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Soft skills Evaluation in the Information Technology and Business Process Management Industry in Sri Lanka: Skills, Methods and Problems

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The dearth of soft skills and lack of such soft skills measurement tools are the key for many problems in the Information Technology and Business Process Management industry in Sri Lanka. Studies on soft skills evaluation methods are skeletal within the industry concerned. In bridging this gap, the researchers investigated the soft skills required by different job categories, currently used soft skills measurements, and the problems and challenges associated with the soft skills measurement process in the industry concerned. This study was designed as a qualitative inquiry using constructionist phenomenology. Ten job categories and thirty-six job roles were identified with forty soft skills, needed for those jobs. To measure such skills, eleven different soft skill evaluation methods were found out. Another eight problems and challenges in the soft skills evaluation were also identified. As implications, Researchers highlighted tendencies to recognise soft skills training, increasing emphasising on soft skills evaluations and perceived risk of hindering the soft skills evaluation process due to the challenges, can be sated. Therefore, it is recommended to strategically approach for soft skills training as a serious HRM agenda. Finally, the model, developed can be used as a framework for IT related competency development, and educating and training IT professionals at institutional levels.

Keywords: Soft skills, Soft skills development, Softs skills evaluation, Information Technology and Business Process Management Industry, IT job categories

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Introduction And Background of The Study

The Global IT industry is rapidly growing, contributing to countries' development. According to the research of International Data Corporation (IDC), the global IT industry that covers software, hardware and infrastructure, IT and business services, and emerging tech and telecom services, was on a way to reach $5 trillion in 2019, (CTIA, 2020). Sri Lanka is emerging as one of the best global ICT destinations with around 300 ICT companies, operating within the country and ranked among the top 50 global outsourcing destinations, according to AT Kearney and ranked among top 20 emerging cities, according to Global Services Magazine (SLASSCOM, 2014). Information Technology and Business Process Management Industry (IT/BPM) sector in Sri Lanka has shown 20 per cent growth over the last 5 years by becoming the fifth largest export segment in SriLanka and is expected to reach $5 billion in revenues, 200,000 direct jobs, and 1,000 start-ups by 2022, and (SLASSCOM, 2020).

IT Industry, as a growing industry faces many challenges. Among them, unemployment of IT graduates is a crucial problem as revealed by a survey done on employers' perception of soft skills of graduates at Intel Elite Soft Skill Training (Hairi, Toee & Razzaly, 2011). Lack of soft skills such as moral values and ethics, communication skills, and confidence has become the major contributors to unemployment among graduates (Esa, Selamat, Padil & Jamaludin, 2014). Even among the Sri Lankan IT professionals who work within or outside Sri Lanka, soft skills are the lacking part which are expensive to be trained compared to hard skills (Lansakara, 2012; Bishop, 2017). It is important to see what has caused to create a gap in soft skills as pointed out in the rest of the parts in this section.

Soft skills development is a challenge as the customer requirements in the IT industry is vague and identifying them is also difficult (Summerville, 2009). This is because, the customer need becomes a standard in training soft skills, needed for IT professionals. On the other hand, proper identification of customer requirements is purely dependent not on technical skills, but on soft skills such as communication skills and customer interactions, (Patil, Eijkman & Bhattacharyya, 2012).The inability of such careful analysis of customer requirements leads to failures in IT projects (Dorsey, 2005). The failure rate of large IT projects is between 50% and 80%, and another 75% of IT professionals anticipate that 80% of the software projects would fail, again due to lack of priority given to soft skills (Sukhoo, Barnard, Eloff, Van der Poll, & Motah, 2005). This means that project success, as well as, job success depends on soft skills. Technically excellent professionals are failing due to lack of adequate soft skills (Bishop, 2017). As revealed in the literature, 75% of long term job success is highly dependent on human-related skills, and only 25% depends on technical skills (Abbas, Kadir & Azmie, 2013). However, the different job categories in the IT industry require different combinations of these soft skills at different levels (Ahmed, Capretz, Bouktif & Campbell, 2015; Hairi et al, 2011).

IT professionals have to work under highly stressful conditions and strict deadlines (Sathyendran, 2016) and that demands skills in working under pressure with tolerance. Inability to cushion against these difficulties stimulates high employee turnover. This is evident in high-tech companies (Tech Republic, 2013). Employee turnover in Sri Lanka's IT industry is also gradually increasing (Jinadasa, 2005). High risk, involved in IT jobs is another critical factor (Summerville, 2009). This is also led by many reasons such as vague user requirements, the intangibility of products, and technological conflicts. Dealing with this high risk also demands critical technical skills as well as softs skills (Mtsweni, Hörne & Poll, 2016).

On the other hand, the Lack of soft skills in the IT industry in Sri Lanka has caused to increase in operating costs, an increase in workload, and delays in the development of products and services (Lansakara, 2012). Further, evaluating soft skills is more difficult than determining whether someone can perform a particular task (Babich, 2016). According to a pilot study, done prior to this study, the researchers identified that the evaluation of soft skills is a challenge. The availability of research-based knowledge about soft skills and soft skills evaluation in the IT/BPM industry is a missing part.

