

Differential effects of competency due to BPO and KPO industry differences in ITES sector in Sri Lanka

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Citation:

Wickramasinghe, V., & Kumara, S. (2009). Differential effects of competency due to BPO and KPO industry differences in ITES sector in Sri Lanka. Career Development International, 14(2), 169-185.

This Version is available at: doi: 10.1108/13620430910950764

Abstract

Purpose- The purpose of the study was to identify competency requirements that discriminate between ITES-BPO and KPO industries.

Design/methodology/approach- There are 25 firms operating in Sri Lanka that fall into the category of ITES-BPO/KPO. HR managers of the 25 firms and a random sample of 117 employees from those 25 firms responded to the survey. In addition to descriptive statistics, independent sample t-test and logistic regression were used in the data analysis.

Findings- There are differences in competency requirements for KPO and BPO services. Further, demographic variables, namely, age, the level of education, and total years of industry experience shape competency requirements.

Originality/value- Despite greater volume of theoretical foundations and empirical evidence for people management in BPO/KPO services, specific literature investigating and comparing competency requirements, recruitment, selection and training of ITES-BPO and KPO employees is scarce. Therefore, a research addressing those in a South Asian country that is considered as active and promising destination for ITES-BPO/KPO services could provide practitioners with key information that could enable them to make informed managerial decisions.

Keyword(s): BPO, competency, KPO, recruitment, selection, Sri Lanka, training.

Paper type: Research paper

Introduction

There is a growing tendency of Western countries (the USA, Canada, Europe, etc.) to outsource various business processes from low cost call centres to knowledge intensive value added services. The business process outsourcing (BPO) industry is evolving rapidly, and one of the key trends in BPO industry is a number of providers moving up the value added chain and engaging in knowledge process outsourcing (KPO) services (Ramachandran and Voleti, 2004; Raman *et al.*, 2007; Sen and Shiel, 2006). The processes that can be outsourced can be classified into information technology (IT) enabled and others. IT-enabled business process outsourcing/knowledge process outsourcing (ITES-BPO/KPO) services are the services that can be outsourced using the powers of IT. As much of the studies have been carried out to understand the impact of BPO/KPO in terms of the economy, workforce and human resource management (HRM) practices on client western countries (Borman, 2006; Farrell, 2005; Marin, 2006) and consequently, Asian developing countries, where BPO/KPO sector is evolving rapidly, make for an interesting area of study.

In South Asian countries, the phenomenal growth of ITES-BPO/KPO firms has resulted in extensive opportunities as well as challenges for HRM. ITES-BPO/KPO sector represents a reflection on the changes towards the service economy. On one hand, ITES-BPO/KPO firms employ a large number of workers within a particular firm. On the other hand, ITES-BPO/KPO firms share some characteristics with the knowledge economy as they rely heavily on technology as a complementary production factor alongside the workforce (Dormann and Zijlstra, 2003). The growth of ITES-BPO/KPO sector in Asian countries created expectations about its potential for job creation due to its work-intensive nature. However, sustainability of the growth of the ITES-BPO/KPO sector depends on healthy supply of skilled manpower. Especially, when providers of these services are either moving up the knowledge intensity value chain with existing clients or are entering new opportunities in specific industries such as pharmaceutical, legal and financial services (Sen and Shiel, 2006). Given the people-intensive nature of this industry, such strategic moves pose challenges related to recruitment, retention and the nurturing of appropriate talent (Budhwar *et al.*, 2006a; Sen and Shiel, 2006). In this regard, literature highlights that the nature of work in a KPO is somewhat different from that of a BPO. When capturing and capitalizing on individual capabilities, it is important to understand whether there are differences in the degree of importance given to different competencies by BPO and KPO services in satisfying the job demands that encounter. Literature also highlights that despite the large number of people entering the labour force every year there is a dissatisfaction with the supply of skilled personnel, who are low on quality and relevance (LIRNEasia, 2006; Raman *et al.*, 2007). Because of shortages, the hiring of new talent has become more expensive; due to high attrition rates in the sector training a replacement is becoming a critical problem (Raman *et al.*, 2007). Though there is abundance of literature in the Indian context on people management in BPO/KPO sector, specific literature investigating competency requirements and methods used to attract, select and train ITES-BPO and KPO employees is scarce. In the Sri Lankan context human resource development or any other people management issues in ITES-BPO/KPO sector are under-researched areas. From a practical standpoint, a research addressing those in a South Asian country is interesting, relevant and timely since practitioners could be provided with key information that could enable them to make informed managerial decisions in a country that is considered as active and promising destination for ITES-BPO/KPO work in the Asian region. Such analysis holds a number of implications for research on people management in ITES-BPO/KPO sector.

In the above context, this exploratory study was conducted to expand the understanding of differential effects of competencies due to BPO and KPO industry differences in ITES sector in Sri Lanka. The specific aims of the paper are: 1) to identify competency requirements that

discriminate between ITES-BPO and KPO industries, 2) to identify whether there are any interaction effect between demographic variables (such as age) and competency requirements of ITES-BPO and KPO employees, 3) to explore whether there are any differences in the methods used to attract, select and train ITES-BPO and KPO employees. Though the study is exploratory in nature it is expected that the findings will contribute to the literature on Asian ITES-BPO/KPO sector as the research setting is both progressive and international in nature and as the paper explores a timely issue while maintaining an international perspective of the Sri Lankan context situated in a global environment. In order to provide the context for the paper, in the next section, relevant literature is briefly reviewed. This is followed by the methodology adopted. Subsequently, the main findings are presented and discussed. The article concludes with a discussion on the implications of the findings and research areas for further inquiry and understanding.

