Ruzzier, Antoncici, Hisrich, & Konecnik, 2007). E-commerce platform gives all members equivalent and public information location of many services. Merchants can disseminate product information on e-commerce platforms, while purchasers can get a wide range of information without going outside (Strauss, 2016).
As a new trend in the economic development and a new pattern of future business advancement, e-commerce platform plays a critical part with many attributes i.e. third party, service nature, neutrality and integration. In today’s competitive market place, SMEs are crucial to the economies of all nations, including developing ones. SMEs cannot be neglected and most of them are already presenting their entrepreneurial attributes by eagerly availing themselves to the chances offered by e-commerce (Nejadirani, Behravesh, & Rasouli, 2011).\_ENREF_2\_ENREF_2 Awa, Ojiabo, and Emecheta (2015) discovered favourable signs that SMEs can exploit the e-commerce platform, as a source of information, communication and technology in helping their businesses to expand. Therefore, small business internationalization is a vital component of financial advancement and firm development, Glavas and Mathews (2014) as well as a nation’s prosperity and universal reputation (Ruzzier & Ruzzier, 2015). Internationalization is a fundamental vital decision for small firm development (Ruzzier & Ruzzier, 2015). Research studies by Ghogakhloo, Arias-Aranda, and Benitez-Amado (2011) have also identified factors influencing web based offering and the adoption of e-commerce by SMEs. Only few of these research studies have revealed the role of e-commerce to empower SMEs to grow their businesses internationally. SMEs are the most keen promoters and specialists of B2B e-businesses. Therefore, most part of Chinese B2B e-business platforms are: Alibaba, Global Sources, HC360, and Focus Tech. This study focuses on SMEs that employ E-commerce in transacting business. A case study approach has been used in this article. Taobao, an internet-based marketing firm with its head office in China was the E-commerce platform studied.

## RELATED LITERATURE

### Mechanism design theory

Mechanism design theory started from the exchange of social objectives and mechanism design by Hurwitz in 1960 and 1972. By keeping in mind the economic perspective, major goals of this theory was to meet the objectives of a few conditions, for example, flexibility in selection, voluntary exchange and decision making diversity. This theory underlines the importance of seeing ecommerce systematic in nature and impacting on an adopting company in many areas to create value. This framework also represents the proficient distribution of resources. Generally, implementation of successful utilization of information requires the cost of the system to be minimized as low as possible (Xie, Yi, & Zhang, 2013). Effective Information and incentive compatibility are the two most vital calculates in planning a mechanism. It empowers merchants who offer superior quality products and services to promote and enhance their services and products and also crack down vendors who offer sub-standard or fake products. E-commerce platform plays a major role in providing quality information intermediaries; where traders can meet the conditions incentive compatibility. Therefore, in present research, e-commerce activities and SMEs internationalization is focused on the study of connections between e-commerce, organizational performance and the innovative way of transacting business for SMEs internationalization.

### Reputation Theory

Reputation is a significant resource, and this resource ought to be very much administered so as to perform its greatest part (Fossey, Harvey, McDermott, & Davidson, 2002; O’reilly, 2005). Reputation is the delicate force of big business, the venture’s brand card in business sectors and a very important element for enterprises to draw customer’s attention (Xie et al., 2013). Customers can predict the estimation of the products regarding the reputation of the stores in e-trade platforms. Speculators as well, will keep their reservations in the reputation of the platform itself and its clients (Turban, King, Lee, Liang, & Turban, 2015). E-commerce platform owners sometimes design reputation assessment frameworks to stimulate traders to improve their items or services (Turban et al., 2015). This sort of reputation assessment could be a sort of restriction to the entrepreneurs. Considering the brand and the image of online shop owners; the platform clients as well, will take much care of offering quality goods rather than fake items. Keeping in mind the penalties, sellers will have to maintain the quality of their offerings, avoid fake product selling while online shop owners also need to ensure the platform’s reputation for being admirable (Gabay, 2015). In literature, reputation theory has been used as a key basis to study e-commerce activities like customer care and organizational performance which makes it the key theoretical underpinning for the present study.

