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DEVELOPMENT OF PERFORMANCE MODEL FOR QUALITY AND PROCESS IMPROVEMENT IN BUSINESS PROCESS SERVICE INDUSTRY

Abstract: When it comes to performance improvement process, literature abounds with lean, agile and lean-agile. Over the years, the implementation of the improvement processes of lean and agile had met with resounding success in the manufacturing, production, and construction industry. For this reason, there is an interest to develop a performance process for business process service industry incorporating the key aspect of lean and agile theory extracted from the extant literature. The researcher reviewed a total of 750 scholarly articles, grouped them according to the relationship to central theme – lean or agile, and thereafter uses factor analysis under principal component method to explain the relationship of the items. The result of this study showed that firms focusing on cost will minimize the investment of resources in business operations this, in turn, will lead to difficulties in responding to changing customer's requirements in terms of volume, delivery, and new product. The implication is that on the long run cost focus strategy negatively influence flexibility.

Keywords: Outsourcing, Factor loading, Globalization, Asian countries, sourcing

1. Introduction

Countries like India, China and Malaysia have been the top destinations for business process outsourcing. According to the Multimedia Development Corporation Malaysia (MDeC), there has also been an upsurge growth in numbers of companies established every year in Malaysia Business Process Service industry (BPO) because of friendly government policy and cost advantage. Through government support and private investment, there are over 300 multinational companies operating as an outsourced business process in Malaysia. Multimedia Development Corporation Malaysia Report (2015) showed that there were more than 83,000 jobs created within the Shared Services and Outsourcing Sector.

Nevertheless, outsourcing business operation often ignites considerable controversy and debates. These controversies are mostly linked with the quality of service performed by the outsource locations (Aguezzoul, 2014), employee selection (Narayanan et al., 2011), management culture and performance appraisal (Araz et al., 2007). In many instances, companies in western countries have had to use offshore locations for their front office business process because of a

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shortage of skilled labor and low labor cost.

In the wake of the global financial crises in 2007-2008, customer perceived value for product and services are now greatly influenced by it's psychological and social advantages (Wagner and Kemmerling, 2014). While explaining the relationship of customer's need to business process outsource Wagner and Kemmerling (2014) pointed that 'customer's changing attitudes are pushing businesses to rethink their strategies, and those that are able to stand up to the challenge are taking advantage of it'. For instance, customers are increasingly looking for a responsive company, a company that can meet their immediate needs. Thus, "The market is now dominated by uncertainty and unpredictability" concludes Wagner and Kemmerling (2014). One of such uncertainty is the repatriation of offshore business process location from countries in South East Asia because the BPO companies are not able to meet up with performance expectation. As estimated, if that happens in Malaysia, more than 103,000 peoples will be jobless hence it is extremely important that the business process service industries strengthen their performance effectiveness and efficiency in order to retain their spot in the global market.

With the growth in business operation, companies are responding to the global needs by implementing strategies such as lean methodology in order to retain their competitiveness. Consequently, as outsourcing and offshoring operations grow, supply chains become geographically dispersed and exposed to various types of risks. One of such risk is the fear of failure (Franca et al., 2010). According to Franca et al., (2010) "when performing activities internally, companies believed that they can exercise greater control over an internal function and there is less chance of failure". It thus suffices to say that a performing business process outsourcing is one that adapts to changes, implement strategies and follows through. For this reason, there is an increasing interest to develop a performance model for a sustainable business process service industry. The aim of this study is to create a lean-agile performance measurement model for BPO industry.

For easy understanding, we divided this paper into 3 sections. The next part discusses the operational and conceptual usage of lean and agile performance measurement. The result section reports the result of covariance and factor loading for all construct and the last section discusses the practicability and future areas of this study.