Sri Lankan context

Economies around the world have become globally interdependent, introducing new forms of relationship between the economy, state and society. Sri Lanka, like other Asian countries, moves towards operating in a global market offering a liberal and dynamic business environment. In this regard, IT services are being seen as a way to achieve competitive advantage in the global market by the Sri Lankan governments (Flecker and Huws, 2003; World Bank, 2006). Due to government initiatives to promote ITES-BPO/KPO sector in the country, Sri Lanka has become one of the South Asian countries where ITES-BPO/KPO firms have been located.

LIRNEasia (2006) has conducted a study on “Baseline sector analysis of the BPO industry in Sri Lanka”. This is the only available study to date that analysed this important sector of the country. LIRNEasia (2006) defined a BPO receiver as “the act of outsourcing to a third party the responsibility of running a business process that would otherwise be conducted internally. The receiver of the outsourced process administers the process based on a defined and measurable performance matrix. The receiver is also an independent legal entity maintaining its own accounting systems” (p4). LIRNEasia (2006) identified 25 ITES-BPO/KPO firms operating in Sri Lanka that come under the above definition in their study. The total number of employment in these firms are slightly higher than 4000 and employment is expected to increase by around 30% during 2006-2007 due to the expansions of existing firms and new entrants (LIRNEasia, 2006). The median workforce size of the firms is 62. Over half (59%) the persons employed in these firms are between the ages of 18-24. Fifty one per cent of the employees have an Advanced Level certificate as their main academic qualification while 15% of the workforce comprise of graduates. The average annual employee turnover rate of the sector is 6%. Flexible employment contracts are

extremely rare in the sector as there are enough personnel available to work full-time. Although employment prospects are opening up in the sector, there are difficulties in attracting and retaining suitable personnel. According to LIRNEasia (2006), of the 25 firms, 43% of the firms expressed dissatisfaction with the supply of skilled personnel and 38% expressed dissatisfaction with the quality of available persons. All most all firms (95%) invest in training of employees to meet skill shortfalls (LIRNEasia, 2006). LIRNEasia (2006) and SLICTA (2007) highlight the importance of improving the supply of skilled personnel as a priority area that requires immediate attention for the competitiveness and growth of the sector.

Theoretical background

BPO and KPO organizations

Outsourcing refers to the practice of transferring activities traditionally done within a firm to third party providers within a country or “off-shore” (Sen and Shiel, 2006). BPO consists of the outsourcing of supply management (moving, storing, making and buying of goods and services), demand management (customer selection, acquisition, retention and extension), and certain enterprise services (human resources, finance and regulatory, IT and facilities management) (Sen and Shiel, 2006). One of the trends in the outsourcing industry is a number of providers moving up the value added chain and engaging in Knowledge Process Outsourcing (KPO), which are above the traditional BPO services. There are two categories of KPO, namely knowledge intensive and value added aspects of the older BPO, and new KPO opportunities (Sen and Shiel, 2006). Some of the main areas covered by the traditional BPO include help desk, sales support, medical transcription, insurance claims, inventory management, payroll, and credit-card services. Some of the knowledge intensive and value added areas of the older BPO can be identified as engineering and design, animation, market research, network consultancy and management, remote education, and content development. Some of the emerging KPO areas include intellectual property research, legal and medical research, R&D, equity research, and risk assessment and management (Ramachandran and Voleti, 2004; Budhwar *et al.*, 2006a; Mehta *et al.*, 2006).

Though literature highlights that there could be differences in the level of skill requirements for BPO and KPO services (Shah and Bandi, 2003), the existing literature contains few empirical studies that highlight human resource development (HRD), recruitment and selection of the ITES-BPO/KPO employees in the West as well as in Asia (Budhwar *et al.*, 2006a, 2006b; Raman *et al.*, 2007; Shah and Bandi, 2003). Though it is rare to find specific studies on competency requirements for BPO/KPO employees, available literature suggests that job applicants for BPO/KPO were screened for desired personal skills and competencies prior to the selection decision (Budhwar *et*

al., 2006a). Literature further suggests that though BPO/KPO firms rely on a variety of sources like advertisements, head hunters, job portals, fairs, internal employee referrals and walk-ins to attract potential candidates for entry-level jobs, there could be differences in the priority given for different methods by BPO and KPO firms (Raman *et al.*, 2007). Further, apart from refresher training, BPO/KPO employees are provided with regular formal training programmes and literature suggests that there would be differences in the priority given for different methods by BPO and KPO firms (Shah and Bandi, 2003). In the above context, there is a need to explore whether there are differences in the degree of importance given to different competencies by BPO and KPO services; whether there are differences in the priority given for methods used to attract, select and train ITES-BPO and KPO employees.

Competencies

Boyatzis (1982) adopted the term “competency”, plural “competencies”, which he described as an underlying characteristic of an individual that is causally related to effective or superior performance in a job. Boyatzis’s (1982) study concluded that there was no single factor but a range of factors that differentiated superior from average performers. These included personal characteristics, experience, motives and other attributes. Competency based approach puts the human being at the centre of attention and facilitate in the identification of needed competencies by a job role or project to meet current and future human resource needs in alignment with strategies and organizational priorities (Antonacopoulou and FitzGerald, 1996; Draganidis and Mentzas, 2006; Heffernan and Flood, 2000; Hondeghem and Vandermeulen, 2000; Rothwell and Lindholm, 1999; Schippmann *et al.*, 2000). Therefore, competencies has become the common language of the human resource system that enables an organization to match its human resources against the resources it needs (Woodruffe, 1991). In this regard, a key integrative concept has been that of occupational competence.

