

Can Partial Offshoring Contribute Growth of Multinational Electronic Manufacturing Service Companies in the United States?

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With the increasing trend of offshoring, leaders of many companies prefer to offshore projects to reduce product cost and be competitive in the global market. This phenomenon creates fewer jobs in the United States as compared to low-cost foreign countries such as China. To address this problem, this quantitative correlational study reviewed the extent to which partial offshoring impacted the business growth of multinational electronic manufacturing service (EMS) companies in the United States. Results showed that partial offshoring does not have a significant relationship with business growth. Although statistically not significant, partial offshoring was found to be positively related to the business growth.

Based on organizational strategic goals, leaders of multinational EMS companies may direct future offshoring strategies to grow a business in the United States.

Keywords: *business growth, electronic manufacturing service, manufacturing, outsourcing, partial offshoring*

Introduction

Offshore outsourcing creates job growth by supporting staff for managerial positions in global operations; however, the ratio of this type of job growth is small compared to the job loss because of offshore outsourcing (Tambe, 2008). Leaders of firms use outsourcing strategies to obtain a competitive advantage and agility in the global competitive market (Gunta, 2007; Lockamy & McCormack, 2010). Because firms cannot experience business growth if not competitive in the global market, offshore outsourcing is a necessity for business leaders to compete in global markets (Conklin, 2007; Javalgi, Dixit, & Scherer, 2008). As offshore outsourcing is a complex process requiring many skills and resources to manage global operations, so leaders of small and medium enterprises (SMEs) with limited resources face unspecified challenges when running global operations (MacPherson, 2008). Officials of multinational electronic manufacturing service (EMS) companies operating in the United States might help SME leaders boost business until they are able to offshore products overseas (Hong & Roh, 2009; Thomas, 2007). Business growth in the United States for SMEs would be in terms of a number of projects that cannot be offshored by leaders of multinational EMS companies.

The contents of this article are excerpt of a doctoral study; therefore, for further details, refer to the doctoral study: Naru, H. (2013). *Offshoring and Growth of Multinational Electronic Manufacturing Service Companies in the U.S.A. (Doctoral study)*. Available from ProQuest Dissertations and Theses database. (ID No. 13250).

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The purpose of this study was to determine the degree of influence of partial offshoring on the business growth of multinational EMS companies operating in the United States. A quantitative, correlational design was used to determine the degree of relationship of partial offshoring with business growth of multinational EMS companies operating in the United States. Data were collected from managers, middle-level managers, and senior managers of multinational EMS companies, which have manufacturing operations in more than one country including the United States using a survey instrument. This research determined to what extent, if any, is there a relationship between partial offshoring and business growth for multinational EMS companies operating in the United States.

Partial offshoring was an extension of partial outsourcing equilibrium model theory (Hubler, 2008) and outsourcing relationship governance (Chaudhary & Kishore, 2010). The business growth was derived from measuring business growth theory (Anyadike-Danes, Bonner, Hart, & Mason, 2009). Business growth of multinational EMS companies operating in the United States was measured in terms of increase in revenue, employment (Anyadike-Danes et al., 2009), and number of projects.

A Review of the Professional and Academic Literature

Offshoring Trend

Offshoring began in the 1960s, when manufacturing companies traditionally outsourced to access low-cost labor, skills, and foreign markets (Stringfellow, Teagarden, & Nie, 2008). Stringfellow and colleagues noted that in the late 1990s, offshoring started in the service sector as well. Offshoring in high value professions occurred in areas such as financial services, accounting services, and medical field beginning in the first decade of the 21st century (Stringfellow et al., 2008).

Offshoring does not require a third party, and leaders of firms can relocate activities to foreign locations under the same direct control (Jagersma & van Gorp, 2007). The offshoring process has four parts: (1) creating offshoring policy, (2) mapping the offshoring profile, (3) managing the offshoring profile, and (4) measuring the results of the offshoring process (Jagersma & van Gorp, 2007).

Outsourcing and External Expertise

MacPherson and Vanchan (2009) noted that officials of large manufacturing firms spend a significant amount of money on in-house design. Leaders of many companies look for expertise outside the organization whenever 100% in-house competency is not required (MacPherson & Vanchan, 2009). According to MacPherson and Vanchan (2009), the outsourcing might continue to increase in research and design wherever firm members need external specialists. Outsourcing provides leaders of corporations with new market opportunities.

Outsourcing and Labor Costs

The leaders of corporations take advantage of lower labor costs in developing countries (Conklin, 2007). Offshoring started in the 1970s with the manufacturing industry. The drivers behind offshoring are (a) costs, including operating costs, capital investments, conversion of fixed cost to variable cost, downsizing, development, and competitiveness; (b) competitiveness as measured by the core business, technology access, and additional capacity; and (c) revenue, including speed to market, quality, revenue, and new market (Arisoy, 2007).