2. Lean and agile literature review

In getting our empirical finding we use available databases such as Ethos, DiVa, ProQuest, EBSCO host, Wiley, Taylor & Francis, Emerald, and Science Direct. Noteworthy, a teeming number of scholars alludes that the performance metrics are embedded in a contractual text known as the service-level agreement. Deokar and Sen (2014) defines it "as a document that cross check the interplay of various process elements (e.g., activities, resources, events) with key performance indicators". However, measuring key performance indicator could be challenging with the advent of green technology (Garza-Reyes et al., 2014) and in other cases with the dispersed geographical location of business process service (Liu and Aron, 2015).

The following keywords were used: 'lean measurement', 'lean assessment', 'lean evaluation', 'lean appraisal', 'lean performance', 'measuring lean performance', 'lean performance measurement' 'lean framework' and 'lean performance framework. It is unarguable that lean and agile manufacturing have been used to enhance the efficiency and effectiveness of manufacturing and software industries. In practice, these are largely achieved through the use of metrics in a Lean business environment to measure efficiency and effectiveness. However, prompted by the abuses of metrics to

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measure effectiveness and efficiency Schonberger (2011) examines five companies to demonstrate how inventory should be equivocal as an upper-management-level marker of lean effectiveness. Schonberger research result shows that Lean's dominant purpose should be seen as cycle-time (wait-time) reduction, which - counted in units of inventory, its close relative - is visually prominent and easily measured at low (efficiency) levels and high (effectiveness) levels in the hierarchy.

On the contrary, other scholars believed that lean manufacturing should be used to reduce variation (Zammori et al., 2011), measure effectiveness and efficiency (Mohammed et al., 2010). Consequently, Stadnicka and Antosz (2015) opined that for a successful performance improvement process, the organization must involve employees at the very first stage. Successful implementation of lean manufacturing has produced an outstanding result. Freire and Alarcón (2002) report up to 58% decrease of waiting time in the process and an expansion of utilization in cycle times.

Due to the dispersed geographical location of business process outsource, the reviewed literature indicate that there are enormous gap in performance metric measure in process integration due to inadequate individual involvement. Lack of flexibility on operational procedures, market sensitivity in business process outsource environment and lack of individual improvement initiatives have all dealt a death blow on effective performance evaluation in BPO business environment.

On the other hand, scores of scholars have reviewed Agility with respect to companies in the software industry. It has been defined with respect to the agile enterprise without much to the BPO industries (Costantino et al., 2012; Yusuf et al., 2003). Gligor et al., (2015) analyze products, workforce, and capabilities with respect to the agile industries.

Agile improvement process describes how an organization should prepare for uncertainty by becoming flexible with speed and high level of responsiveness. In the words of Zäschke et al., (2015), "agile methods promote iterative development with short cycles, where user feedback from the previous iteration is used to refactor and improve the current version". Flexibility for BPO industries thus implies responding to customer demand almost in real time and yet maintain 100% quality.

2.1. Transaction Cost Economics Theory (Cost)

In this study, cost performance function is examined from the perspective of transaction cost economy theory (TCE). TCE is the most widely used outsourcing theory which provided the best way to measure the cost of decision, cost of organizational changes, the cost of location selection and cost of supplier selection. However, TCE as a measure of cost has often been criticized as to its non-practicability for long term planning (Angappa Gunasekaran et al., 2014). The unsuitability of short-term planning to cost approach arises from the cost of relocating services and the information technology to support such services overseas. Hence, on a long-term, multinational companies need to incorporate the cost function of outsourcing their business by measuring the return on investment after outsourcing, financial support from the government (if any), the value of goods/services sold and a comparative analysis of competitors.

2.2. Core Competency Theory (Service Level and Speed)

A core competency is a concept in management theory introduced by Prahalad and Hamel (1990). Prahalad and Hamel (1990), defined it as "a harmonized combination of multiple resources and skills that distinguish a firm in the marketplace". Core competencies fulfill three criteria:

- Provides potential access to a wide variety of markets (Prahalad and Hamel, 1990).
- Should make a significant contribution to the perceived customer benefits of the end product (Prahalad and Hamel, 1990).
- Should be difficult to imitate by competitors (Prahalad and Hamel, 1990).