The identification of competencies has become an issue in HRD in any context. In many instances, a vague list of desirable competencies provided by policymakers or advocated by scholars is used as a guide in making crucial decisions on HRD programmes (Hansson, 2001). Therefore, from HRD viewpoint, it is important to know whether there are differences in the degree of importance given to different competencies by KPO and KPO services. Once required competencies were identified those could be enhanced through training and development or other measures, such as job enrichment, job content innovation, job redesign, or enhancement of the organizational climate (Bee and Bee, 1994; Goldstein, 1991). However, very often competency management is integrated with learning management systems (Bartram, 2004; Camuffo and Gerli,

2004; Hackett, 2001; Naquin and Holton, 2003; Reio and Sutton, 2006). Though this could be criticized because a competency requirement does not necessarily imply an adoption of a training and development solution, the link between competencies and training and development add tremendous value to users who can immediately see what they need in order to acquire required competencies (Homer, 2001; Jackson *et al.*, 2003; McClelland, 1994; Wright and Geroy, 1992). Based on the literature reviewed earlier, it could also be assumed that there would be differences in the priority given to different methods of training and development by BPO and KPO firms.

The competency literature also highlights the need of taking into account individual demographic variables in understanding competency requirements. Some of such demographic variables are type and level of the job, tenure, marital status, and the level of education (Agut *et al.*, 2003; Elkin, 1990; Saeed and Mahmood). For instance, Saeed and Mahmood (2002) identified gender differences in competency levels of Pakistani primary school teachers. Agut *et al.* (2003) found job tenure is positively linked to competency levels while age does not show any significant relation to competency needs of managers in Spanish hotel industry. Therefore, it could be assumed that competency requirements of BPO and KPO employees would be influenced by their demographic variables.

Data and Methodologies

LIRNEasia (2006) identified that there are 25 ITES-BPO/KPO firms operating in Sri Lanka. These 25 firms were considered as the population frame for this study. It was decided to survey all the 25 firms. Table 1 shows the characteristics of the firms. Majority of offshore firms has clients in the USA, followed by UK and Europe. BPO firms provide services mainly in customer care while KPO firms provide services in finance, medical, legal, planning and work study, and R&D.

INSERT TABLE 1 ABOUT HERE

For the study, data was collected from two sources- employees of the ITES-BPO/KPO firms and HR managers of the ITES-BPO/KPO firms. HR managers of the 25 firms were contacted to obtain information on methods used for recruitment, selection and training and development of employees. If there was no HR manager, the person who involves with personnel matters was contacted. Simple random sampling method was used to select employee sample. Due to time and cost constraints initial contacts were made with randomly selected eight employees in each firm (8x25) in September 2007. 121 respondents voluntarily responded within 4 weeks of initial questionnaire distribution. A total of 117 usable responses resulted in 59% response rate. The characteristics of the employee respondents are shown in Table 2.

INSERT TABLE 2 ABOUT HERE

Measures

To achieve the purpose of the study, the identification of competencies formed the foundation. Even after a comprehensive review of literature authors faced the difficulty of finding studies that differentiated specific job characteristics of variety of BPO and KPO services. Therefore, as an initial attempt it was decided to explore a common set of competencies that might be important for both BPO and KPO and to identify competency requirements that discriminate between ITES-BPO and KPO industries. In generating the list of competencies to be considered for the research, the methodologies adopted by recent competency research were studied (such as Agut *et al.*, 2003; Boyatzis, 1982; Camuffo and Gerli, 2004; Hansson, 2001; Tovey, 1994). For the study, Delphi method was used to identify competencies required by employees for BPO/KPO services. The Delphi method (Linstone and Turoff, 1975) is a group forecasting method that uses a panel, usually of 15-30 members, to address an issue over about three rounds, with feedback following each round, till group consensus is achieved. Hence, Delphi method utilizes qualitative approach rather than quantitative approach. Application of Delphi method was needed in this research because of the unknown territory of identifying competency requirements that has never been done before. In the study, one well-experienced upper-level manager from each of the 25 firms was contacted to participate in the panel. To come up with the final list of competencies two rounds were conducted with feedback following each round, till group consensus is achieved. For the purpose of the study, emphasis was given to generic competencies and those were defined broadly. Sample measures used are- “Creativity: ability to be original or inventive and to apply lateral thinking”; “Listening: focused attention in which key points are recognized”; “Written communication: clear reports, letters etc written specifically for the reader”; “Decision making: choice of the best option from a range of alternatives”; and “Team work: work constructively with others on a common task”. The final list comprised of 25 competencies and reflected the absolute minimum number of areas in which capabilities are required for BPO/KPO services (Table 3).

Self-evaluation method of personal competencies was used in the research as it plays an increasingly prominent role in education and training field (see- Camuffo and Gerli, 2004; Hansson, 2001; Kersh and Evans, 2005; Tovey, 1994 and 2006). The self-administered survey questionnaire was chosen as the mode for data collection. The design of the research is such that an

employee respondent makes a judgment on how important each of the 25 competencies in performing his/her job. The self-administered survey questionnaire employed a five point Likert type scale to establish requirement of each competency (1=very low to 5=very high). The questionnaire also collected demographic information of the employee respondents. The questionnaire was pre-tested with a random sample of 10 employees that fit with the intended sample of the study prior to the distribution. The pre-tested survey questionnaire after amendments was administered among the respondents. Participants were briefed the aims of the study prior to questionnaire distribution and their responses were anonymous.