### System Trust

System trust is one of the most important matters of concern for the internet using customers which is related to trust. According to Kim, Tao, Shin, and Kim (2010) trust mechanisms can be recognized as ways of promising system trust in e-Commerce. The main three types of trust mechanisms are certifications, rating and guarantees (Chang, Cheung,
It benefits platform owners to create a better trust mechanism and avoid sellers selling counterfeit products through e-commerce platforms. Once the trust is built and secured, the entire community could perform well. Conversely, if the trust is challenged or threatened, the community could also suffer huge adverse effects. As e-commerce is an online platform, it needs buyers’ trust, the manufacturers’ and stakeholders’ and other aspects to preserve its operations. The platform serves not only for supplying commodities, but also for enhancing and showing trust with all community members. A well-designed mechanism could augment system trust which shows competence, integrity and reliability (Karake-Shalhoub, 2002). Apart from other studies, the roots of e-commerce activities and organizational performance are firmly embedded in system trust theory (Bachmann & Inkpen, 2011). The present study focuses on building effective system trust and customer oriented e-commerce activities that will ensure that SMEs can expand their businesses worldwide. Considering the definition of trust, that is, the expectation that all other parties in the community will behave in accordance with commitments, negotiate honestly, and not take advantage, even when opportunity arises (Shahibi & Fakeh, 2011).

The current research study investigates one of the most significant business to customer, business to business and customer to customer sales and services through the web portals. The founders of the company are Jack Ma and Penh Lei. Ma and 17 of his friends launched Alibaba in 1999. Soon, the service caught the attention from firms all over the world. Alibaba.com has now become one of the world’s top international online market and more successful by adopting same business strategies as eBay and Amazon in China.

Electronic commerce, including the use of information and communication technology (ICT) is a way that improves SME’s relationships with customers or suppliers. This includes cutely transacting business for electronically orders, invoices, shipment documents as well as using information and communication technology for marketing, market research, customer service, finding potential customers and suppliers, offering entirely new products and services and more. These changes may mean more international business (Nejadirani et al., 2011). Past studies have shown that at present, customers are more likely to continue shopping online when they have a greater experience of online shopping. Numerous researchers have argued and empirically observed that. The use and application of Internet based technologies in commerce, government and education has been undergoing extraordinary growth, with the World Wide Web significantly altering the manner that traditional commerce is undertaken (Taylor & Owusu, 2012). Bachmann and Inkpen (2011) demonstrated that due to time shortage, security concerns, payment systems and high expenses of investment and execution, most SMEs fail to adopt e-commerce. Previous research studies by Lander, Purvis, McCray, and Leigh (2004) have provided insights into the mechanisms of consumer trust building as well as reputation building which drive the online merchants’ growth dynamics in the online market. Schulz, Borghoff, and Kraus (2009) have demonstrated that when SME entrepreneurs face upcoming uncertainties and unpredictable market demands, SME’s may switch from their well-known export strategies and focus on new strategies of internationalization. But switching to new strategies is accompanied by vital risks on the grounds that SMEs frequently need other resources such as monetary, human resource and the administrative resources to understand and implement the worldwide practices. Limited capacities restrict these companies to internationalize. However, few studies have attempted to address the performance implications of internationalization even though this is of central concern to entrepreneurs (O’Cass & Weerawardena, 2009; Sapienza, Autio, George, & Zahra, 2006). This is basically due to the difficulties in obtaining detailed information on SMEs’ foreign investments and firm performance.

Past studies have also focused on the empirical research on online auction that has been a practice in western nations and on issues linked with few popular consumer to consumer online auctioneers like eBay. Limited studies have also revealed how SMEs can enhance their performance and be empowered through e-commerce activities to compete in international markets. There exists a need to focus on organizational performance, conduct and customer attitudes in online sales and relate them to actual economic situations, principles and impact of e-commerce in developing nations (Jennex, Amoroso, & Adelakun, 2004). Lu and Beamish (2001) emphasized on the importance for SMEs to gain value creation as it is ultimately related to such entrepreneurial strategies which lead to higher performance and how SMEs can get competitive advantage by expanding their businesses internationally.