According to the participants, interviewed for the pilot study and the general search engine results, no significant study was found on the soft skills evaluation methods, used in the IT/BPM industry in Sri Lanka. The extracted quotes, generated from the pilot study-interviews, done with the experts in the IT/BPM industry are presented for further qualitative evidence for the existence of the research problem of this study (Table- 01).

Table 01- Quotes from the Pilot Study on non-availability of the Studies on Soft Skills
"...it is difficult to measure soft skills…therefore recommendations of project supervisors are taken to consideration" (Pilot Interview Participant 01, May 2018).
"…according to my knowledge… There were some studies on IT workforce … workforce analysis and things like that… but they don't necessarily focus on soft skills…" (Pilot Interview Participant 01, May 2018).
"I searched the web using major search engines such as Google, Yahoo, Bing, and Ask for …." on Soft skill evaluation methods in Sri Lankan in the IT/BPM industry. However, I could not find any articles related to all the words…. A deep search produced some articles related to some of the words, yet the major emphasis on soft skills … had not been addressed by these articles" (Pilot Interview Participant 3, 2019)

Source: Authors' development based on the evidence of preliminary interviews

Based on the literature evidence and IT/BPM professionals' evidence, it is proven that there is no literature within the context of Sri Lanka on soft skills and soft skills evaluation methods within the IT/BPM industry in Sri Lanka. Based on this identified literature gap, the researchers aimed at investigating the soft skills required and soft skill evaluation methods, used in the IT/BPM industry in SriLankan. The study was designed as a qualitative phenomenological study. Accordingly, the main three research questions used were: What is the soft skills, required by the different job categories in the IT/BPM industry in Sri Lanka? , What are the currently used methods to evaluate soft skills in the IT/BPM companies in Sri Lanka?, and What are the problems and challenges, faced in the soft skills evaluation process in the IT/BPM industry in Sri Lanka. Eventually, in resolving the overall research problem, answers for all three research questions were integrated together to a conceptual model that explains the phenomena in question— Soft skills evaluation in the IT/BBM industry in Sri Lanka.

Literature Review

The literature review presents definitions of soft skills, general soft skills categories, softs skills in the IT industry, soft skills categorisation in the IT industry, and soft skills measurement tools.

Defining soft skills: The term skill has various definitions.Oxford Learners Dictionary (2019) defines skill as 'ability to do something'. Skills are defined as one's capability of using knowledge effectively in generating performance (Gilman, 1989). Skills are classified in different ways. One such classification is dividing skills into soft skills and hard skills (Ahmed, Capretz, Bouktif & Campbell, 2012). Different terms are used to refer the purpose of the term soft skills such as generic skills, key skills, essential skills, key competencies, necessary skills, transferable skills (Esa et. al., 2014), core skills, common skills, key qualifications, and employability skills (Osman Girardi & Paull, 2012).

The term soft skill does not have any globally accepted definition (Taylor, 2016). Soft skills describe a form of employability qualities such as common sense, human and personal skills to communicate with people harmoniously, interact effectively and positively with a flexible attitude which are not dependent on one's gained knowledge (Oxford Learners Dictionaries, 2021; Collins Ddictionary, 2019). Soft skills are skills that determines one's personal individuality that impacts on behaviour of a person while helping interacting with others in a work set up (Ahmed et al, 2015). Within the study context of Sri Lanka, soft skills have been referred to personality traits, work ethics, interpersonal skills, problem-solving, and language skills of an individual (Lansakara, 2012).

Soft skills are non-technical, intangible, personally specific and qualitative as they are hard to measure (Wilhelm, Logan, Smith & Szul 2002; Schulz, 2008; Bishop, 2017). They may define the strength of an individual and describe the interpersonal qualities (Robels, 2012). Soft skills are the qualifications that exceed, empower, and complement hard skills which are more technical-specific (Henninger, Hörfurter, & Mandl 2001; Al Abduwani, 2012; Ahmed et al, 2012;Ahmed et al, 2015). According to the Employee Productivity Model (Bishop, 2017), soft skills are one of the three factors that positively impact on employee

Productivity.

General soft skills categories: Different clusters of soft skills can be identified. One such cluster is dividing soft skills as personal and intrapersonal skills (Abbas et al, 2013). According to Al Abduwani (2012), soft skills are grouped into three groups such as; personal, interpersonal, and situational skills. There are four dimensions of soft skills: managing tasks, managing self, managing career, and managing others including superiors, subordinates, peers and clients (Joseph, Ang, Chang & Slaughter, 2010).

According to Mahasneh and Thabet (2016), there are twelve clusters of soft skills such as communication, workplace thinking, conflict resolution and negotiation, teamwork and collaboration, stress management, workplace professionalism, workplace productivity, workplace ethics, workplace delivery, planning and organizing, self-intelligence, and social intelligence.

Soft skill in the IT industry: According to Belzer and Moreira (as cited in Sukhoo et. al., 2005), communication, team building, flexibility and creativity, leadership, stress management, time management, and conflict management are essential soft skills in the field of software project management (Sukhoo et al, 2005). Research is done, using IT internship students, has identified ten common soft skills in the field of business computer technology: communication, critical and decision making, interpersonal skills, negotiation, problem-solving, self-confidence, self-management, teamwork, and work ethics (Patacsil and Tablatin, 2017). The most important soft skills for the IT industry in South Africa are communication, flexibility, self-management, teamwork, multidisciplinary thinking, client management, decision making, conflict management, work ethics, interpersonal relations, negotiation, self-confidence, critical thinking, emotional intelligence and professionalism (Taylor, 2016).

