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BUSINESS PROCESS OUTSOURCING PERFORMANCE EVALUATION - A LEAN-AGILE FRAMEWORK AND ITS EMPIRICAL VALIDATION

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ABSTRACT

How do we know that a Business Process Outsourcing (BPO) company is performing well or not? The validation method of the hybrid constructs presented in this paper is fueled by the investigation on the empirical framework of such question. Cost and quality which are seen as key factors of measurement have received favorable attention from researchers in manufacturing and production industries. However, the business process outsourcing service industry faces challenges with the recent change in the supply chain management orientation to the business as a service across networks of corporations. Therefore, this paper provides a validation of the performance measurement framework for BPO service organizations. To our knowledge, this is the first of its kind to extensively explore both lean and agile literature and then conceptualize the literature into a hybrid framework. We evaluated the current/existing framework that measures performance effectiveness and efficiency under lean and agile methodologies, excavated 8 constructs and then conducted a reliability and validity test for validation.
Keywords: Operation Research, Innovative Performance, Operation Management, Empirical Validation, Business Process Outsourcing

INTRODUCTION

Diversification is an avenue that a company pursuing growth strategy employs in order to free up resources. This process involves series of up skills in performance level, change in management style and re-allocation of resources. Companies pursuing growth strategies through diversification have employed outsourcing of their business operation to other countries such as

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China, India, and Malaysia (Mukherjee, Gaur, & Datta, 2013). Business Process Outsourcing (BPO) is "the management of one or more specific business processes or function (such as procurement, finance, and accounting, human resources, asset or property management) by a third party, together with the information technology that supports the process or function" (McIvor, 2006). However, the problem is the size of the organization and the inherent risk of losing control (Amit, 1988), supplier diversification with respect to pricing (Li, Sethi, & Zhang, 2013) and the timing (Purdy & Wei, 2014). Furthermore, it is becoming increasingly demanding for BPO company to meet up with performance requirements amidst dynamic government policy control (Cordella & Willcocks, 2012), stress and work culture (Jain & Cooper, 2012; Koys, 2001) and as noted by Kyratzoglou (2013) "with the increase in growths of outsourcing and offshoring, supply chains become geographically dispersed and exposed to various types of risks". One of such risk is the fear of performance failure, concludes Kyratzoglou. According to Franca, Jones, Richards, & Carlson, (2010) when performing activities internally, companies believed that they can exercise greater control over an internal function with less chance of failure by implementing performance improvement strategy such as lean manufacturing. However, Yusuf & Adeleye (2002) study showed that the performance enhancements of lean practices have fallen short of sustaining company's competitive advantage in a dynamic market hence there is a need for adoption of responsive practices.

Like every other industry, the BPO service industry is characterized by intangibility, simultaneity, heterogeneity, and perishability. Because of the unpredictability of the market in which the BPOs' operate, it is evident that they face greater variability than other types of businesses (Khang, Yu, & Lee, 2013; Maull, Geraldi, & Johnston, 2012). The question is: *How well could BPO service companies align themselves to the variability in order to improve performance?* This is yet to be given adequate attention in the past literature (Neu, 2005). In order to improve their business performance, BPO service companies need to understand the variability they face and then match their strategies to that variability.

The purpose of this paper is to validate a lean-agile performance measurement framework for BPO service organization. It suffices to state that we do not intend to prioritize these methodologies but rather to see how both could best be used by organizations in business process to strengthen their competitiveness. For easy understanding, we divided this paper into 3 sections.

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The next part discusses the paradigm of our empirical finding under lean and agile methodology and identify their converging point for the business process outsource industry. This section builds on underlying outsourcing theories established in part one of this research work. Section 2 presents the statistical analysis of the field study data while section 3 discusses the implication of the result and suggests future areas to extend this research.

REVIEW OF LITERATURE

This study applies a contingency framework to explain the relationships and a converging point between lean and agile in business process outsource environment. Contingency theory suggests that a firm's performance is affected by three variables: environment, strategy, and organizational design (Boyd, Takacs Haynes, Hitt, Bergh, & Ketchen, 2011; Mintzberg, 1979; Neu, 2005; Wadongo & Abdel-Kader, 2014). In order to achieve the expected performance level, organizations need to react appropriately to the external environment. In other words, there must be a responsive strategy to improve performance.