Other than the above mentioned main questionnaire distributed to collect data from the employees another short questionnaire was designed targeting HR managers of the IEST-BPO/KPO firms. This questionnaire explored the methods frequently used in recruitment, selection, and training and development of employees. The questionnaire listed common methods used by the Sri Lankan private sector firms in recruitment, selection, and training and development of employees, which were identified by previous research (Akuratiyagamage, 2006; Wickramasinghe, 2007). Further, a tick box labelled “other” was also added to the list to enable respondents to state any other methods which were not offered by the questionnaire. This questionnaire also employed a five point Likert type scale (1= Least frequently used to 5= Most frequently used).

Methods of data analysis

Data was analysed using the software package for social sciences (SPSS). In addition to descriptive statistics, independent sample t-test, and binary logistic regression were used appropriately to explore differences across groups. Of the demographic variables, information on gender, marital status and the highest level of education were collected as categorical variables. Gender coded as Female=1 and Male=0, and marital status coded as Married=1 and Single=0. Information on the highest level of education was collected on four categories as shown in Table 2. However, when conducting the logistic regression and t-test, the number of categories was reduced to two (A/L or below=1, Higher Diploma/Degree=0) as few respondents fall into some categories. Information on age, tenure in the present workplace, and total years of work experience were collected as continuous variables. For the logistic regression, KPO is coded as “1” and BPO is coded as “0”. BPO/KPO sector was taken as the dependent variable and competencies as independent variables. Demographic variables were kept as control variables in the model to isolate the effect of competencies on BPO/KPO. Interaction terms were also added to observe any interaction effect between demographic variables and competency requirements. Forward stepwise Likelihood Ratio (LR) procedure was used to arrive at a final logistic regression model.

Results

The levels of competency requirements for BPO and KPO services along with the results of t-test are shown in Table 3. As that can be seen in Table 3, cost consciousness, listening, and time management rated as 1st, 2nd, and 3rd, respectively for KPO. Cost consciousness, and listening rated as 1st and 2nd respectively for BPO while both strong sense of work ethic and quality focus rated as 3rd for BPO. The results of t-test led to reveal that there are significant differences in the levels of competency requirements for BPO and KPO services in five competencies, namely, written communication, oral communication, team working ability, application of technology, and strong sense of work ethic. Of these five competencies, the level of requirement of oral competency is high for BPO; the levels of requirement of the rest of the four competencies are high for KPO. The differences in the level of competency requirements by demographic variables by KPO and BPO services are shown in Appendix 1 and Appendix 2.

INSERT TABLE 3 ABOUT HERE

The results of the logistic regression are shown in Table 4 and Table 5. Table 4 shows the logistic regression model at the final step (step 5). Nagelkerke R^2 was 0.491 suggesting that 49% of the variance in the dependent variable is explained by the covariates. P value of 0.857 of Hosmer and Lemeshow test ($.857 > 0.05$) at the final step suggested a good fit. The overall percentage of cases correctly classified at the final step is 75 (75.2%). Table 5 shows the changes in -2 Log-likelihood and their significance in the final model. It is evident from Table 4 and Table 5 that decision making, team working ability, strong sense of work ethic, application of technology, proactive thinking, and pressure management are important competencies that discriminate between the two types of outsourcing. For instance, the odds of an employee to be in an ITES-KPO (as oppose to ITES-BPO) industry with stronger work ethic is almost twice (1.84) as high. This suggests that ITES-KPO firms need employees with higher level of work ethic that for ITES-BPO. Further, application of technology, proactive thinking, and pressure management have important interaction effects between demographic variables- age, industry tenure, and the highest level of education, respectively- and competency requirements of ITES-BPO and KPO employees. These three competencies together with the respective demographic variable discriminate the importance between BPO and KPO sectors.

INSERT TABLE 4 ABOUT HERE

INSERT TABLE 5 ABOUT HERE

The methods used to recruit, select and train employees were obtained from the questionnaire distributed to HR managers. Appendix 3 shows a comparison of the most frequently used recruitment, selection and training and development methods by BPO and KPO firms. Job posting is rated as the most frequently used method of recruitment followed by advertising; the usage does not differ by the type of the firm- BPO or KPO. Selection interview rated as the most frequently used method for selection by both BPO and KPO firms. Learning from feedback given by superiors was rated as the most frequently used method for training and development by both KPO and BPO firms.

Discussion

ITES-BPO/KPO, which is a typical product of the service economy, constitutes one of the key drivers changing the face of Sri Lankan economy. Many believe that ITES-BPO/KPO sector will continue to grow creating numerous employment opportunities. Employees with relevant competencies are better positioned to succeed in today's ITES-BPO/KPO industry, and they will be equipped to evolve to the requirements for jobs in the future. The providers of ITES-BPO/KPO services are either moving up the knowledge intensity value chain with existing clients or are entering new opportunities in the high-end of KPO services. Given the people-intensive nature of this industry, a timely question to ask is "are there any competency requirements that discriminate between BPO and KPO industries?" In this paper we have attempted to address this question using quantitative methodology. To date, a limited number of studies have addressed issues of competency requirements for the ITES-BPO/KPO sector. Hence, the findings of the study could be used to assist in both organizations and individuals to identify effective strategies to address competency requirements for this important growing sector.