Soft skills categories in the IT industry: A survey done on soft skills in the software development industry shows that thedifferent job categories in the IT industry require different soft skill combinations at different levels of demand (Ahmed et al, 2015).

'Sixth edition of Skill Framework for Information Age' (SFIA 6) categorizes skills and responsibilities into seven levels: follower; assist; apply; enable; ensure advise; initiate, influence; strategy, inspire and mobilise. Further SFIA6 describe that the level of skills, required for each category is different (SFIA Foundation, 2015). This framework categorizes ninety-seven skills (covers both hard and soft skills) into six categories: strategy and architecture, change and transformation, development and implementation, delivery and operation, skills and quality, and relationships and engagement (SFIA Foundation, 2015). Matturro (2013) highlights soft skills requirements in software requirement assessment, software designing, software construction and software testing processes. They are oral and written English, teamwork, imitativeness and proactiveness, interpersonal skills, commitment and responsibility, eagerness to learn,and analytical and problem-solving skills.

Another study highlights that system analyst job has a high demand for communication skills, analytical and problem-solving skills (Ahmed et. al., 2015). Ahmed et. al. (2015) further highlights that communication skills, analytical and problem-solving skills, team work, organising, independent work, interpersonal skills, and adaptability as in high demand for computer programming and software testing jobs.

Soft skills evaluation: Evaluating soft skills is important though it is a hard task (Cook, 2016). To measure these social skills situational judgements, structured interviews, group interactions, role plays, and presentations have been identified as useful methods (Cook, 2016). Personality tests, used in graduate selections (Johns, Teo & Harrington, 2007) and case study interviews which are used to evaluate soft skills such as problem solving, communication, and customer orientation have been recognised as common soft skills evaluation methods (Armbrüster, 2004). Behavioural interviewing which values past performance has been regarded as a better predictor of future performance (Muzio, Fisher, Thomas & Peters 2007).

Soft Skill Quantification (SSQ) model which measure micro social skills numerically using a 360o feedbacks system is another important measurement of soft skills (Muzio et. al., 2007). MOSSA, the Model of Soft Skill Assessment is also an important model to evaluate soft skills (Ducange, Genova, Prunotto, Dimitrova, Dall'Amico & Carrollaggi, 2016). Different approaches such as specific ability approach, mixed method approach and self-reporting are used to measure the Emotional Intelligence of employees (Muyia, 2009). Emotional Competence Inventory (ECI) and Emotional Quotient (EQ) are such important assessment tool in measuring softs kills (Muyia, 2009).

Underlining theories of the study: This study acknowledges two major theories that contribute to explain the phenomenon in question. They are Human Capital Investment (HCI) theory and the Social Capital (SC) Theory.

HCI theory explains that differences of the level of education and training that decides the level of knowledge and skills, including soft skills, cause differences in benefits and job opportunities (Wuttaphan, 2017; Kuzminov & Frumin, 2018), and that it should be developed and measured, though it is difficult task (Kuzminov & Frumin, 2018). Human Capital comprises abilities, knowledge, skill, personal talent, behavior, and efforts, according to Davenport (1999). Wuttaphan (2017) includes IQ, intelligence, knowledge to work, expertise for working, personal characteristics, behaviour, ethics, norms, belief and effort to human capital. It is clear that soft skills are a great part of human capital, and HCI theory explains the development and measurement of soft skills.

Social Capital theory is another important theory to explain the phenomenon of soft skills development. SC mainly refers to trusts, norms, social networks, values, beliefs, obligations, relationships, networks, friends, memberships, and civic engagement (Bhandari and Yasunobu, 2009) which shape soft skills. Bhandari and Yasunobu (2009) further value them as a resource in contributing to economic and social growth and other outcomes.

Methodology

Since there was no literature available within the Study context, and the researcher's intention of understanding about the phenomenon in question purely within its study context, using an inductive approach, a qualitative research approach was used. The quantitative study needs supporting literature and does not allow such inductive discoveries purely within study contexts as that methodology is governed by deduction of hypothesis from extant literature. The ideally matching qualitative strategy for this research problem was phenomenology as the researchers intended to study the overall phenomenon of soft skills evaluation in the industry concerned. The main reason to employ on Phenomenology is it allows to understand the context in-depth by concentrating on lived experience of the participants. Further, the researchers investigated how the participants for the study constructed the answers for the research questions, using the exposure of the researchers about the IT field and Soft skills evaluation. For this purpose, the constructionist's research paradigm was followed to guide the overall study.

We considered all companies in the IT/BPM industry in Sri Lanka as its population which comprises of over 300 companies mainly centralized in Colombo. Purposive and snowball sampling methods were collaboratively used to find out the rich data sources that are the most experienced professionals who have experience over a larger number of companies in the IT/BPM industry, not in a single company. Further, these participants were from companies ranging from award winning start-ups to matured companies which have over 35 years of experiences in the industry.