Lean manufacturing has been applied in different industries to improve performance effectiveness and efficiency. In modern research, lean has been defined "as a collection of operational techniques that focus on productive use (no waste) of resources, to reduce internal and external variability produced along the supply chain" (Štefanić, Tošanović, & Čala, 2010). Shah & Ward (2007) defined lean manufacturing as "an integrated socio-technical system whose main objective is to eliminate waste by concurrently reducing or minimizing supplier, customer, and internal variability". A year later, the research of Lakhe (2008), identified 4 variabilities which are evident in BPO industry. These are variability caused by the (i) operator; (ii) variability caused by machine; (iii) variability caused by machine set-up and (iv) variability caused by the management. Over the years, lean manufacturing has been explored in these directions. Hence, it suffices to say that performance of a BPO company will improve in proportionate to its ability to reduce variability.

Proponents of agile on the other hand have mainly confined their philosophy to the organizations in the software industry. It has been defined with respect to the agile enterprise without much to

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the service industry. Agile as an overall strategy which focuses on thriving in an unpredictable market environment, is a growing methodology to measure performance in this 21st century. The research of Gligor, Esmark, & Holcomb (2015); Gligor & Holcomb (2012) brought to the fore of the core attributes of agility wherein they describe exceptional internal capabilities to meet the rapidly changing needs of the marketplace with speed and flexibility. Relating lean and agile to BPO service organizational performance, it is imperative for business owners/managers to develop a systemic performance measurement for effective management of processes in order to satisfy changing customer needs. Thus this paper took a step further from the previous research to set the pace in combining lean and agile in the BPO service sector.

To achieve our objective, empirical theories were coined from academics journal repositories. We reviewed studies from business management, operation research, management academic journals and we found out that the research on performance measurement of BPO service organization had not been given adequate attention. For instance Academy of Management Journal only had two research paper on "outsourcing performance" keyword search wherein, Carnahan & Somaya (2013) uses the relational advantage to examine the effect of employee mobility while Nadkarni & Herrmann (2010) research centers on how CEO strategic personality influence employee performance in BPO industry.

Furthermore, the reviewed studies from web of science, have all produced mixed results. The failure to produce a consistent results in previous studies could be due to; (1) some studies such as Gutierrez Gutierrez, Barrales-Molina, & Tamayo-Torres (2016) used insufficient construct to analyze relationships between determinants of firm's performance; (2) the instrument and method used for measuring performance vary among the studies. For example, Maasouman (2014) operationalized performance only at operating levels, while Fullerton & Wempe (2009) measured only financial performance. In order to avoid these inadequacies , in this study, we used 8 constructs above the minimum threshold (Brown, 2006) and operationalized with different performance method in order to validate best industry approach to measuring performance. Table 1 below shows the synthesized literature in their respective domain.

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Table 1: Lean and Agile Literature Categorization

Domain	**Lean Literature**	**Agile Literature**
Quality	(Berger, 2013; Bhasin, 2008; Maasouman & Demirli, 2015)	
Cost	(Chauhan & Singh, 2012; Chiarini, 2013; Fullerton & Wempe, 2009; Pakdil & Leonard, 2014)	
Speed	(Chiarini, 2013; Huntsman, 2012; Pakdil & Leonard, 2014)	
Process Integration	(Amin & Karim, 2011; Maasouman & Demirli, 2015)	
Flexibility		(Huntsman, 2012; Lee, 2015; Santos Bernardes & Hanna, 2009; Yusuf, Adeleye, & Sivayoganathan, 2003)
Innovation		(Conforto, Amaral, da Silva, Di Felippo, & Kamikawachi, 2016; Gligor et al., 2015)
Market Sensitivity		(Gligor et al., 2015; Huntsman, 2012; Santos Bernardes & Hanna, 2009)
Optimal Service Level		(Costantino, Dotoli, Falagario, Fanti, & Mangini, 2012; Gligor et al., 2015; Lee, 2015)

RESEARCH METHODOLOGY

The fundamental stages and step by step of the method used in explaining the objectives of this research are quantitatively presented in this section.

Questionnaire design

The questionnaire was designed to collect data based on the identified eight constructs of our measurement model. The questionnaire is divided into two parts. The first part consisted of items

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related to demographics. The second part of the questionnaire consisted of items related to the eight constructs. A pilot study was conducted with 30 participants with similar characteristics of our intended respondents. This allowed the researcher to understand the homogeneity and reliability of each question (Table 2). Respondents from the pilot study were also given the opportunity to add/delete any question which doesn't harmonize with the domain/construct. Thereafter, the remaining study questionnaire was designed following the guidelines set by RENNINGER & HIDI (2011) and Rotgans (2015). In order to avoid questionnaire proliferation, multi-item questions of at least 6 items were used for each construct (Haidari, Samani, & Sohrabi, 2016).