The main focus of this theory is to determine the success of an agreement between the supplier and the vendor. Noteworthy, a teeming number of scholars alludes that the performance metrics of a BPO service company are embedded in a contractual text known as the service-level agreement (SLA) which are although voluminous (Deokar and Sen, 2014) but of extremely important for business continuity (Tucker, 2015). Deokar and Sen (2014) defines service level agreement "as a document that cross check the interplay of various process elements (e.g., activities, resources, events) with key performance indicators (KPIs)". However, measuring key performance indicator could be challenging with the advent of green technology (Jose Arturo Garza-Reyes, et al., 2014) and in other cases with the dispersed geographical location of business process outsource (Liu and Aron, 2015).

This difficulties gives rise to an important question on waste management in the global business sector. Core competency perspective help companies to leverage their employees' responsibilities with the clients' requirements as documented in the SLA. However, as often the case in the business environment, caution has to be taken because an unguided implementation of terms in the SLA will result to mechanical approach without much modularity thereby affecting processing time (Deokar and Sen, 2014; Tucker, 2015).

2.3. Resource Base Theory (Flexibility and Innovation)

Barney and Hesterly (1996) opined that resources and capabilities can differ significantly among organizations and that these differences remain stable. A balance and strategic application of available resources and capabilities will create a competitive advantage for the enterprise. The resource-based perspective has proven useful for analyzing cost impacts on firms' innovative capabilities (Grimpe and Kaiser, 2010; Nieto and Rodríguez, 2011). Over the years, there has been a different perspective on the proper use of resource base theory. One strand of literature emphasizes the importance of offshoring for tapping into new knowledge sources (Bardhan et al., 2005; Barthélemy and Quélin, 2006; Maskell et al., 2007) and benefiting from complementarities between different knowledge sources (Cassiman and Veugelers, 2002). However, it has also been argued that outsourcing knowledge activities weaken internal resources and reduce their productivity due to a loss in absorptive capacities (Grimpe and Kaiser, 2010; Helfat and Raubitschek, 2000) which leads to the downgrading of onshore capabilities (Baier et al., 2015). Therefore, when considering outsourcing of business operation, organizations should create a flexible working environment in order to improve employee participation and innovativeness.

2.4. Knowledge Base Theory (Process Integration)

At the outset of globalization era, companies outsourcing their business operation did so in order to tap the offshore resources while little attention is given to knowledge management. Admittedly, Grant (1996) opined that the resource-based perspective does not go far enough. Specifically, knowledge base theory emphasizes that knowledge should be treated as a generic resource, rather than having special

characteristics. This shortcoming led to the development of the knowledge base theory. The knowledge base theory distinguishes between different types of knowledge-based capabilities and provides an understanding of how individuals cooperate to produce goods or to provide services. Sakas et al. (2014) categorize this to two namely: knowledge generation and knowledge application. The application of knowledge-based view to outsourcing is to demonstrate that knowledge-sharing is positively related to performance in volume and services.

To buttress this Chen et al. (2013) examines the effect of effective knowledge transfer and knowledge building on overall performance of an outsource company with a result similar to Han et al. (2008); Law and Ngai (2008) research which shows that employees are better equipped to perform their daily duties when processes are well communicated to them, when they are part of the process planning and when their contributions are included.

2.5. Complexity Theory (Market Sensitivity)

Complexity theory found its root in the uncertainty and non-linearity of the market. Changing customer's attitude toward a brand, mounting pressure to keep up with technology advancement and new customer specification or wants are pushing business to constantly evolve. The feedbacks from the business environment are an important feature to determine the performance effectiveness. Moving beyond the view that costs and benefits of offshoring primarily emerge through impacts on internal (knowledge-related) resources, some recent contributions have stressed organizational features such as changes in managerial complexity and an organization's ability to effectively adapt to changes in the environment as another important challenge (Baier et al., 2015; Han et al., 2008; Law and Ngai, 2008). Hence, market sensitivity effect on cost and service level should be of

concern to the global business organization when measuring performance effectiveness.