All the participants of the study have had over 10 years experiences in the industry and they have been playing various top position roles in the industry such as CEOs, Co-founders, Director board members, and as the chair of industry professional bodies. More importantly, majority of the participants of the study have had work experience at many matured companies on the IT BPM industry in Sri Lanka locally and in abroad. Therefore, the sample of the study ensures the 'richness of data' as it used the most experienced industry leaders who can talk in overall about the industry concerned.

Based on phenomenological study guidelines, the researchers collected data using in-depth interviews until reaching the 'data saturation'. Researchers analysed data using the Framework Analysis Method, suggested in phenomenological studies while following needed canons and precoders as suggested by phenomenological studies to ensure the research quality and ethicality of the study. Framework Analysis is comprised of five phases, namely; (a) Familiarization– familiarization with the collected data, (b) Identifying a Thematic Framework– a process of identifying emerging themes, (c) Indexing– process of labelling data, (d) Charting– storing data in a meaningful manner under related themes, and (e) Mapping and Interpretation– summarize findings, define concepts and associations, and mapping phenomenon and add descriptions.

Results And Discussion

This section presents the answers for the research questions, based on the findings of data analysis. The researchers were cautious to ground in data in the analysis process.

Jobs and job categories in the IT/BPM industry in srilanka: There is no source to identify the jobs and job categories in the IT/BPM industry In identifying the soft skills needed for IT jobs, the researchers first searched for the composition of jobs and job categories. This enquiry revealed that various titles have been assigned for job roles or jobs, used in Sri Lanka's IT/BPM industry. The different jobs described by the participants are presented in table 2.

Table 2	Different Job Titles Found in the IT/BPM Industry in Sri Lanka
Abbreviations	**Job Titles**
CEO	Chief Executive Officer
CTO	Chief Technical Officer
ABA	Associate Business Analysis
BA	Business Analysis
SBA	Senior Business Analysis
CBA	Consultant Business Analysis
ASE	Associate Software Engineer
SE	Software Engineer
SSE	Senior Software Engineer
LSE	Lead Software Engineer
SA	Solution Architect
AQAE	Associate Quality Assurance Engineer
QAE	Quality Assurance Engineer
SQAE	Senior Quality Assurance Engineer
LQAE	Lead Quality Assurance Engineer
SDM	System Development Manager
SSDM	Senior System Development Manager
PM	Project Manager
DPM	Director Project Manager
ASyE	Associate System Engineer
SYyE	System Engineer
SSyE	Senior System Engineer
UIE	User Interface Engineer
UXE	User Experience Engineer
CC	Call Centre
CW	Content Writer
SWA/CTE	SWA and Cloud Technology Engineers
DCE	Data Centre Engineers
H/IE	Hardware/ Infrastructure Engineer
BPMA	Business Process Management Advisors
BPRA	Business Process Re-Engineering Advisors
DEX	Domain Experts
BPS	Business Process Specialist
BPRS	Business Process re-engineering Specialists
PA	Principal Architecture
-	Technician
-	Sales and Marketing Jobs
-	Finance and Accounting Jobs

Source: Results of Analysed Data

Based on the respondent's views, 10 different job categories were identified as depicted in table 3. Only one respondent agreed with the categorization of SFIA 6 which is a globally accepted categorization. Other remaining categorizations were based on the experiences and knowledge of the participants.

Please see Table 3: Summary of Job Categorization in the IT/BPM Industry in Sri Lanka

The table describes the different job categories and their sub categories along with the relevant job titles. Abbreviations used in the column of relevant job titles are explained in Table 2.

Soft Skills, Valued in the IT/BPM Industry in Sri Lanka: Respondents' views on soft skills requirement for each job category were different.

We observed that communication skills, listening, team work, customer service, ethical conduct, emotional intelligence and agility were the mostly regarded soft skills for the jobs. The summary of soft skill requirement is given in table 04.

Please see Table 4: Soft skill Requirement for Each Job Category Identified in the IT/BPM Industry in Sri Lanka

Second column of the table 04 presents the specific soft skills for level 1 job categories, while fourth column of the table presents the specific soft skill requirement for level 2 job categories. Sixth column of the table represents the specific soft skills for level 3 of job categories and seventh column of the table describe the soft skills common to every job category.

Methods of Measuring Soft Skills in IT/BPM Industry in Sri Lanka: Respondent emphasised the needs of evaluating soft skills, and confirmed that ignorance of that would lead to negative results for both individuals and the company. Research results show that soft skills are evaluated throughout the employment, before recruitment and after recruitment. Before recruitment stage is again divided into two sub stages as before job interviews, and during job interviews. After recruitment evaluation is done to assess the employees for their job confirmation, promotion and for salary and benefit increments. Summary of the soft skills evaluation methods, used in the IT/BPM industry is given in table 05.

Please see Table 5: Soft Skill Evaluation Methods Used in the IT/BPM Industry

Respondents further highlighted that evaluating both soft and hard skills together as a combination is the best way to evaluate skills. However, the respondents were not happy with using time consuming evaluation methods like 360-degree evaluation. Use of social media check-ups, references check are common before selection interview process. Most common evaluation methods used during selection interviews are open ended questions, project-based questions, technical questions and observations. The Most common methods used for soft skill evaluation after recruitment are the self-assessment, year-end review and observations.