Table 2: Cronbach's Alpha when item is deleted

	Cronbach's Alpha after Item Deleted
The company gives freedom to its employees. (Q2)	.710
The company doesn't have a formal method in the performance appraisal for the purpose of providing feedback to employees(Q6)	.739
In general, the performance of this company is much better than the performance of competitors.(C7)	.723
I am known generally for introducing excellent service to the customer.(S7)	.729
I do not enjoy talking about this company with other people.(P1)	.781
I share only approved information with my team members (P8)	.766
The company uses cash incentives to motivate employees.(F3)	.706
Cross-functional job activities are not encouraged by the company.(F4)	.634
There is a platform for employee knowledge sharing with others.(I5)	.715
Customers are satisfied with the performance of this company.(SL6)	.755

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Data collection

Data collected were through an electronic survey and personal distribution. The researcher emailed the questionnaire to the respondents in BPO service organizations comprising of procurement, finance and accounting, training, human resource, and customer relationship management. The data collection mode was according to the 4th edition on total design method (Dillman, 2014). Depending on the preference of the potential respondent, survey questionnaires were answered via e-mail, fax or mail. Overall, we received 200 complete and usable responses. The returned responses represent 50% (approx.) of the total targeted population (394) which is well within recommended range (Brown, 2006). The demographic nature of our respondent is presented in Table 3.

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Table 3: Demographic of respondents

	No of respondents	**% of respondents**
Job Title:		
CEO	10	5
CCO	30	15
Operation Managers	100	50
Team Leads	60	30
Work Experience in Years:		
Above 20	14	7
15 – 20	66	33
10 – 5	50	25
≤ - 5	70	35
Type of Global Business:		
Customer Call Centre	56	28
Banking Operation	51	26
Procurement	34	17
Info. Tech. Support	44	22
Other services	15	7
Age of the firm in years:		
Above 20	74	37
15 – 20	84	42
10 – 5	32	16
≤ – 5	10	5
Number of Employees		
Greater than 500	20	10
250 – 500	109	55
100 – 250	64	32
≤ – 100	7	3

The respondent's results show that 50% and 30% respondents are operation managers and team leads respectively. These are individuals who actively participate in day to day running of the operations. Interestingly, a quarter of the total returned filled questionnaire were top management. 40% of the returned filled questionnaire has spent over 10 years in the industry, meanwhile, 28% on average are in the customer call centers. The questionnaire covers a different aspect of business process outsource with customer call center and banking operation occupying 54% of the total returned questionnaire. This clearly shows that lean and agile practice are well known in these environments.

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The analyses were carried out with SPSS 22 software. The data was tested for distribution of normality through values and statistics of skewness and kurtosis. The maximum absolute value of skewness and kurtosis of the indicators in the remaining dataset were found to be 0.85 and 3.62 respectively. These values were well within the limits recommended by past research; univariate skewness <2, kurtosis <7 (Curran, West, & Finch, 1996; Dubey, Gunasekaran, & Samar Ali, 2015). In order to test the homogeneity of the items and its dimension in measuring the hypothesis as presented in each domain of the model, we conducted construct reliability, convergent and discriminant validity (Table 4).

Table 4: Statistical Analysis of all Construct

Construct	Item	Standardized Factor Loading	Variance	Error	Scale Composite Reliability	Average Variance Extracted (AVE)
Qaulity Cronbach's alpha = 0.739	The company compares the performance of employees who perform similar work.(Q1)	0.811	0.658	0.057	0.86	0.68
	The company uses a high proportion of managers and supervisors when compared to other companies.(Q3)	0.801	0.642	0.057		
	The managers and supervisors use a predefined checklist for performance appraisal.(Q4)	0.766	0.587	0.054		
	The managers monitor accurately the speed and the schedule that must be accomplished by the agents.(Q5)	0.863	0.744	0.061		
	The managers directly control the daily activities of the agents.(Q7)	0.804	0.647	0.057		
	The company uses the results of performance appraisal only to assist in employee skill development.(Q8)	0.843	0.711	0.060		
Cost Cronbach's alpha = 0.723	The earning of this company increased from last year.(C1)	0.856	0.732	0.061	0.86	0.66
	This company has achieved the expected level of sales/services.(C2)	0.753	0.568	0.053		
	The handling time doesn't have bearing on cost performance.(C3)	0.821	0.673	0.058		
	This company doesn't benefit very much from government financial assistance because many reservations impose upon it which restricts our activities and decisions.(C4)	0.816	0.666	0.058		
	The financial aid empowers this company to introduce new techniques and adopts advanced work methods, which lead to improving the	0.920	0.846	0.065		
	The assistance that this company gets from the government is just financial.(C6)	0.780	0.609	0.055		