2.6. Contingency Theory

According to the advocates of contingency theory, firm's performance is affected by three variables: environment, strategy, and organizational design (Boyd et al., 2011; Mintzberg, 1979; Neu, 2005; Wadongo and Abdel-Kader, 2014). To achieve good performance, organizations need to react appropriately to these variables. More than ever, it has become evident that the BPO sector as part of the service industry is characterized by intangibility and variability due to customer's demanding nature. This implies that there must be a responsive strategy to improve performance. In the same direction, the development of lean production is brought about by the need for operational excellence.

Lean manufacturing has been defined as a collection of operational techniques that focuses on productive use (no waste) of resources, to reduce internal and external variability which are produced along the supply chain (Štefanić et al., 2010). Shah and 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". Extending this definition, Lakhe (2008), identified 4 variabilities which are evident in the 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. Agile, on the other hand, is an overall strategy that focuses on thriving in an unpredictable market environment (responsiveness). Based on these views, the researcher infers that both lean and agile are closely related and could be useful in examining the performance of a BPO service organization.

3. Method and analysis

In order to test the homogeneity of the items and its dimension in measuring each domain of the model, we conducted construct reliability, convergent, and discriminant validity.

3.1. Questionnaire design

The questionnaire was designed to collect data based on the identified eight categories of our model. The questionnaire is divided into two parts. The first part consisted of items related to demographics. The second part of the questionnaire consisted of items related to eight constructs synthesized from the literature review. A pilot study was conducted with 30 participants with similar characteristics of our intended respondent. This allows the researcher to understand the homogeneity and reliability of each question. The respondents from the pilot study were also given the opportunity to add/delete any question which doesn't harmonize with the domain/construct. This study adopted questionnaire design method advocated by Renninger and Hidi, (2011) and Rotgans, (2015). Multi-item questions of at least 6 items were used for each construct for effective measurement and analysis (Haidari et al., 2016).

3.2. Questionnaire design

Data collected were through an electronic survey and personal hard distribution. The researcher emailed the questionnaire to our respondent in BPO industries comprising of procurement, finance and accounting, training, human resource, and customer relationship management with an initial population size of 397 companies under the Malaysian multimedia development corporation. The data collection mode was according to the 4th edition on total design method (Dillman, 2014). Depending on the preference of the potential respondent, surveys were answered via e-mail, fax or mail. Overall, we received 200 complete and usable responses. The returned response represents 50% (approx.) of the total targeted respondents.

The respondent result shown in Table 1 indicates 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 was the top management. 33% of the returned filled questionnaire have spent over 10 years in the industry while 28% in the customer call center on average of between 250 - 500 employees.

Table 1. Demographics 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

Table 1. Demographics of Respondents (continued)

	No of respondents	% of respondents
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

Our questionnaire covers the different aspect of business process service 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.

3.3. Nonresponse bias

As proposed by Armstrong cited in Dubey and Gunasekaran (2014) 'nonresponse bias measures the difference between the answers of respondents and late respondents'. To provide support for nonresponse bias, the researcher conducted wave analysis test to check the significance of nonresponse bias (Lambert Douglas and Harrington, 1990). The data were divided into two halves. The first set represents early wave and the second set represents a late wave. Thereafter, a t-test analysis was performed to check if the difference is significance. The test showed that p>0.05, which indicates that there is no significance. Hence, nonresponse bias is not a major issue in our study.

3.3. Data analysis

The analyses were carried out with SPSS 22 software. The data were also tested for distribution 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 et al., 1996; Dubey et al., 2015).