Problems and Challenges of Soft Skills Evaluation in the IT/ BPM Industry in Sri Lanka: Evaluating soft skills is a challenging task. Respondents, highlighted some problems and challenges in evaluating soft skills (table 06). Respondents further emphasized the timely need of addressing these pressing problems and challenges as ignorance of such issues leads deadly results in IT project performances. Further, the respondents were very eager to give suggestions to overcome these issues that were captured as a valuable outcome of this study and presented in the table 07.

Please see Table 6: Problems and Challenges of Soft Skills Evaluation

Please see Table 7: Respondents' Suggestions for Problems and Challenges

Conceptualising the Phenomenon of Soft Skills evaluation in the IT/BPM Industry in Sri Lanka: The figure 01 depicts the conceptualised phenomenon of soft skills evaluation in the IT/BMP industry in Sri Lanka. **Please see figure 1**.

The first component of the figure depicts a hierarchy of the jobs. The jobs are divided into two categories as IT job roles, and BPM job roles. IT job roles can be further divided into software development roles and IT infrastructure related job roles. Software development job roles is further divided into six jobs namely, Business Analysis, Software Engineering, Quality Assurance Engineering, Project Management, User Interaction and Non-Technical jobs.

Sub section A1 in figure 01 depicts the job categories while specific jobs of each job category are depicted in subsection A2. Job roles of Business analysis, Software Engineering, Quality Assurance Engineering, Project Management and User Interaction categories are presented in a hierarchy for those jobs there is a career progression from top to bottom. In the analysis, we could not recognize a hierarchical relationship among the jobs in the BPM Sector and IT Infrastructure and Non-technical job categories. The 'User Interaction' job category is a recently established one and that there were no further job titles, found in under it. Job titles under Project Management category are relatively above-middle management jobs. Those who progress under the job categories of Quality

Assurance and Software Engineering, can further advance their careers under Project Management.

We could not collect supportive evidence for further progression of the jobs after CBA under Business Analytics. Reference codes used in presenting the job hierarchy under its part A1 and part A2 in the figure 01 have been described in table 08 and the abbreviations used in table 08 were described in table 02 earlier.

Please see Table 8: Reference Codes Used in the Job hierarchy in Figure 1

Discussions

In this section, the results of this study have been compared and contrasted against the extant literature under the research question areas.

Taylor (2016) has identified soft skills are essential not only for personal development but also for social participation and for the success of job performance. According to Ahmed et. al. (2015) soft skills enhance the individual success. Similarly, this study has revealed that soft skills are a set of skills that are essential for both career development and project success. This study findings mainly agree on the claims of Ahmed et. al. (2012) that all IT professionals should have both hard and soft skills which are complement to the relevant technical skills.

Taki Al Abduwani (2012) has grouped the soft skills into three categories: personal skills, interpersonal skills and situational skills, but the respondents in this study did not show interest in categorizing skills. Instead, this study revealed an exhaustive list of common soft skills. Among the skills in the list, the top mostly valued soft skills are communication skills, listening, team work, ethical conduct, customer service, emotional intelligence and agile mind set. Like what Sukhoo et. al. (2005) presented, this study also identified that Flexibility, creativity, stress management, time management, and conflict management are a set of essential soft skills, while recognising more detailed list of additional skills. Importantly, the researchers found out a set of highly required soft skills for job category levels such as: engineering; sales and marketing; and BPM job category. Although, Patacsil and Tablatin (2017), and Taylor (2016) identified a similar list of soft skills

As in this study, Taylor (2016)'s emphasis on professionalism and multidisciplinary thinking was not justified by this study. Most of the global studies (Ahmed et. al. 2012 & 2015; Taylor, 2016; Patacsil & Tablatin, 2017; Sukhoo et. al., 2005; Esa et. al., 2013) and local studies (de Silva, 2015; Lansakara, 2012) have identified communication skills as one of the most important soft skills as highlighted by this study as well. The term ethical conduct, used by this study is similar in meaning to professional ethics (Esa et. al. 2013), and work ethics (Bishop, 2017), found in the literature.

None of the reviewed literature presented agile mind set as a soft skill for IT professionals though this study introduces the 'agile mind' set as an important soft skill. Though SFIA 6 (2015) is presented ninety-seven skills required for digital age, we have observed that its major focus is on hard skills and a very little focus has given to soft skills. This study revealed that evaluation of soft skills is a challenging task which has been confirmed by Cook (2016) elsewhere. Even though, this study revealed a division of soft skills evaluation methods in to separate stages, none of the referred literature did so.

According to Dipboye, Macan, & Shahani-Denning (2012), the most common method of skill evaluation is interviews. In this study, the researchers revealed that respondents use different methods to evaluate soft skills during the interviews such as: open ended questions, project-based questions, past experience technical based questions, and psychometric test. Researchers further observed that the literature had explained soft skills evaluation methods such as structured interviews, situational judgements, group interactions, role plays and presentations (Cook, 2016). Some other authors (Johns el al, 2007; Armbrüster, 2004) showed the use of personality test, and case study interviews to evaluate soft skills like problem solving, communication and customer orientation, which was not observed in this research. Researchers noted that respondents had used 'observation' as a complementary method during internship, background check-up, and phone call-based interviewing in assessing soft skill .