The findings of the study suggest that there are differences in the degree of importance given to some competencies by ITES-BPO and KPO. This has implications for HRD. BPO/KPO service providers, training institutes, policy makers, school leavers and new entrants to the labour force should pay attention to differential effects of competency due to KPO and BPO sector differences. Further, when firms plan to move up the value chain, organizational decision makers would be able to isolate the competencies that they have to develop in employees.

The integration of competencies in a person provides employee value. Therefore, people come under the category of qualified human resource for ITES-BPO/KPO services need to determine how they can remain competitive in the job market. In this regard, a combination of the right competencies can help them continue to add value. In this context, people who develop the most relevant competencies might find it easier for them to get jobs, retain jobs, switch jobs and quit. All such developments have implications for people management in ITES-BPO/KPO sector, which is primarily people-driven.

Further, it was found that some competency requirements are linked to some of the demographic variables. Age, the highest level of education, and total years of work experience have interaction effects between some of the competency requirements of ITES-BPO and KPO employees. In this regard, when self-reports accurately reflect an individual's competency requirements and as long as the profile of individuals is known along with their competency requirements, addressing those would not be difficult.

It is a challenge to identify and then attain appropriate personnel to work in ITES-BPO/KPO environment. Sri Lankan ITES-BPO/KPO firms draw talent from different sources. Different sources of recruitment reach different applicant populations and attract applicants who differ in qualities and attributes that may impact job performance and attitudes. When considering the methods of recruitment, priority given for job posting followed by advertising do not differ by the type of service- BPO or KPO. Further, selection interview rated as the most frequently used method for selection by both ITES-BPO and KPO. However, critical evaluation is needed to analyse how far the methods used for recruitment and selection are effective in identifying the possession of important competencies in job applicants. This implies the need of objective selection criteria and sophisticated selection methods. Further, the ways in which firms facilitate employees to develop competencies, formalise experience gained from daily organizational life, develop an environment conducive to such learning, and how far employees managed to acquire required competencies through training and development processes need an in-depth investigation. However, those are beyond the scope of this study and warrant in-depth future studies in this area.

Overall, competencies play an increasingly prominent role in recruitment, selection and training of employees. One of the main features of the current study is the usage of self-reporting method to assess competency requirements. We believed that by taking into account individuals' perception could avoid an unbalanced focus on less important competencies; such information could be used in making organizational strategic decisions. The procedure adopted in this research generated data that can be used to identify important competency requirements that discriminate between BPO and KPO industries in Sri Lanka.

Limitations and areas for future research

For the study purposes competencies were defined broadly and analysed a common set of competencies that would be important in varying degrees for both ITES-BPO and KPO contexts. On one hand, though it was found that some competencies are equally needed for both ITES-BPO and KPO context, findings could be interpreted as there may be similarities at higher levels of abstraction but there may be differences at the level of detail. On the other hand, the research could have investigated and compared unique BPO and KPO job requirements and proposed different sets of competencies for BPO and KPO firms. However, it is very difficult to find empirical studies that differentiated specific job characteristics of variety of BPO and KPO services. Hence, there is a clear need for such studies. The present study relied on self assessment in the identification of competency requirements. Hence, future studies could collect data from multiple sources. Further, a limited number of studies investigated the influence of demographic variables on competency requirements; the results of those studies are mixed. This warrant more studies on demographic predictors of competencies. Future studies could also investigate other individual and contextual predictors such as role perceptions, employment arrangement, and previous participation on training and development programmes. These all open the door for further investigations.

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Tables

Table 1: Characteristics of the firms

Characteristic	Total firms (N=25) %	KPO (N=16) %	BPO (N=9) %
BPO type:			
Off shore	68	63	100
On shore	32	37	-
Years of operation:			
Less than 3 years	36	37	25
3 or more years	64	63	75
Workforce:			
300 or less	92	94	75
More than 300	8	6	25

Table 2: Employee characteristics (in the sample)

Percentage distribution of Gender, marital status, and level of education							
	Total respondents (N=117)		KPO (N=70)		BPO (N=47)		
Gender:							
Female	54%		57%		49%		
Male	46%		43%		51%		
Marital status:							
Married	33%		40%		40%		
Single	67%		60%		60%		
The highest level of education:							
G.C.E. (O/L)	10%		7%		15%		
G.C.E. (A/L)	45%		33%		64%		
Higher Diploma	25%		29%		19%		
Graduate/Postgraduate	20%		31%		2%		
Summary statistics of Age, Job tenure, and total years of work experience (in years and months)							
	Mean	Median	SD	Skewness	Kurtosis	Minimum	Maximum
Age:							
KPO	27 yrs	26 yrs	4.32	.540	-.247	20 yrs	38 yrs
BPO	24 yrs	24 yrs	3.55	1.35	3.50	19 yrs	36 yrs
Tenure in the present workplace:							
KPO	2 yrs & 7 m	2 yrs	1.67	.509	-.572	6 m	7 yrs
BPO	2 yrs	2 yrs	1.15	1.35	2.09	6 m	6 yrs
Total years of work experience:							
KPO	4 yrs & 6 m	5 yrs	2.20	1.04	2.32	6 m	12 yrs
BPO	3 yrs & 2 m	3 yrs	1.93	2.05	7.89	1 yr	12 yrs

Notes: G.C.E. (O/L) - General Certificate in Education (Ordinary Level)

G.C.E. (A/L) - General Certificate in Education (Advanced Level)

SD - Standard deviation

Standard error of skewness and kurtosis ranged from .224 to .793.