Offshoring and Risks

Firm leaders must understand the benefits and risks of offshoring before initiating the offshoring process (Jagersma & van Gorp, 2007). Jadersma and van Gorp noted that offshoring helps

organizational leaders earn higher profits because firms perform the work in places with lower operating costs and qualified employees. In addition, work can continue around the clock in global environments because of different time zones. Offshoring and outsourcing are different. Outsourcing always requires a third party, usually a local in the same country (Jagersma & van Gorp, 2007).

Outsourcing and Competitiveness

When a company is not competitive, it becomes difficult to preserve jobs (Conklin, 2007), and Javalgi and colleagues (2008) also noted that outsourcing is almost a necessity in a competitive global economy. According to Conklin, American workers may have a higher productivity level with advanced technologies, but manufacturing employment is declining. The import policies also affect the tendency of leaders of corporations for outsourcing (Conklin, 2007). Outsourcing is also a challenge for firms in developed countries to sustain a competitive advantage by changes in business strategy. Well-planned outsourcing is helpful to leaders of both host and parent countries (Javalgi et al., 2008); therefore, leaders of firms need to be careful in providing technical knowledge to partners in offshore countries (Javalgi et al., 2008).

Despite the challenges of offshoring and outsourcing, according to Andone and Pavaloaia (2010), outsourcing is relatively mature in the international market now. Thus, organizational leaders may align outsourcing with business strategies for a competitive advantage. Organizational leaders practice partnership, with other partner firms, to maximize the benefits of outsourcing in multisourcing (Andone & Pavaloaia, 2010).

Offshoring and Risks

Many unknowns exist about offshoring, therefore, offshoring presents a challenge to researchers, policy makers, and practitioners. The location of offshore facilities involves risks, and the risks associated with information system offshoring include firm-level risks, environment-level risks, and country-level risks (Hahn, Doh, & Bunyaratavej, 2009; Jensen, 2012).

Manufacturing Sector and Offshoring

Kang and Wu (2009) contended authorities of manufacturing firms move internal manufacturing and operations to low-cost areas in overseas locations. Kang and Wu claimed outsourcing practices are due to the low-cost strategy, access to foreign markets, and access to innovative capabilities. According to Kang and Wu, firms may not be successful in China if there is only a low-cost motive. The officials of firms need to outsource the products based on profit impact and risk factors. Risk factors vary from product to product, and business leaders need to conduct a thorough evaluation of profit and risks associated with outsourcing (Kang & Wu, 2009).

Jensen (2008) claimed the power distribution, for advanced technical services between host and home firms, is different from the offshoring of standard product manufacturing. Offshoring firms dominate in standard product manufacturing. According to Jensen, however, offshoring of advanced technical services has balanced distribution of power. Managers need to maintain flow of knowledge and information between onshore and offshore units (Jensen, 2008).

Long-Term and Short-Term Effects

Conklin (2007) reported the long-term and short-term impacts of outsourcing on manufacturing jobs in the United States. For example, in the short-term, manufacturing jobs will be lost in the United States and over time, the service, information technology, and software sectors will absorb the displaced manufacturing workers (Conklin, 2007). Manufacturing jobs have been important in the economy of the United States, and Conklin's research addressed outsourcing in terms of benefits and jobs in the manufacturing jobs. The tax code favors corporations with business overseas. Because of

this, government officials should monitor the leaders of corporations and adjust policies accordingly (Conklin, 2007).

Effect of Government Policies

According to Phong and Yoshi (2009), government policies affect export activities. Organizational structure plays a crucial role for internal resources of organizations. Government leaders should create a favorable environment for new ventures (Phong & Yoshi, 2009). Tan and Bennett (2007) noted outsourcing is increasing at a significant rate in developed countries; between 22% and 29% of United States jobs have the potential to be offshored. Offshoring to India is increasing from business leaders in developed nations; however, Chinese business leaders have a competitive advantage in manufacturing (Tan & Bennett, 2007).

MacPherson (2008) reported many manufacturers are outsourcing research, design, and product development activities at a higher rate than expected because of changes in strategic management powered by Internet-based technologies. Leaders of SMEs face challenge to secure external support, which requires site visits (MacPherson, 2008). MacPherson indicated technological innovations in communications assisted organizations in outsourcing jobs to suppliers.

Li (2010) reported intrafirm offshoring in multinational firms increased at a faster rate (33.7%) compared to offshoring through subcontracting (12.7%) from 1992 to 2008 in China. The increased trend of offshoring caused workers to change from the manufacturing sector to the service sector. The manufacturing sector market share also reduced significantly because of offshoring (Li, 2010).