Table 4: Continued

Construct	Item	Standardized Factor Loading	Variance	Error	Scale Composite Reliability	Average Variance Extracted (AVE)
Speed Cronbach's alpha = 0.729	I consider the completion of my work the most important thing for me.(S1)	0.818	0.668	0.058	0.86	0.66
	The company provides good opportunity and platform to multi-task.(S2)	0.735	0.540	0.052		
	As much as possible I try to meet all the demands of customers within first 10 min.(S3)	0.839	0.704	0.059		
	I believe that providing good service and at an appropriate time is something important in my work.(S4)	0.826	0.683	0.058		
	Escalation of cases to other team affect my processing time.(S5)	0.806	0.650	0.057		
	Excessive workload doesn't affects my performance rate.(S6)	0.850	0.723	0.060		
Process Integration Cronbach's alpha = 0.781	I don't really feel that the company's problems are my problems.(P2)	0.757	0.573	0.054	0.86	0.65
	I help to guide new employees in the company.(P3)	0.825	0.680	0.058		
	I always offer important information to other colleagues in my section.(P4)	0.835	0.696	0.059		
	I feel comfortable with the way the manager deal with the problem that influences me even if I could not bear his actions.(P5)	0.800	0.641	0.057		
	The company provides good compensation for the best employee.(P6)	0.814	0.662	0.058		
	Customer feedback is cascaded to the team members for the improvement plan.(P7)	0.815	0.664	0.058		
Flexibility Cronbach's alpha = 0.706	The company doesn't allows employees flexible working hours.(F1)	0.742	0.550	0.052	0.75	0.65
	The company sponsor activities outside the company (for example: football, futsal, volleyball competition) in order to build community spirit.(F2)	0.846	0.716	0.060		
	Information sharing between inter-department is encouraged.(F5)	0.836	0.698	0.059		

Table 4: continued

Construct	Item	Standardized Factor Loading	Variance	Error	Scale Composite Reliability	Average Variance Extracted (AVE)
Innovation Cronbach's alpha = 0.715	Most of our employees take advantage of government training programs.(I1)	0.754	0.569	0.053	0.80	0.63
	Government training programs doesn't increase employees' abilities to perform their jobs.(I2)	0.795	0.633	0.056		
	Individual decision is frown upon by the company's management.(I3)	0.851	0.724	0.060		
	Employees are involved in process improvement plan.(I4)	0.777	0.603	0.055		
Market Sensitivity Cronbach's alpha = 0.748	The company's selection practices focus on the compatibility of the individual with the culture of our company.(M1)	0.825	0.680	0.058	0.86	0.65
	When selecting employees, the company evaluate their suitability to the client's requirements.(M2)	0.779	0.607	0.055		
	Customer's demand doesn't affect our employee selection.(M3)	0.811	0.657	0.057		
	The company tends to evaluate job applicants based on their ability to do tasks at work directly with less supervision.(M4)	0.823	0.677	0.058		
	When interviewing applicants, the company mainly evaluate the extent of their ability to work with employees who are currently in the company.(M5)	0.824	0.678	0.058		
	We look for the best resources (such as top graduates) in order to get the best talents.(M6)	0.780	0.609	0.055		
Service Level Cronbach's alpha = 0.755	The company is making efforts to introduce new service to enhance customer satisfaction.(SL1)	0.835	0.697	0.059	0.83	0.63
	The company always devises new methods to provide its products and services.(SL2)	0.758	0.575	0.054		
	The customer rating / survey doesn't reflect the true quality of our service.(SL3)	0.846	0.715	0.060		
	The Company is significantly interested in the quality of services provided to customers.(SL4)	0.810	0.656	0.057		
	The company doesn't make a clear effort to please its customers.(SL5)	0.695	0.483	0.049		

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From the Table 4, the standard loading was in all cases greater or very close to 0.7 with considerable high t values ($p<0.01$) and composite values of constructs were all above 0.7. Goodness of fit and best practices for our model are Root Mean Square Error of Approximation (RMSEA) = 0.02, PCFI = .91, GFI = .85, CMIN/DF = 3.07 which met the admissibility threshold set by past research RMSEA < 0.05 (Cheung & Rensvold, 2002; Steiger, 1990), CMIN/DF = 1 – 5 (Brown, 2006; Kline, 2014). The average variance extracted (AVE) of constructs were also greater than 0.6 in all cases. These also met or exceeded the minimum threshold value suggested by Hair, et al., (2010) and Hu & Bentler (1981). Therefore, the measurement construct had convergent validity.