MATERIALS AND METHODS
Understanding the link between e-commerce and SME performance is an empirical issue. A commonly used measure of business performance is the level of profits. Profitability can be measured by the return on a firm’s assets (ROA), a ratio of a firm’s profit to its total assets. The income statements of commercial firms report profits before and after taxes. In a crosssectional study it is more reliable to use the before-tax figures as opposed to after-tax figures since tax rates may differ across firms based on non-performance related factors such as ownership structure.

Another good measure on firm performance is the ratio of pre-tax profits to equity (ROE) rather than total assets since firms with higher equity ratio should also have a higher return on assets. Thus, overall we measured financial performance of the selected SMEs using two profitability ratios – Return on Asset (ROA) and Return on Equity (ROE) from the period of 2006-2010 as the period of pre-commerce and 2011-2015 as a period of post e-commerce era. We follow an empirical model based on previous works by Berger (1995), Demirguc-Kunt and Huizinga (1999) and by Quispe-Agnoli and Whisler (2006) where we define firm performance, $Y_i$, (measured by ratio of firm’s pre-tax profits to total assets (ROA) or to its equity (ROE)) as follows:

$$Y_{it} = \alpha_i + \beta_{MACRO}X_{it} + \gamma_{smeCRI} + \delta_{INTERNET}\tau_i + \varepsilon_{it}$$

is a firm fixed effect term that captures time-invariant influences specific to firm $i$, $MACRO_i$ is a matrix of macroeconomic variables in China in year $t$ that include percentage change in real GDP per capita and average lending rate paid by firms in year $t$. $X_{it}$ is a matrix of firm-specific control variables: number of employees, age of SME, in firm $i$ as a ratio of total assets in year $t$, total loans of firm $i$ as a ratio of total assets in year $t$. $GOVT_i$ is a dummy variable of the government SME reform policy which is an active factor in SME development in China. It takes on the value of 1 if there is a systemic policy to support SME development including e-commerce adoption. We employ this variable to control for changes in firms’ performance as a result of external stimulating factor other than firm’s e-commerce initiative. Following the work of Hernando and Nieto (2007) we employ a matrix of dummy variables, $INTERNET_i$, that are defined based on the adoption of a transactional website (Taobao) by the firm.

Thus, $TAOBAO_i^1$ is a dummy variable that equals 1 before the firm adopted or enrolled on the transactional web site (Taobao) and $TAOBAO_i^2$ after the firm enrolled on the transactional website Taobao. On the other hand, or $P. WEBSITE_i^1$ before it adopted a personal website which is equal to 1 and or $P. WEBSITE_i^2$ after the firm adopted a personal website sales. We go back as late as $t-2$ to capture changes in firm performance over time. $\varepsilon_{it}$ is a mean zero, constant variance disturbance term.

To analyse the effects of e-commerce on SME performance, we collected panel data from 30 randomly selected SMEs operating on the Taobao platform in China that have adopted ecommerce sometime between 2006 and 2016. Our dataset is drawn from income statements and balance sheets collected personnel from firms intended for tax assessment purposes or to solicit funding from state venture capital fund managers. Specifically information from the Centre for SME Studies of the School of Management of the Jiangsu University proved useful in validating the collected data. The data covered a period of ten years (2006-2016) and is unbalanced due to the unavailability of certain data for some of the SMEs in our sample. The data on the timing of the adoption of ecommerce was obtained through an online questionnaire sent to the respondents. For macroeconomic data, we consulted IMF’s IFS database (in obtaining data on the average borrowing rate) and Conference Board’s Total Economy Database (for the GDP per capita values).

In our analysis, we first examined the descriptive statistics of the analysed variables. We further grouped the samples into two periods; pre E-commerce from 2006 to 2010 and post e-commerce period, from 2011 to 2016 using dummy variables to represent the two blocks. The normality of data distribution was tested using the Lilliefors test based on Kolmogorov-Smirnov and Shapiro-Wilk test. The ROA indicators were not normally distributed; a case that supports the use of non-parametric tests (Mann-Whitney U test) to establish the difference between comparing groups.