Strategies and Offshoring

Elmuti (2003) believed most company leaders feel successful with outsourcing. Many company leaders consider outsourcing tool to reduce cost (Elmuti, 2003). However, outsourcing increases productivity, flexibility, speed and innovation, and access to new technologies. O'Toole and Lawler (2008) emphasized low wages and benefits are not the only criteria to reduce cost, and the criteria might create negative effect on employees. O'Toole and Lawler further added that absenteeism is one of the negative impacts on employees because of low wages, and the most profitable company leaders experience lower operating costs rather than instituting lower wages (O'Toole & Lawler, 2008). Strategies with clear objectives, appropriate outsourcing partners, adequate skills, and effective communication play a critical role in maximizing benefits of outsourcing (Elmuti, 2003).

Risks and Cost Reduction

Hesketh (2008) concluded decision-making for outsourcing depends upon strategy formulation, the unique business case, alternate options, the service delivery platform, and introduction of the strategy to the market. Executives seek risk mitigation and cost reduction in outsourcing decisions (Hesketh, 2008). Officials of large multinational firms tend to offshore large numbers of jobs. Gray (2010) further added that engineering managers use outsourcing as a cost advantage to reduce project completion time and improve design quality. Gray indicated no cost savings in domestic and global outsourcing of engineering functions. Gray also noted quality is an issue with outsourcing engineering functions, and domestic outsourcing does not save on costs. Leaders of firms should consider outsourcing of noncore functions only; however, flexibility, workforce management, and access to technologies might be factors for outsourcing strategies (Gray, 2010).

Business leaders outsource to have a competitive advantage; however, according to Kroes (2007), these leaders may not align outsourcing with their firms' overall competitive strategies. Outsourcing has a positive relationship with the performance of the organization. However, Espiritu (2008) found that approximately 50% of outsourcing initiatives fail due to unsatisfactory performance of the

outsourcing alliance. Thus, business leaders need to align outsourcing factors with their firms' strategic, competitive priorities, which can involve cost, quality, time, flexibility, and innovation (Kroes, 2007).

Partial Offshoring

Chaudhary and Kishore (2010) indicated determining the scope of outsourcing includes temporary outsourcing, partial outsourcing, and entire business function outsourcing. The category of the outsourcing relationship depends upon the nature of outsourcing. For example, traditional outsourcing has a single service provider (Chaudhary & Kishore, 2010).

Additionally, according to Chaudhary and Kishore (2010), cosourcing has two service providers working for a single client. A multisourcing has multiple service providers working for a single client. An alliance is a collaboration of multiple service providers working for one or more clients (Chaudhary & Kishore, 2010). Lastly, a joint venture is a collaboration of multiple service providers serving one or more business ventures (Chaudhary & Kishore, 2010). The internal group, which competes with external suppliers, is insourcing (Chaudhary & Kishore, 2010).

Hubler (2008) noted manufacturing final goods in developed countries while making intermediate goods in low-cost, low-skilled areas affects product cost because of a differential in the labor cost. The partial outsourcing equilibrium model, final goods demand, and international trade can indicate the benefits of offshore outsourcing (Hubler, 2008). Offshoring is more like a substitution of high-skilled and low-skilled workers rather than between low-skilled workers of developed and developing countries (Hubler, 2008).

Offshoring and Cost Reduction

Maltz, Carter, and Maltz (2011) asserted managers consider cost, reliability, and intellectual property protection when outsourcing decisions; however, Maltz and colleagues concluded outsourcing decisions depend more upon the reliability than cost. Managers consider labor costs separately from other costs such as transportation costs. Kumar and Eickhoff (2006) claimed organizations should not outsource core competencies except for specific short-term business needs. Managers also must make a trade-off between costs and intellectual property protection (Maltz et al., 2011).

From a business perspective, the concept of offshoring primarily addresses cost reduction (Gupta, Seshasai, Mukherji, & Ganguly, 2007). However, according to Gupta and colleagues, the offshoring decision by leaders of professional services in the information system industry depends upon strategic goals rather than just a cost reduction. Offshoring could become a win-win situation for all in the globalized world as businesses, governments, and workers adapt to the marketplace realities (Gupta et al., 2007). For example, business leaders may make use of different time zones, exploiting the opportunity of a 24-hour global knowledge factory (Gupta et al., 2007). Often, managers focus on reducing costs with outsourcing and ignore other risk factors that are hard to quantify; therefore, managers must consider soft costs, in addition to hard costs, while making decisions related to outsourcing (Kumar & Eickhoff, 2006).