Table 3: Mean, median & t-tests of competency requirements between KPO and BPO industries

	KPO ^{†‡} (N=70)		BPO ^{†‡} (N=47)		t-test	
	Mean	Median	Mean	Median	<i>t</i>	Sig (2 tailed)
Analytical skills	3.60	4	3.34	3	-1.23	.220
Creativity	3.48	4	3.36	4	-.51	.604
Flexibility	3.10	3	3.31	4	.89	.373
Customer focus	3.02	3	3.14	3	.47	.634
Proactive thinking	3.37	4	3.00	3	-1.63	.106
Resilience	3.45	4	3.38	4	-.28	.773
Commercial awareness	3.76	4	3.57	4	-.98	.328
Decision making	3.50	4	3.74	4	1.07	.283
Cost consciousness	3.90	4	4.06	4	.95	.341
Coaching ability	3.48	3.5	3.17	3.5	-1.25	.213
Quality focus	3.70	4	3.91	4	.92	.357
Leadership skills	3.17	4	3.44	4	1.11	.270
Delegation	3.54	4	3.46	4	-.31	.758
Written communication	3.75	4	3.10	3	-1.86	.065*
Oral communication	3.29	4	3.84	3	-2.39	.018**
Result orientation	3.40	4	3.21	3	-.78	.435
Concentration on demands	3.57	4	3.23	3	-1.54	.127
Pressure management	3.71	4	3.82	4	.53	.591
Team working ability	3.64	4	3.23	4	-1.74	.085*
Time management	3.81	4	3.59	4	-1.01	.315
Taking initiative/responsible	3.62	4	3.74	4	.56	.571
Listening skills	3.84	4	4.02	4	.85	.393
Application of technology	3.67	4	3.27	3	-1.89	.061*
Strong sense of work ethic	4.24	4	3.91	4	-2.35	.020*
Feedback give/receive	3.62	4	3.36	3	-1.21	.229

Notes:

* p<0.05; **p<0.01

† Values of the standard deviation ranged between .37 (lowest) to .92 (highest).

‡ Minimum = 1; Maximum = 5.

Table 4: Summarised logistic regression results at the final step

	Coefficient	S.E.	Wald	P-value	Odds Ratio
Decision making	.441*	.213	4.258	.039	0.644
Team working ability	.340*	.163	4.345	.037	1.405
Strong sense of work ethic	.609*	.279	4.772	.029	1.839
Application of technology x Age	.017*	.008	4.470	.035	1.017
Proactive thinking x Industry tenure	.110**	.038	8.278	.004	1.116
Pressure management x Education(1)	-.550***	.126	18.997	.000	.577
Constant	.342	1.056	.104	.746	1.407

Note: * p<0.05; **p<0.01; ***p<0.001

Table 5: Change in -2 Log-likelihood and its significance

	Δ -2 Log-likelihood	Significance of change
Decision making	4.558*	.033
Team working ability	4.500*	.034
Strong sense of work ethic	5.196*	.023
Application of technology x Age	4.765*	.029
Proactive thinking x Industry tenure	11.087**	.001
Pressure management x Education(1)	23.256***	.000