The Mann-Whitney U test is a nonparametric test of the null hypothesis that, two populations are the same against an alternative hypothesis that a particular population is featured by different values than the other; a Z test was then conducted to establish the appropriate statistical significance level.

In order to draw a valid conclusion whether the introduction of E-commerce enhances SME performance, we benchmarked the post E-commerce financial performance of the case study against the pre E-commerce performance.
RESULTS

Figure 1 shows the trend analysis of the return on equity (ROE), return on asset (ROA) and earnings per share (EPS). It turned out that SMEs operated more profitably after the deployment of E-commerce compared to pre E-commerce era. The mean ROA after the deployment of E-commerce ranges from 13.88% to 20.64% whilst that of the pre-e-commerce period ranges from 4.24% to 6.81% over the respective five year periods. The values are provided in figure 1.

Similarly, the ROE is also represented in figure 1. It shows that the mean ROE after the deployment of E-commerce ranges from 9.19% to 29.1% whilst that of the pre-e-commerce period ranges from 6.39% to 23.10% over the respective five year periods. A comparison of the descriptive statistics also portrays a similar trend as with ROA and ROE, that is, an improved performance after the deployment of E-commerce. ROS after the deployment of E-commerce ranges from 8.10% to 22.43% whilst that of the pre-e-commerce period ranges from 2.36% to 15.68% over the respective five year periods. The figure also provides information on EPS from 2011 to 2015 representing the period which E-commerce was employed and information on EPS from 2006 to 2010 representing pre E-commerce period respectively. Here, a similar trend is also portrayed, that is, better performance in the post E-commerce era. EPS after the deployment of E-commerce ranges from 1.65% to 2.78% whilst that of the pre-e-commerce period ranges from 0.24% to 0.72% over the respective five year periods. To find out which variables are normally distributed the Lilliefors test (based on Kolmogorov-Smirnov and Shapiro-Wilk test) was applied. Following the trend analysis, we then test whether these differences are significant; first by testing for normality and then testing for significance.

Table 1 reveals that there were greater financial efficiency, as measured by ROA, ROE and EPS in employing e-commerce as profitability differs significantly between the years before E-commerce and the years after the deployment of E-commerce. For example, there is statistically significant difference between the pre-e-commerce ROA, ROE and EPS and the post e-commerce ROA, ROE and EPS. Our study also found that there is greater operational efficiency, as measured by ROS, in employing e-commerce as profitability differs significantly between the years before e-commerce and the years after the deployment of E-commerce. These results show that SMEs that employ E-commerce become more empowered. This gives them the urge to pursue international business.

CONCLUSIONS AND IMPLICATIONS

In this era of globalization, economies all over the world have become increasingly international and competitive. This research therefore aims to establish E-Commerce as a tool for Small and Medium-Scale Enterprises (SMEs) empowerment through internationalization. On the basis of the findings in this study, we conclude that E-commerce is a tool for SME internationalization. It promotes financial and operational efficiency. We recommend public private partnership to help aid SMEs in employing E-commerce so that they can better execute their job creation function and support innovation. There are, however, several barriers that limit SMEs progress to effectively employ E-commerce in their businesses but such challenges can be overcome with government and the private sector interventions. The study is limited by the fact that it only focused on SMEs operating on the Taobao platform and did not include other SME businesses outside this platform. We therefore suggest that any future
research in this area should include firms outside this platform and are using E-commerce in their business operations for generalization purposes. We are also of the opinion that the sample size could have been more looking at the importance of E-commerce to the successful operations of SMEs in their internationalization pursuit, it is our belief that a larger sample size could have helped in arriving at a more reliable conclusion. Finally, our study again only focused on a single E-commerce platform (Taobao) and did not take into consideration other E-commerce platforms such as e-Bay and amazon in China. We are therefore of the opinion that future research on SME and the use of the E-commerce platform for internationalization should include several other E-commerce platforms to provide a balanced view of the phenomenon.

References


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