Offshore Services and Host Country

A business leader's decision to outsource, or the service provider's decision to provide services, influences the institutions (Lahiri & Kedia, 2011). For example, to address the shortage of skills, the institutions and local authorities might focus on education in science, engineering, and mathematics when leaders of foreign firms decide to outsource offshore (Lahiri & Kedia, 2011). Similarly, outsourcing decisions might lead to advanced research in methods of communications to enable the transfer of information effectively across borders (Lahiri & Kedia, 2011). Lahiri and Kedia found

firm leaders might reconsider different locations for service providers. The countries of service providers also must (a) enhance regulatory systems, (b) improve institutions, (c) establish training centers to make things ready for foreign firms, and (d) design innovative methods to provide low-cost services to foreign firms (Lahiri & Kedia, 2011).

According to Agrawal, Goswami, and Chatterjee (2010), business leaders use outsourcing to reduce costs and increase competitiveness. Agrawal and colleagues claimed small to medium enterprises can easily avoid initial fixed costs by outsourcing work and focus on core value projects. Agrawal and colleagues found many businesses even offshore value-added and core-competency works. According to Agrawal and colleagues, offshoring increased in developing countries at a rate of 27% from 2003 through 2007. Outsourcing is flexible compared to vertical integration. However, in some cases, poor quality with offshoring can limit the short-term benefits of offshoring (Agrawal et al., 2010).

Wages at Offshore Locations

According to Kumar, Medina, and Nelson (2009), the currency change in China has cost pressures that can cause a change in wages. Manufacturers in the United States might consider shifting manufacturing to other countries such as Vietnam, Indonesia, Turkey, and Argentina to avoid China's cost pressures. The labor costs, currency, shipping cost, and raw material costs all affect the product cost, which reduces the profit. The driving factors might affect decisions regarding offshore outsourcing in the near future depending on quotes from other countries' business leaders (Kumar, Medina, & Nelson, 2009).

Offshoring and Competitive Advantage

Outsourcing has a positive effect on the performance of an organization; however, after a certain level of outsourcing, the organizational performance will decrease (Kotabe, Mol, & Murray, 2008). Firm leaders can optimize the benefits of outsourcing when employees have the ability to integrate outsourced activities into their operations (Kotabe et al., 2008). Kotabe and colleagues found outsourcing has five drivers: (1) experience of managers, (2) foreign headquarters, (3) competitors, (4) external institutions, and (5) information.

Employee's Knowledge

The increase in employment in low-cost countries decreases employment opportunities in the United States. Future investment in education might exploit globalization, increase productivity, and increase wages by outsourcing low-end jobs (Harrison & McMillan, 2006). If there is a 10% increase in employment in low-cost areas overseas, there is about a .3% to 2.1% fall in employment in the United States (Harrison & McMillan, 2006).

New product development is also crucial for business growth. Efficient relationship with upstream suppliers and leaders of downstream OEMs is important for business growth of a firm. A close relationship with OEMs can be a risk or strength for the organization (Shih-Chi, Lee-Yun, & Hsiao-Cheng, 2008).

Offshoring and Future Trends

Cost Reduction

Kumar, Holden, and Igo (2009) claimed that, from a financial perspective, a 30% increase in revenue is equivalent to 10% reduction in cost. Material costs continuously increase since expanding economies like India and China might have higher wages in the host country (Kumar, Holden, & Igo, 2009). An increasing trend of shipping costs might reduce the opportunities of profit in the second

and third decades of the 21st century. This trend might drive the decision when to bring production back to the parent country (Kumar, Holden, & Igo, 2009).

Economic Policies

Earle, Madek, and Madek (2007) claimed outsourcing has created hardships for many Americans because business leaders of the United States are losing manufacturing jobs. Wages in the United States are higher compared to those of foreign workers, and thus Americans have a higher standard of living. However, economists claim that globalization is good for developed countries in the long term (Earle et al., 2007).

Earle and colleagues (2007) claimed federal and state government leaders should exploit globalization to strengthen the economy. According to Earle and colleagues, business leaders of the United States, like those of other countries, should provide incentives to domestic and foreign corporations to stimulate job growth in the United States. Tax rate and health care incentives could be part of this plan (Earle et al., 2007).

Employee Wages

The trend of offshoring service and knowledge work is likely to increase in the future because of advanced communication technologies, which reduce the cost of conducting business in offshore locations (Stratman, 2008). Although wages in developing countries are increasing, these wages will not be on par to wages in developed countries in the early part of the 21st century (Stratman, 2008).

Tax Policy

Tax reforms, supervision of financial sectors, and elimination of inequality in education might decrease the time needed for economic recovery in the United States (Wolnicki, 2009). Wolnicki noted employment in the manufacturing sector decreased by 39% in the United Kingdom from 1997 to 2003. The employment decline in the printed circuit board sector was 61%, and the decline in employment in printed circuit board subcontract assembly sector was 22% (Wolnicki, 2009). These data indicate a major shift in strategies for manufacturing companies in the United Kingdom. The strategic sectors such as defense and avionics, network server configuration, and low volume products might not be outsourced to offshore countries to reduce product cost (Webb, Reed, Carpineta, & Walsh, 2006).