We further operationalized our theoretical measurement framework by using average variance extracted. Larcker (1981) and Richard P. Bagozzi (1991) show that when the square root of average variance is greater than the correlation matrix, the measurement framework shows good model fit (Table 5)

Table 5: Discriminant Validity

	X1	**X2**	**X3**	**X4**	**X5**	**X6**	**X7**	**X8**
Quality	**0.825***							
Cost	0.406	**0.812***						
Speed	0.262	0.449	**0.812***					
Process Integration	0.360	0.295	0.018	**0.806***				
Flexibility	0.112	0.208	0.406	0.171	**0.806***			
Innovation	0.145	0.061	0.279	0.204	0.058	**0.794***		
Market Sensitivity	0.211	0.136	0.068	0.098	0.125	0.051	**0.806***	
Service Level Optimization	0.358	0.375	0.025	0.098	0.329	0.338	0.244	**0.794***

*(* $\sqrt{AVE}$)*

CONCLUSION

This study has demonstrated that customer's expectation of performance could be achieved with the application of a hybrid lean-agile model in the BPO industry. The validity of the performance measurement framework in this study incorporates non-metric measures (intangible measures), which extended previous research where BPO service organization performance was examined solely on metrics (Cho, Lee, Ahn, & Hwang, 2012). The importance of incorporating agile non-metric variables to measure performance is significant because the value chain begins with the customer's interpretation of satisfaction.

The subjectivity of various elements in customer satisfaction scores as a measure of performance further strengthen the contingency theory. This is because the business environment in which a BPO service organizations operate is dynamic and requires that they continuously evolve, striving for zero defect in delivering processes and incorporating competitive organization strategy for effective and efficient performance.

In addition, this study has demonstrated that BPO service organizations could improve their performance by re-evaluating how internal procedures are structured to allow for flexibility. This study revealed that majority of the employee are not adequately satisfied with the way their organization's processes are structured. These include employee remuneration, employee performance benefits & appraisal and employee job description. The findings of this study are similar to past research in BPO service organizations where employee turnover is very high due to the work environment and organization culture (Rod & Ashill, 2013).

This study has also shown that company's effectiveness is the extent to which customers' requirement is met while efficiency measures how economically the firm's resources are utilized to produce a given level of customer satisfaction. Aligning this to BPO service industries, performance measurement is, therefore, the process of quantifying the effectiveness and efficiency of action performed by individuals toward the customer. Hence, organizations that wish to perform well must be effective and efficient in managing its functions toward the end users (optimal service level). It can thus be said that efficiency is the economical utilization of a firm's resources to achieve effectiveness. On the other hand, the quality of the work done under

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supervision is negatively affected by the employee's innovative capabilities. This is evident in the loading of the Q5 as compared to I4. Innovation is as a result of creativity with less supervision. The lower factor loadings of Q4 indicate that for a BPO company to achieve good quality performance measures, there is need to adopt a more flexible approach. BPO company should implement and encourage effective communication strategy between the teams.

Additionally, the business of an outsource company is people's business. Hence, BPO companies should be more concern about customer's experience and follow through on promises. BPO companies could achieve this by having a weekly schedule of routine calls to customer, proper documentation of customer's concern, creating value that transcend lip service. Over the years, there has been a gap in customer's perception and experience. The only way to reduce such gap is to provide a platform for customer's voice to be heard. Incorporating feedback element into the process chain will go a long way to reducing this gap.

Furthermore, multinational companies outsourcing their operation to other countries believed that by turning their fixed cost to variable cost they could be able to compete better; have strong market positioning, reduce cost and become more innovative. However, this study revealed a turning point. The number of items in innovation declines simply because the BPO service organizations work with predefined performance metrics. Whereas, innovation is a creative endeavor, which implies that creativity is inherently unpredictable and un-plannable.

Since this study adopted a mix method, the metric measurement of this study could be further expatiated with the use of structural equation modelling.

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