Compared to some underline theories, soft skillsevaluation is subjective to evaluators' personal perspectives and experiences.

The Control theory acknowledges that soft skills may vary from situation to situation and from context to context as well as assessor to assessor (Gibb, 2014). This was confirmed by this study as well. Further, according to the goal theory, soft skills evaluation is challenging when goals are not developed properly by both evaluators and learners of soft skills (Gibb, 2014). This study also presented that there were no commonly identified soft skills which are taken as goals for evaluation.

Conclusion, Implications and Recommendations

Though, there is no common framework for soft skills requirement and soft skill evaluation in the IT/BPM industry in Sri Lanka, this study discovered a list of common soft skills and soft skills evaluation methods, used before and after the recruitment. Further as a sub outcome, this study constructed a hierarchy of jobs and job categories for the industry concerned which are not codified in any source. The study further identified a range of problems and challenges in evaluating soft skills. The derived new knowledge was then articulated in the conceptual model that described the jobs, the soft skills needed for the jobs, softs skills evaluation methods, and problems and challenges in evaluating soft skills. Thus, this model becomes a new discovery to explain the phenomenon of soft skills evaluation in the study context, concerned.

Implications

Still hierarchical nature of job-structure in the IT/BPM industry indicates a well-structured nature of the existing jobs. The hierarchical nature sometimes, will put structural barriers, especially in the advancement of careers. This may lead IT professionals' dissatisfactions, high employee turnover, and eventually the project failures. Recognition of the importance of soft skills is appreciated and this will further enhance the industry talents as it tends to influence IT/BPM industry to value skill-training. However, the communication of such competencies across the industry is informal and not standardised. This will put barriers in the development of such soft skills. The Efforts, taken in measuring soft skills are appreciable and can lead talent-based management in the industry concerned.

However, the problems and challenges, confronted in evaluating soft skills, seems to play hindrances in soft skills evaluation and training. These challenges can deteriorate the-overall mechanism of soft skills evaluation and training when the management focus more on delivering results rather monitoring skills due to tough deadlines and work pressure.

The conceptual model, presented, based on this study, will facilitate to guide the organisations to set standards in their job designing, recruitment and selection campaigns, training and development, performance management, and career decisions of IT professionals. This model will further facilitate education institutes that prepare talents for the industry to prepare more relevant curricula to educate the learners to equip the students with right competencies to cope up with the contextual pressures.

Recommendations

To eliminate the structural barriers, that may be led by the hierarchical nature of the jobs in the industry, it is recommended to rethink the job designing methods to inculcate values in the overall business process that recognise internal customer and supply relationships that ultimately link with the external customers. This will lead to be more process driven rather remaining functional driven while eliminating the non-value-added activities in the overall process. In other words, we suggested to involve in a reengineering process of the IT/BPM industry organisations and adopt best practices that suits the local context. The motivation, shown in recognising the importance of soft skills and measuring such skills should be aligned with organisational wide HRM strategy. By such strategic HRM we recommend to: create an awareness of the importance of soft skills and recognise them through a competency map that are communicated organisation wide; negotiate for sponsorship for such soft skills and soft skills training; and eliminate problems and challenges in measuring and training soft skills.

In doing this, IT industry must crucially consider to rightly select HR professionals who qualify to play a strategic HRM role. The empowered HRM, then will be able to tackle the issues, problems and challenges of measuring and training of soft skills.

Researchers further recommend the conceptual model developed by this study to be adopted as a framework for the industry competency development. This, model can be further a basement in evaluating the success of soft skills development mission at organisational level. Further it is recommended to share this framework with their partnering universities and other educational institutes to use as a guide in their teaching and learning processes. So that, such educational institutes can supply needed soft skills demanded by the IT/BPM industry in Sri Lanka, enabling the industry to enjoy rightly matching professionals to advance their industry outcomes. Integrating the suggestions, made by the respondents in eliminating the problems of measuring soft skills, the researchers further suggest to empower research and development arms, associated with soft skills development in organisations and in the industry. Further, the respondents suggested to implement Artificial Intelligence based decision support systems to support evaluators in evaluation process. Finally, agreeing with the respondents, the researchers also suggest to introduce a standard framework of soft skills evaluation to the industry.

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Annexure 1

Table 3: Summary of Job Categorization in the IT/BPM Industry in Sri Lanka

Job Category (Level 1)	Job Category (Level 2)	Job Category (Level 3)	Relevant Job Titles
Information Technology	Software /System Development (Different organizations may use different titles for these job roles)	Business Analysis category	ABA, BA, SBA, CBA
		Software Engineering category	ASE, SE, SSE, LSE, PA, SA
		Software Quality Assurance category	AQAE, QAE, SQAE, LQAE,
		Software Project Management category	SDM, SSDM, PM, DPM
		User Interaction category	UIE, UXE
	Non-Technical		CC , CW
			Sales and Marketing Jobs
			Finance and Accounting Jobs
	IT Infrastructure	System /Network Engineering category	ASyE,SyE, SSyE
		Other	Technician, DCE,SAW/CTE, H/IE
BPM			BA, BPMA,BPRA, DEx, BPS,BPRS,
Other			CEO,CTO