Research Method and Design

A quantitative method with a correlational research design was used to determine the degree of influence that partial offshoring have on business growth of multinational EMS companies operating in the United States. The criterion variable in this research was business growth of multinational EMS companies in the United States, and the predictor variable was partial offshoring. The data were analyzed using SPSS/PASW statistical software.

A correlational research design was used to determine the degree of influence that partial offshoring have on business growth of multinational EMS companies operating in the United States. Hypothesis was tested using bivariate linear regression, and multiple linear regression analysis was used to examine the relationship of the criterion variable with predictor variable, partial offshoring, in terms of regression coefficients. The validity and accuracy of the survey instrument were tested using an external expert panel. Additionally, the data collection instrument was adapted from previous successful research (Benit, 2008; Gray, 2010).

Data Collection Instrument

The survey instrument from Benit (2008) and Gray (2010) was modified to create the data collection instrument for this study. The validity and accuracy of the survey instrument were confirmed with an expert panel. Such actions should achieve a higher quality of this research because trustworthy research outcome depends upon valid research design, data collection, and data analysis (Creswell, 2009). The survey questions measured the number of projects transferred to offshore locations in the past year, and the survey questions also measured the business growth in the past 3 years. The participants' responses were measured on a 7-point Likert scale.

The link for survey instrument was forwarded to the prospective participants using databases of Data.com Contacts and Hoovers (Data.com Contacts, 2011; Hoovers, 2012), from multinational EMS companies in the United States. The email contact information of the participants from these databases was to forward the survey web link to administer the survey. The survey link was forwarded to the participants through email. Through the process of convenient snowball sampling, participants were asked to forward the web link to other eligible participants in the EMS industry, in the United States.

Data Collection

A pilot study was not conducted using the survey instrument; instead, an external expert panel was used to validate survey contents. The feedback and recommendations from the external expert panel were incorporated in the main data collection survey instrument for better research results. In addition, Cronbach's alpha (i.e., .870) was assessed for variables, predictors and criterion, during this study prior to using the data to analyze the results. An email survey instrument was sent to 1,869 participants from 13 anonymous multinational EMS companies in the United States (Data.com Contacts, 2011; Hoovers, 2012; Manufacturing Market Insider, 2012).

Data Analysis

Descriptive and inferential statistics was used to investigate the existence and extent of the relationships among the study variables. Descriptive statistics such as means and standard deviations were generated for each variable using the statistical software package SPSS/PASW. The hypothesis examining the effect of the predictor variable, partial offshoring, on business growth of multinational EMS companies in the United States, was tested using bivariate linear regression and multiple linear regression analysis (Pedhazur, 1997) with the help of statistical software package SPSS/PASW.

Results

The research question was to find the degree of relationship, if any, between partial offshoring and business growth for multinational EMS companies operating in the United States. Table 1 indicates the title of the participants.

Table 1: Title of Participants

Title of Participants	Number of Participants
CEO/President	1
Vice President	13
General Manager	4
Director	10
Manager	12
Blank (did not complete survey after agreeing to informed consent)	7

Note. Source is the doctoral study: Naru, H. (2013). *Offshoring and Growth of Multinational Electronic Manufacturing Service Companies in the U.S.A. (Doctoral study)*. Available from ProQuest Dissertations and Theses database. (ID No. 13250).

Although statistically, not significant, partial offshoring, is positively (i.e., standardized slope of .064) related to the criterion variable, business growth (see Table 2) as shown in the Equation 1.

$$BG = .064*(\text{partial offshoring}) \quad (1)$$

Table 2: Coefficients: Business Growth and Partial Offshoring

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	SE	Beta	t	p
1 (Constant)	3.758	.789		4.764	.000
PAR_OFF_reg_mean	.090	.240	.064	.376	.709

Note. SE = standard error. Source is the doctoral study: Naru, H. (2013). *Offshoring and Growth of Multinational Electronic Manufacturing Service Companies in the U.S.A. (Doctoral study)*. Available from ProQuest Dissertations and Theses database. (ID No. 13250).

The alternate research hypothesis for the Research Question was to find a significant relationship between partial offshoring and business growth of multinational EMS companies operating in the United States. The research outcome failed to reject the null hypothesis as the significance value of alpha (i.e., p -value = .709, shown in Table 2) is larger than .05 level of alpha, that is, 95% confidence interval for slope will not contain a value of non zero. Thus, there is no significant relationship between partial offshoring and business growth of multinational EMS companies operating in the United States.