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Appendix

Appendix 1: Competency requirements by age, gender and marital status

Competency	Age						Gender						Marital status					
	KPO			BPO			KPO			BPO			KPO			BPO		
	25 or less (N=38)	More than 25 (N=32)	Sig (2-tailed)	25 or less (N=24)	More than 25 (N=23)	Sig (2-tailed)	Female (N=40)	Male (N=30)	Sig (2-tailed)	Female (N=23)	Male (N=24)	Sig (2-tailed)	Married (N=28)	Unmarried (N=42)	Sig (2-tailed)	Married (N=19)	Unmarried (N=28)	Sig (2-tailed)
Analytical skills	3.56	3.61	.845	3.45	3.21	.470 [†]	3.62	3.56	.819 [†]	3.12	3.56	.184	3.50	3.66	.542	3.60	3.13	.075
Creativity	3.55	3.46	.787	3.58	3.13	.228	3.55	3.40	.625	3.17	3.54	.329	3.57	3.76	.084	3.81	3.22	.178
Flexibility	3.27	3.03	.414 [†]	3.33	3.30	.939	3.27	2.86	.203	3.26	3.37	.762	2.89	3.23	.287	3.25	3.63	.350
Customer focus	3.00	3.08	.917	3.29	3.00	.465	3.10	2.93	.607	3.28	3.04	.584	3.07	3.00	.828	2.54	3.33	.091*
Proactive thinking	3.22	3.43	.521	2.91	3.08	.655 [†]	3.40	3.34	.849	3.00	3.00	1.00	3.66	3.19	.101	2.97	3.09	.792
Resilience	3.05	3.59	.140	3.54	3.21	.431	3.47	3.43	.898	3.43	3.33	.806	3.50	3.42	.829	3.54	3.30	.663
Commercial awareness	3.55	3.84	.332	3.41	3.73	.271	3.67	3.89	.401	3.95	3.20	.008**	3.71	3.80	.733	3.36	3.63	.538 [†]
Decision making	3.50	3.50	1.00	3.50	4.00	.125	3.50	3.50	1.00	3.91	3.58	.315	3.42	3.54	.701	3.54	3.80	.503
Cost consciousness	3.61	4.00	.103	4.12	4.02	.665	3.87	3.93	.784	4.17	3.95	.450	3.78	3.97	.374	4.18	4.03	.648
Coaching ability	3.33	3.53	.464 [†]	3.68	2.70	.024*	3.40	3.60	.490	2.91	3.43	.236	3.42	3.52	.745	3.36	3.11	.631
Quality focus	3.33	3.82	.136	4.04	3.76	.489	3.52	3.93	.163	4.04	3.79	.501	3.60	3.76	.603	3.90	3.91	.986
Leadership skills	3.11	3.12	.823	3.58	3.30	.429	3.00	3.40	.232	3.87	3.00	.010**	3.39	3.02	.276	3.45	3.44	.981
Delegation	3.77	3.46	.244 [†]	3.50	3.43	.869	3.50	3.60	.743	3.13	3.79	.089*	3.64	3.47	.588	3.81	3.36	.325
Written communication	3.50	3.57	.793	2.66	3.65	.008**	3.42	3.73	.207 [†]	3.17	3.16	.925	3.64	3.50	.584	3.54	3.02	.253
Oral communication	3.38	4.00	.137 [†]	3.58	3.00	.110	3.42	4.40	.000***	3.39	3.20	.621	3.75	3.90	.593	2.90	3.41	.243
Result orientation	3.38	3.40	.969	3.66	2.79	.020*	3.37	3.43	.849	3.47	2.95	.168	3.17	3.54	.231	2.27	3.50	.004**
Concentration on demands	3.44	3.61	.563	3.04	3.48	.301	3.47	3.70	.388	3.13	3.34	.595	3.53	3.59	.822	3.36	3.19	.708 [†]
Pressure management	3.50	3.78	.344	3.75	3.91	.643	3.75	3.66	.757	3.69	3.95	.454	3.32	3.97	.014**	3.63	4.45	.045*
Team working ability	3.55	3.88	.292	3.20	3.26	.898	3.57	3.73	.570	3.65	2.83	.042*	3.45	3.92	.088*	3.45	3.16	.553
Time management	3.86	3.78	.743	3.37	3.82	.208	3.72	3.93	.440	3.60	3.58	.944	4.00	3.69	.255	3.54	3.62	.877
Taking initiative/responsible	3.61	3.63	.950	3.95	3.52	.140 [†]	3.42	3.90	.082*	3.69	3.79	.749	3.60	3.64	.898	3.90	3.69	.543
Listening skills	3.35	3.82	.850	4.08	3.95	.658	4.00	3.68	.203	3.78	4.25	.098*	3.71	3.92	.463	4.09	4.00	.788
Application of technology	3.44	3.75	.295	3.33	3.21	.739	3.55	3.83	.271	3.66	2.86	.018**	3.53	3.76	.385	3.45	3.22	.571
Strong sense of work ethic	4.22	4.25	.872	3.95	3.86	.734	4.17	4.33	.297	3.82	4.00	.504	4.25	4.23	.938	3.81	3.94	.682
Feedback give/receive	3.32	3.73	.226	3.54	3.17	.270	3.75	3.46	.329	3.26	3.45	.554	3.78	3.52	.372	3.45	3.33	.760

Notes: * p<0.05; **p<0.01; ***p<0.001

[†] Normality distribution was violated in running the t-test

Values of the standard deviation ranged between .67 (lowest) to 1.03 (highest).

Appendix 2: Competency requirements by the level of education, tenure in the present workplace, total years of work experience