Table 2. Standard loading, Variance, Scale Composite Reliability and Average Variance of Item

Construct	Item	Standardized Factor Loading	Variance	Error	SCR	AVE
Quality Cronbach's alpha = 0.739	The company compares the performance of employees who perform similar work.(Q2)	0.81	0.658	0.057	0.86	0.68
	The company uses a high proportion of managers and supervisors when compared to other companies.(Q3)	0.80	0.642	0.057		
	The managers and supervisors use a predefined checklist for performance appraisal.(Q4)	0.77	0.587	0.054		
	The managers monitor accurately the speed and the schedule that must be accomplished by the agents.(Q5)	0.86	0.744	0.061		
	The managers directly control the daily activities of the agents.(Q7)	0.80	0.647	0.057		
	The company uses the results of performance appraisal only to assist in employee skill development.(Q8)	0.84	0.711	0.060		
Cost Cronbach's alpha = 0.723	The earning of this company increased from last year.(C1)	0.86	0.732	0.061	0.86	0.66
	This company has achieved the expected level of sales/services.(C2)	0.75	0.568	0.053		
	The handling time doesn't have effect on cost performance.(C3)	0.82	0.673	0.058		

Table 2. Standard loading, Variance, Scale Composite Reliability and Average Variance of Item (continued)

Construct	Item	Standardized Factor Loading	Variance	Error	SCR	AVE
Cost Cronbach's alpha = 0.723	This company doesn't benefit very much from government financial assistance because many reservations impose upon it which restricts our activities and decisions.(C4)	0.82	0.666	0.058		
	The financial aid empowers this company to introduce new techniques and adopts advanced work methods, which lead to improving the organizational performance.(C5)	0.92	0.846	0.065		
	The assistance that this company gets from the government is just financial.(C6)	0.78	0.609	0.055		
Speed Cronbach's alpha = 0.729	I consider the completion of my work the most important thing for me.(S1)	0.82	0.668	0.058	0.86	0.66
	The company provides good opportunity and platform to multi-task.(S2)	0.74	0.540	0.052		
	As much as possible I try to meet all the demands of customers within first 10 min.(S3)	0.84	0.704	0.059		
	I believe that providing good service and at an appropriate time is something important in my work.(S4)	0.83	0.683	0.058		
	Escalation of cases to other team affect my processing time.(S5)	0.81	0.650	0.057		
	Excessive workload doesn't affect my performance rate.(S6)	0.85	0.723	0.060		

Table 2. Standard loading, Variance, Scale Composite Reliability and Average Variance of Item (continued)

Construct	Item	Standardized Factor Loading	Variance	Error	SCR	AVE
Process Integration Cronbach's alpha = 0.781	I don't really feel that the company's problems are my problems.(P2)	0.76	0.573	0.054	0.86	0.65
	I help to guide new employees in the company.(P3)	0.82	0.680	0.058		
	I always offer important information to other colleagues in my section.(P4)	0.83	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)	0.80	0.641	0.057		
	The company provides good compensation for the best employee.(P6)	0.81	0.662	0.058		
	Customer feedback is cascaded to the team members for the improvement plan.(P7)	0.81	0.664	0.058		
Flexibility Cronbach's alpha = 0.706	The company doesn't allows employees flexible working hours.(F1)	0.74	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)	0.85	0.716	0.060		
	Information sharing between inter-department is encouraged.(F5)	0.84	0.698	0.059		
Innovation Cronbach's alpha = 0.715	Most of our employees take advantage of government training programs.(I1)	0.75	0.569	0.053	0.80	0.63
	Government training programs don't increase employees' abilities to perform their jobs.(I2)	0.80	0.633	0.056		

Table 2. Standard loading, Variance, Scale Composite Reliability and Average Variance of Item (continued)