The individual relationship of both offshoring and partial offshoring with business growth, using multiple linear regression, is shown in the Equation 2. Although multiple linear regression statistically not a significant, Table 3 indicates that predictor variables, offshoring is negatively (i.e., standardized slope of -.309) related to the criterion variable, business growth and partial offshoring is positively (i.e., standardized slope of .237) related to business growth as shown in the Equation 2.

$$BG = -.309*(\text{offshoring}) + .237*(\text{partial offshoring}) \quad (2)$$

Table 3: Coefficients: Business Growth, Offshoring, and Partial Offshoring

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	SE	Beta	t	p
1 (Constant)	4.622	.958		4.823	.000
OFF_reg_mean	-.360	.235	-.309	-1.528	.136
PAR_OFF_reg_me an	.332	.283	.237	1.170	.250

Note. SE = standard error. Source is the doctoral study: Naru, H. (2013). *Offshoring and Growth of Multinational Electronic Manufacturing Service Companies in the U.S.A. (Doctoral study)*. Available from ProQuest Dissertations and Theses database. (ID No. 13250).

Business Growth and Components of Partial Offshoring

Multiple linear regression model between the criterion variable, business growth, and individual components of predictor variable, partial offshoring is shown in Table 4.

Table 4: Coefficients: Individual Components of Partial Offshoring

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	SE	Beta	t	p
1 (Constant)	3.890	.817		4.762	.000
Q1Partial-coded	-.136	.448	-.109	-.305	.763
Q2Partial-coded	-.262	.459	-.233	-.571	.572
Q3Partial-coded	-.094	.480	-.066	-.197	.845
Q4Partial-coded	.592	.469	.484	1.260	.217

Note. SE = standard error. Source is the doctoral study: Naru, H. (2013). *Offshoring and Growth of Multinational Electronic Manufacturing Service Companies in the U.S.A. (Doctoral study)*. Available from ProQuest Dissertations and Theses database. (ID No. 13250).

Although multiple linear regression statistically not a significant, Table 4 indicates that only Q4Partial-coded (Standardized Coefficients of .484), the partial offshoring component, is positively related to the criterion variable, business growth in this multiple regression model. So, the highest contribution to business growth in the partial offshoring components is related to Q4Partial-coded manufacturing projects, which make final products in the United States and subassemblies overseas, related to large corporation (OEM companies with annual revenue more than \$100,000,000) offshored to other countries at the directives of large corporations (OEMs).

Discussion

Based on the quantitative correlational results, partial offshoring does not have a significant relationship with business growth. Although statistically, not significant, research results indicate that predictor variable, partial offshoring is positively related to business growth. Similarly, although multiple linear regression statistically, not a significant, further analysis of individual components of partial offshoring indicate that manufacturing projects, which make final products in the United States and subassemblies overseas, related to large corporation (OEM companies with annual revenue more than \$100,000,000) offshored to other countries at the directives of large corporations (OEMs) relate positively to business growth of multinational EMS companies operating in the United States. However, this research was limited by the small sample size, which may not be representative of the population.

Implications

The research outcomes of the current study revealed factors related to growth in the business of multinational EMS companies for manufacturing sites operating in the United States. This business growth may lead to the creation of additional jobs at the manufacturing sites of EMS companies in the United States. The more projects are kept at the manufacturing sites of EMS companies in the United States, the better the job opportunities will be in the United States.

Recommendations for Further Study

Future research related to business growth in the United States may involve other manufacturing industries including original equipment makers; for example, semiconductor, electrical equipment and appliances, communication equipment, aerospace and defense, and telecommunication because the current study covered only the EMS industry in the United States. The future research may also address the relationship of defense and aerospace projects with business growth of multinational EMS companies in the United States to find the relationship of other types of projects with business growth. Future qualitative research may be appropriate to find additional specific in-depth information about the relationship of partial offshoring with business growth, at the directive of OEMs because EMS companies provide services to OEM companies, which play a crucial role in relocating the business. Additional qualitative research might further explore the factors related to partial offshoring that meet the strategic goals of multinational EMS companies and involved OEM companies.

References

- Agrawal, S., Goswami, K., & Chatterjee, B. (2010). The evolution of offshore outsourcing in India. *Global Business Review, 11*, 239–256. doi:10.1177/097215091001100208
- Anyadike-Danes, M., Bonner, K., Hart, M., & Mason, C. (2009). *Measuring business growth: High growth firms and their contribution to employment in the U.K.* (Research Report: MBG/35). Retrieved from www.nesta.org.uk
- Arisoy, O. (2007). Integrated decision making in global supply chains and networks. *Dissertation Abstracts International, 68*, 219B. (UMI No. 3284525)
- Benit, Y. (2008). Impact of offshore outsourcing on competitive advantage of U.S. multinational corporations. *Dissertation Abstracts International, 69*, 209A. (UMI No. 3338084)
- Chaudhary, S., & Kishore, R. (2010). Determinants and impacts of governance forms on outsourcing performance: Evidence from a case study. *Journal of Information Technology Case & Application Research, 12*, 39–56. Retrieved from <http://jitcar.ivypl.org/>
- Conklin, C. (2007). Outsourcing United States manufacturing jobs: An assessment of perspectives. *Masters Abstracts International, 45*, 70. (UMI No. 1443169)
- Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches* (3rd ed.). Thousand Oaks, CA: Sage.
- Data.com Contacts (2011). *Salesforce data.com contacts by Jigsaw*. Retrieved from <http://about.jigsaw.com/>
- Earle, B., Madek, G. A., & Madek, C. (2007). A finger in the dike? An examination of the efficacy of state and federal attempts to use law to stem outsourcing. *Northwestern Journal of*