Competency	Education						Tenure-firm						Tenure- industry					
	KPO			BPO			KPO			BPO			KPO			BPO		
	A/L or below (N=28)	Diploma/ Degree (N=42)	Sig (2-tailed)	A/L or below (N=20)	Diploma/ Degree (N=27)	Sig (2-tailed)	Less than 3 (N=36)	3 or more (N=34)	Sig (2-tailed)	Less than 3 (N=31)	3 or more (N=16)	Sig (2-tailed)	Less than 5 (N=34)	5 or more (N=36)	Sig (2-tailed)	Less than 5 (N=30)	5 or more (N=17)	Sig (2-tailed)
Analytical skills	3.46	3.69	.407	3.45	2.90	.167	3.55	3.64	.733	3.44	3.00	.257	3.52	3.66	.608	3.40	3.10	.454
Creativity	3.28	3.61	.281	3.29	3.60	.512	3.58	3.38	.509	3.38	3.27	.795	3.70	3.27	.157	3.27	3.70	.350
Flexibility	3.57	2.78	.014**	3.40	3.00	.376	3.39	2.79	.059*	4.09	3.08	.020*	3.23	2.97	.409	3.18	3.80	.180
Customer focus	2.89	3.11	.490	3.16	3.10	.899	2.91	3.14	.473	3.13	3.18	.928	3.05	3.00	.855	3.29	2.60	.150
Proactive thinking	3.55	3.26	.315	2.97	3.16	.785	3.33	3.42	.751 [†]	2.94	3.18	.597	3.44	3.31	.658 [†]	3.10	2.61	.272
Resilience	3.42	3.47	.885	3.45	3.13	.475	3.30	3.58	.429 [†]	3.36	2.54	.021*	3.41	3.50	.785	3.45	3.10	.475
Commercial awareness	3.55	3.90	.189 [†]	3.64	3.30	.331	3.82	3.70	.638	4.18	3.38	.019**	3.94	3.60	.189	3.48	3.90	.248
Decision making	3.69	3.21	.122	3.62	4.20	.147	3.55	3.44	.707	3.69	3.90	.581	3.26	3.72	.130	3.62	4.20	.147
Cost consciousness	3.75	4.00	.242 [†]	4.60	3.91	.046*	3.77	4.02	.229	4.02	4.18	.648	3.91	3.88	.913	3.94	4.50	.108
Coaching ability	3.46	3.50	.903	3.36	2.50	.104	3.38	3.58	.487	4.00	2.94	.045*	3.35	3.61	.368	3.10	3.44	.547
Quality focus	3.53	3.80	.357	3.97	3.70	.551	3.61	3.79	.530	3.80	4.27	.289	4.00	3.38	.031*	3.83	4.20	.428
Leadership skills	3.03	3.26	.493	3.43	3.50	.876	3.22	3.12	.762	3.50	3.28	.586	3.45	2.91	.104	3.56	3.00	.185 [†]
Delegation	3.46	3.59	.670	4.00	3.32	.157	3.52	3.55	.918	3.47	3.45	.970	3.55	3.52	.918	3.80	3.37	.381
Written communication	3.57	3.54	.927	3.10	3.30	.684	3.52	3.58	.813	3.05	3.45	.379	3.64	3.47	.494	3.80	2.97	.074*
Oral communication	3.50	4.07	.045*	3.21	3.60	.395	3.94	3.73	.461	3.38	3.00	.372	3.88	3.80	.787	3.32	3.20	.784
Result orientation	3.75	3.16	.056*	3.16	3.40	.609	3.25	3.55	.307	3.90	3.00	.038*	3.66	3.11	.067*	3.21	3.20	.972
Concentration on demands	3.46	3.64	.498	3.35	2.80	.234	3.56	3.58	.900	3.11	3.63	.241	3.52	3.61	.752	3.13	3.60	.317
Pressure management	4.04	3.21	.002**	3.94	3.40	.200	3.69	3.73	.878	4.36	3.66	.088*	3.55	3.86	.256 [†]	4.40	3.67	.086*
Team working ability	3.46	3.76	.289	3.21	3.30	.868	3.75	3.52	.423	3.30	3.00	.528	3.76	3.52	.390 [†]	3.08	3.81	.148
Time management	3.57	3.97	.135	3.59	3.60	.990	3.77	3.85	.779	3.58	3.63	.900	3.67	3.94	.315	3.36	3.30	.389
Taking initiative/responsible	3.53	3.69	.579	3.75	3.70	.877	3.69	3.55	.620	3.72	3.18	.786	3.73	3.52	.447	3.83	3.40	.228
Listening skills	3.79	3.88	.745	4.13	3.60	.121	3.80	3.88	.789	4.00	4.09	.788	3.91	3.77	.640	4.08	3.80	.421
Application of technology	3.78	3.59	.465	3.43	2.70	.080*	3.44	3.91	.065*	3.36	3.00	.378	3.55	3.77	.391	2.27	3.32	.944
Strong sense of work ethic	4.21	4.26	.757	4.10	3.20	.003**	4.16	4.32	.297	3.94	3.81	.682	4.23	4.25	.922	3.89	4.00	.735
Feedback give/receive	3.39	3.78	.179	3.29	3.60	.459	3.16	3.64	.901	3.33	3.45	.760	3.52	3.72	.503	3.37	3.30	.848

Note

* p<0.05; **p<0.01

† Normality distribution was violated in running the t-test

Values of the standard deviation ranged between .52 (lowest) to 1.18 (highest).

Appendix 3: Methods used for recruitment, selection, and training and development

	KPO		BPO	
	Mean	Median	Mean	Median
Recruitment methods				
Job posting	4.80	5	4.50	4.5
Advertising	4.75	5	4.25	4.5
Professional institutions	3.10	3	2.70	3
Personal recommendations	2.95	3	3.75	4
Walk-ins	2.95	3	2.75	2.5
Recruitment agencies	1.70	2	2.00	2
Selection methods				
Interview	4.90	5	4.75	5
Literacy test	3.90	4	4.50	5
Ability test	3.40	4	4.00	4
Personality test	3.40	3	3.25	3
Numeric test	3.30	3	3.75	3.5
Presentations	2.30	2	2.00	2
Assessment centre	1.55	1	2.00	2
Training and development methods				
Formal methods:				
Guided reflection	4.55	5	4.75	5
Given more responsibilities to learn	4.45	5	4.75	5
Reading	4.15	4	4.25	4.5
In-company programmes	4.05	5	3.75	4
Job rotation	3.75	4	4.25	4.5
Attendance at seminars/conferences	3.65	4	2.75	3
Coaching/Counselling/ Mentoring	3.60	4	3.25	3.5
Work in special projects	3.55	3	4.00	4
External courses such as short courses and Diploma	2.95	2.5	2.50	2
Distance learning	2.35	2	2.50	2
Informal methods:				
Learn from the feedback given by superiors	4.95	5	5.00	5
Learn from doing the job	4.85	5	4.75	5
Learn from observing colleagues/superiors	4.60	5	5.00	5
Learn from handling problems on the job	4.15	4.5	2.50	2
Learn from organizational meetings	4.05	4.5	4.00	4

Note:

Values of the standard deviation ranged between .43 (lowest) to .87 (highest).