Construct	Item	Standardized Factor Loading	Variance	Error	SCR	AVE
Innovation Cronbach's alpha = 0.715	Individual decision is frown upon by the company's management.(I3)	0.85	0.724	0.060		
	Employees are involved in process improvement plan.(I4)	0.78	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)	0.82	0.680	0.058		
	When selecting employees, the company evaluate their suitability to the client's requirements.(M2)	0.78	0.607	0.055		
	Customer's demand doesn't affect our employee selection.(M3)	0.81	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)	0.82	0.677	0.058	0.86	0.65
	When interviewing applicants, the company mainly evaluate the extent of their ability to work with employees who are currently in the company.(M5)	0.82	0.678	0.058		
	We look for the best resources (such as top graduates) in order to get the best talents.(M6)	0.78	0.609	0.055		

Table 2. Standard loading, Variance, Scale Composite Reliability and Average Variance of Item (continued)

Construct	Item	Standardized Factor Loading	Variance	Error	SCR	AVE
Service Level Cronbach's alpha = 0.755	The company is making efforts to introduce new service to enhance customer satisfaction.(SL1)	0.84	0.697	0.059	0.83	0.63
	The company always devises new methods to provide its products and services.(SL2)	0.76	0.575	0.054		
	The customer rating / survey doesn't reflect the true quality of our service.(SL3)	0.85	0.715	0.060		
	The Company is significantly interested in the quality of services provided to customers.(SL4)	0.81	0.656	0.057		
	The company doesn't make a clear effort to please its customers.(SL5)	0.70	0.483	0.049		

As shown in Table 2, the standard loading was in all cases greater or very close to 0.7 with considerable high t values (p<0.05) 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) = 0.07, Degree of Freedom (df) = 90, Chi-Square (X^2)=1362.479, likelihood ratio (X^2/df) = 1.5 which met the admissibility threshold set by past research RMSEA < 0.08 (Cheung and Rensvold, 2002; Steiger, 1990), X^2/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 and Bentler (1981). Therefore, we can assume that convergent validity exists in our theoretical framework.

The researcher further operationalized the theoretical framework by using second-order constraint constructs. Larcker (1981) and Bagozzi (1991) suggested a comparison of multiple correlations of all variables with the squared average variance (Table 3).

Table 3. 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***

Note: * = square root of average variance

4. Model and measurement Specification

The CFA model of Lean-agile structure hypothesizes a priori that (a) responses to the lean-agile performance method can be explained by eight factors: Q(Quality), C(Cost), S(Speed), P(Process Integration), F(Flexibility), I(Innovation), M(Market Sensitivity) and SL(service Level); (b) each item has a nonzero loading on the factor it was designed to measure, and zero loadings on all other factors; (c) the 8 factors are correlated, and (d) the error/uniqueness terms associated with the item measurements are uncorrelated (Figure 1).
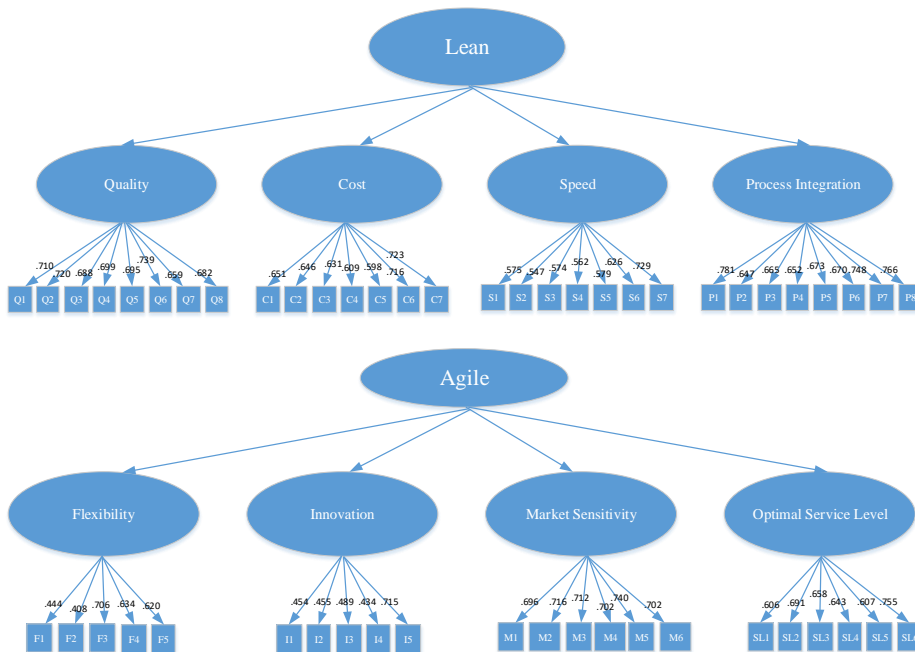