- International Law & Business*, 28, 89–123. Retrieved from <http://www.law.northwestern.edu/jilb/index.html>
- Elmuti, D. (2003). The perceived impact of outsourcing on organizational performance. *Mid - American Journal of Business*, 18, 33–41. Retrieved from <http://www.bsu.edu/mcobwin/majb/>
- Espiritu, R. (2008). Measures of alliance success: A study of outsourcing professionals in the United States. *Dissertation Abstracts International*, 71, 214A. (UMI No. 3430552)
- Gray, C. (2010). Assessing the use of outsourcing and offshoring for engineering designs. *Dissertation Abstracts International*, 71, 186A. (UMI No. 3399616)
- Gunta, S. (2007). Co-location of unrelated divisions in the ITES-BPO industry: Dynamics of value creation and destruction. *IIMB Management Review (Indian Institute of Management Bangalore)*, 19, 201–211. Retrieved from <http://www.iimb.ernet.in/publications/review>
- Gupta, A., Seshasai, S., Mukherji, S., & Ganguly, A. (2007). Offshoring: The transition from economic drivers toward strategic global partnership and 24-hour knowledge factory. *Journal of Electronic Commerce in Organizations*, 5(2), 1–23. Retrieved from <http://www.igi-global.com/journal/journal-electronic-commerce-organizations-jeco/1076>
- Hahn, E. D., Doh, J. P., & Bunyaratavej, K. (2009). The evolution of risk in information systems offshoring: The impact of home country risk, firm learning, and competitive dynamics. *MIS Quarterly*, 33, 597–616. Retrieved from <http://www.misq.org/>
- Harrison, A. E., & McMillan, M. S. (2006). Dispelling some myths about offshoring. *The Academy of Management Perspectives*, 20(4), 6–22. Retrieved from <http://journals.aomonline.org/amp/>
- Hesketh, A. (2008). Should it stay or should it go? Examining the shared services or outsourcing decision. *Strategic Outsourcing: An International Journal*, 1, 154–172. doi:10.1108/17538290810897165
- Hong, P. P., & Roh, J. J. (2009). Internationalization, product development and performance outcomes: A comparative study of 10 countries. *Research in International Business and Finance*, 23, 169–180. doi:10.1016/j.ribaf.2008.03.004
- Hoovers. (2012). *Research companies*. Retrieved from <http://www.hoovers.com/>
- Hubler, M. (2008). The labour market effects of outsourcing parts and components: A simple model with Cournot competition. *Aussenwirtschaft*, 63, 167–193. Retrieved from <http://hdl.handle.net/10419/30066>
- Jagersma, P. K., & van Gorp, D. M. (2007). Redefining the paradigm of global competition: Offshoring of service firms. *Business Strategy Series*, 8, 35–42. doi:10.1108/17515630710686860
- Javalgi, R., Dixit, A., & Scherer, R. (2008). Outsourcing to emerging markets: Theoretical perspectives and policy implications. *Journal of International Management*, 15, 156–168. doi:10.1016/j.intman.2008.08.001
- Jensen, P. (2008). A learning perspective on the offshoring of advanced services. *Journal of International Management*, 15, 181–193. doi:10.1016/j.intman.2008.06.004
- Jensen, P. D. O. (2012). A passage to India: A dual case study of activities, processes and resources in offshore outsourcing of advanced services. *Journal of World Business*, 47, 311–326. doi:10.1016/j.jwb.2011.04.018