Source: Results of Analysed Data

Table 4: Soft skill Requirement for Each Job Category Identified in the IT/BPM Industry in Sri Lanka

job Category (Level 1)	Soft skills	Job Category (Level 2)	Soft skills	Job Category (Level 3)	Soft skills	Common soft skills for the industry
Information Technology		Software /System Development (Different organizations may use different titles for these job roles)	Public Relations, Patience, Independence, Initiative skills, Explorative mind set, Deal with peers, humour, sharing responsibility, Friendliness	Business Analysis category	Every common soft skill is needed.	Communication skills, Listening, Emotional Intelligence, Ethics, Teamwork, Leadership, Organizing, Being a follower, Desire to learn and develop, Hard working, Managing skill, Good/Positive Attitude,
				Software Engineering category		
				Software Quality Assurance category		
				Software Project Management category		
				User Interaction category		

		Non-Technical	Communication Skills, Positive thinking, Good Attitude, Ability to understand and adopt in to market	-	-	Passion, Responsible, Integrity, Accuracy, Negotiation skills, Customer service, Motivation, Public relations, Confidence, Analytical skills, Interpersonal relationships, Selflessness, Accountable, Empathy, Agile mind set, Unlearning things
		IT Infrastructure		System /Network Engineering category	Every common soft skill is needed.	
				Other		
BPM	Analytical skills, Visualization, training Ability, Get People's Involvement					
Other						

Source: Results of Analysed Data

Table 5: Soft Skill Evaluation Methods Used in the IT/BPM Industry

Evaluation Stage	Evaluation Substage	Evaluation Methods
During Recruitment	Before selection Interview	Checking social media activities (Eg: Facebook)
		Check Professional Social media accounts (Eg: LinkedIn)
		Check for recommendations form lecturers, previous employers/peers, senior batch members of the University
		Use Observations done during the internships
		Observing responses to telephone call and email
	During the Selection Interview	Open Ended questions
		Past Experienced based Questions
		Project Based Questions
		Technical Questions
		Observations (E.g.: postures, gestures, behaviour before, during and after the interview, other nonverbal communications)
		Presentations
		Psychometric Tests
After the Recruitment	For Confirmation, Salary and Benefit increases, promotions, and throughout the employment	Self-Assessments
		Group Work Activities
		Observations (E.g.: How work as a team, how treat lower level people, punctuality, etc.)
		Year End Performance appraisal
		Mid-Year Review
		360 Evaluation
		180 Evaluation

		Evaluation Methods developed by Organizational level
		Evaluation methods/Forms designed by Managers

Source: Results of Analysed Data

Table 6: Problems and Challenges of Soft Skills Evaluation

Problems and Challenges, associated with Soft Skill Evaluation	Problem /Challenge Cluster
Subjective judgment-based evaluations/ fewer objective measures	Challenge of fair evaluation
Effective evaluation processes are time consuming and require a great effort	Process relevant Challenges
Large organizations have to decentralize the evaluation processes due to the fact that equal evaluation for every employee cannot be guaranteed (One person cannot evaluate all employees in large organizations)	Process relevant Challenges
People come up with new tricks for deception and people do not have steady behaviours	People Related Challenges
Latest knowledge related to the soft skill evaluation is required for better judgments. But accessing latest literature is a challenge.	Information and Technology based Challenges
History data related to employees' personal behaviours are essential for a better and fair judgment of soft skill. But accessing that behavioural history of a person is challenging and difficult.	Information and Technology based Challenges
Soft skills are difficult to measure quantitatively	Process relevant Challenges
Due to non-job-related issues, level of soft skills possession of a person can be deteriorated. Therefore, evaluating soft skills just based on the job-based observation may be unfair in some cases.	Challenge of fair evaluation

Source: Results of Analysed Data

Table 7: Respondents' Suggestions for Problems and Challenges

Problem/Challenge Cluster	Suggestions to Overcome the Problems and Challenges	
	Suggestions in details	Suggestion Theme Tag
Challenge of fair evaluation	• Use a standard framework • Refer latest related literature • Be open minded in every possible way • Have initial research to introduce standard soft skill measures specific to the industry • Establish proper communication chain to avoid or minimize mistakes in evaluation	• Research base standard framework introduction and enhance communication
	• Develop a data oriented artificial Intelligence based decision support system to assist the soft skill evaluation • Establish proper communication chain to avoid or minimize mistakes in evaluation	• Use of AI and DCS and enhance communication
Process relevant Challenges	• Examine into restructure them for more effective execution	• Restructuring evaluation
	• Use a standard framework • Be open minded in every possible way • Establish proper communication chain to avoid or minimize mistakes in evaluation	• Research base standard framework introduction and enhance communication
	• Find new methods from latest literature and best practices	• Empower Research
People Related Challenges	• Refer latest related literature • Built some indicators to identify the people's behavior	• Introduction of Research based human behavior indicators

Information and Technology based Challenges	• Have initial research to introduce standard soft skill measures specific to the industry	• Empower Research
	• Develop a data oriented artificial Intelligence based decision support system to assist the soft skill evaluation	• Use of Artificial Intelligence (AI) and Decision Support Systems (DCS)