Figure 1. Latent as explained by factor loadings

5. Discussion and conclusion

Business Process Outsourcing is a global phenomenon that has changed the way businesses operate and thus leverage their resources toward optimal service realization. Out of the initial 48 items in the questionnaire, only 42 was relevant and clear after expert review and pilot study analyses.

The no of items in innovation and flexibility decline simply because of the predefined metrics that governs the business process service. Whereas, Innovation is a creative endeavor, which implies that creativity is inherently unpredictable and un-plannable. This study showed that firms focusing on cost will minimize the investment of resources in business operations this, in turn, will lead to difficulties in responding to changing customer's requirements in terms of volume, delivery, and new product. The implication is that on the long run cost focus strategy negatively influence flexibility (Figure 1).

As "performance evaluation" becomes a concept familiar to the practitioners and academicians alike, literature abounds in extolling the benefits of continuous improvement. However, the majority of this extant literature is descriptive, lacking solid theoretical basis. Particularly lacking is a validation of performance evaluation in the business process service industry. In order to narrow this gap, this present paper had examines how the interrelationships among the existing theoretical performance and operation evaluation pointers in the lean and agile environment could be maximized to provide a solid appraisal for business operations in the service industry.

To enhance performance effectiveness, service organizations should ideally strive for zero defects in servicing customers. The view that customer's loyalty depends primarily on rendering quality and responsive service is supported by Kadłubek and Grabara (2015). Hence, this paper makes a contribution to both theoretical literature

and practical application in the industry. The homogeneity of the items in each of the construct is further attested by the construct validity. Construct validity is "the degree to which instruments truly measure the constructs which they are intended to measure" (Peter, 1981) which oftentimes are divided into two discriminant validity and divergent validity. Churchill (1979) argues that a measurement item is said to pass convergent validity when it correlates highly with other items in the same construct. On the other hand, discriminant validity exists in a measurement item when the items are distinct in nature and not just simply a reflection of some other items or variables in the same construct.

A closer look at the correlation coefficient also indicates that (1) the quality of services performed are greatly influenced by the flexibility and innovative capabilities. For every 11% variation in flexibility will account for about 82% drop in quality. The same is true of innovation; (2) cost correlate highly with speed indicate that as much as multinational companies wish to minimize cost, they are also increasing their service response time. This is supported by previous research in the production industry (Gunasekaran et al., 2014). The internal effects of speed have much to do with cost reduction. There are two areas where speed reduces cost (reducing inventories and reducing risks).

Furthermore, previous theories (Gannage, 2009; Tenner and DeToro, 1992) in the business process service sector have opined that 'continuous improvement of agile paradigms cannot be applied to the intangibles of the sector' and with the recent extolling literature on automation it is becoming harder for service industry to adopting agile methodology. However, as the global economy continue to shift to a service-oriented market there is pressing need to focus on service performance enhancement. For future research, the researcher suggests a using a decision-making technique to examine the implication

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of implementing this hybrid performance measurement in an automated business process environment. Another area will be to statistically predict the critical success factor of companies in a BPO industry across different location using a structural modeling technique.

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