- Kang, M., & Wu, X. (2009). Strategic outsourcing practices of multi-national corporations (MNC) in China. *Strategic Outsourcing: An International Journal*, 2, 240–256.
doi:10.1108/17538290911005153
- Kotabe, M., Mol, M. J., & Murray, J. Y. (2008). Outsourcing, performance, and the role of e-commerce: A dynamic perspective. *Industrial Marketing Management*, 37, 37–45.
doi:10.1016/j.indmarman.2007.06.011
- Kroes, J. (2007). Outsourcing of supply chain processes: Evaluating the impact of congruence between outsourcing drivers and competitive priorities on performance. *Dissertation Abstracts International*, 68, 133A. (UMI No. 3271539)
- Kumar, S., & Eickhoff, J. H. (2006). Outsourcing: When and how should it be done? *Information Knowledge Systems Management*, 5, 245–259. Retrieved from <http://www.iksmonline.com/index.php>
- Kumar, S., Holden, N., & Igo, L. (2009). A decision modelling framework to analyse offshore outsourcing changes for U.S. manufacturers. *Journal of Revenue and Pricing Management*, 8, 424–437. doi:10.1057/rpm.2009.2
- Kumar, S., Medina, J., & Nelson, M. T. (2009). Is the offshore outsourcing landscape for U.S. manufacturers migrating away from China? *Supply Chain Management*, 14, 342–348.
doi:10.1108/13598540910980251
- Lahiri, S., & Kedia, B. L. (2011). Co-evolution of institutional and organizational factors in explaining offshore outsourcing. *International Business Review*, 20, 252–263.
doi:10.1016/j.ibusrev.2011.01.005
- Li, Z. (2010). Exports and offshoring: Theory and evidence from China. *Dissertation Abstracts International*, 71, 155A. (UMI No. 3427390)
- Lockamy, A., & McCormack, K. (2010). Analysing risks in supply networks to facilitate outsourcing decisions. *International Journal of Production Research*, 48, 593–611.
doi:10.1080/00207540903175152
- MacPherson, A. (2008). Producer service linkages and industrial innovation: Results of a twelve-year tracking study of New York state manufacturers. *Growth & Change*, 39, 1–23.
doi:10.1111/j.1468-2257.2007.00403.x
- MacPherson, A., & Vanchan, V. (2009). The outsourcing of industrial design services by large U.S. manufacturing companies. *International Regional Science Review*, 33, 3–30.
doi:10.1177/0160017608330266
- Maltz, A., Carter, J. R., & Maltz, E. (2011). How managers make sourcing decisions about low cost regions: Insights from perceptual mapping. *Industrial Marketing Management*, 40, 796–804.
doi:10.1016/j.indmarman.2011.01.003
- Manufacturing Market Insider (2012). *The MMI top 50 for 2011*. Retrieved from <http://www.mfgmkt.com/mmi-top-50.html>
- Naru, H. (2013). *Offshoring and Growth of Multinational Electronic Manufacturing Service Companies in the U.S.A. (Doctoral study)*. Available from ProQuest Dissertations and Theses database. (ID No. 13250)
- Pedhazur, E. J. (1997). *Multiple regression in behavioral research* (3rd edition). Fort Worth, TX: Harcourt Brace College Publishers.

- Phong, T., & Yoshi, T. (2009). Determinants of the new manufacturing venture's performance in Vietnam. *International Journal of Business and Management Science*, 2, 1–16. Retrieved from <http://www.safaworld.org/ijbms/>
- Shih-Chi, C., Lee-Yun, P., & Hsiao-Cheng, Y. (2008). The competitive advantages of Quanta Computer - The world's leading notebook PC manufacturer in Taiwan. *Total Quality Management & Business Excellence*, 19, 939–948. doi:10.1080/14783360802224602
- Stratman, J. K. (2008). Facilitating offshoring with enterprise technologies: Reducing operational friction in the governance and production of services. *Journal of Operations Management*, 26, 275–287. doi:10.1016/j.jom.2007.02.006
- Stringfellow, A., Teagarden, M. B., & Nie, W. (2008). Invisible costs in offshoring services work. *Journal of Operations Management*, 26, 164–179. doi:10.1016/j.jom.2007.02.009
- Tambe, P. (2008). Essays on technology, labor mobility, and organizations. *Dissertation Abstracts International*, 69, 137A. (UMI No. 3328660)
- Tan, B. L., & Bennett, D. J. (2007). Development and application of an electronic-manufacturing selection framework for SMEs. *International Journal of Innovation & Technology Management*, 4, 241–265. doi:10.1142/S0219877007000849
- Thomas, A. (2007). Creating sustainable small to medium enterprises through technological innovation. *Proceedings of the Institution of Mechanical Engineers—Part B—Engineering Manufacture (Professional Engineering Publishing)*, 221, 513–528. doi:10.1243/09544054JEM524
- Webb, D. P., Reed, F. M., Carpineta, P., & Walsh, K. (2006). The U.K. electronics manufacturing industry 1997-2003: A case study of the effect of globalization. *Proceedings of the Institution of Mechanical Engineers: Part B Journal of Engineering Manufacture*, 220, 1373–1384. doi:10.1243/09544054B13704
- Wolnicki, M. (2009). The post-conservative orphan: Why the U.S.A. needs an effective government economic policy. *International Journal of Social Economics*, 36, 5–22. doi:10.1108/03068290910921154

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