Source: Results of Analysed Data

Table 8: Reference Codes Used in the Job hierarchy in Figure 1

Reference Codes and Relevant Abbreviations Used for Part A1 in Figure 1

Reference Code	Job Category
C1	IT
C2	BPM
C3	Software Development
C4	IT Infrastructure
C5	Business Analysis
C6	Software Engineering
C7	Quality Assurance Engineering
C8	Project Management
C9	User Interaction
C10	Non- Technical

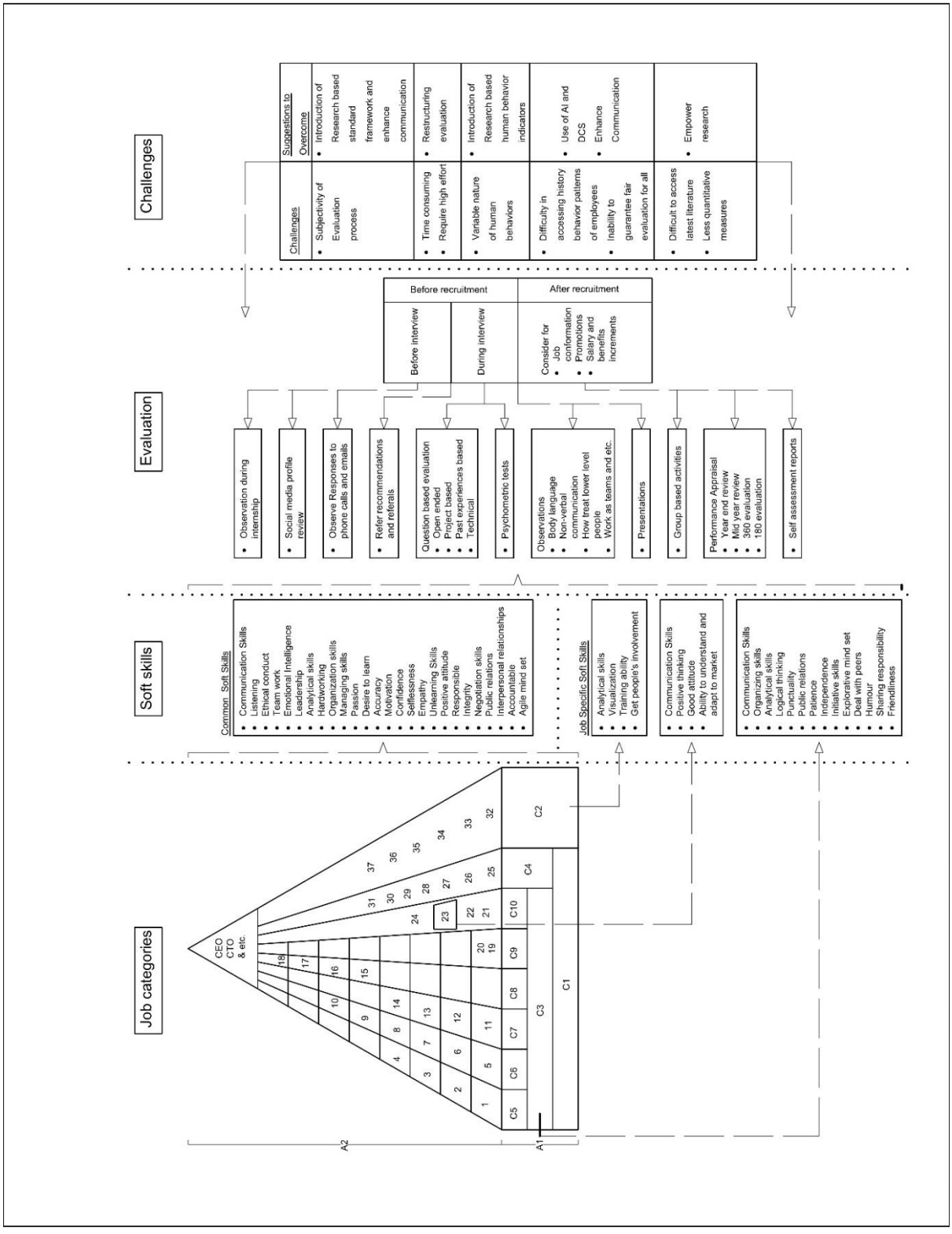
Reference Codes and Relevant Abbreviations Used for Part A2 in Figure 1

Reference Code	Abbreviations for Job Titles/ Job Title	Reference Code	Abbreviations for Job Titles/ Job Title
1	ABA	20	UXE
2	BA	21	CW
3	SBA	22	CC
4	CBA	23	Sales and Marketing Jobs
5	ASE	24	Finance and Accounting Jobs
6	SE	25	Technician
7	SSE	26	ASyE
8	LSE	26	DCE
9	PA	28	SWA/CTE
10	SA	29	H/IE
11	AQAE	30	SyE
12	QAE	31	SSyE
13	SQAE	32	BPMA
14	LQAE	33	BPRA
15	SDM	34	BA
16	SSDM	35	DEX
17	PM	36	BPRS
18	DPM	37	BPS
19	UIE		

**Abbreviations used in this table and figure 1 are described in table 2.*

Source: Results of Analysed Data

Figure 1: Conceptual Model of the Phenomenon of Soft Skills evaluation.



Source: Results of Analysed Data