Testing The Inverted-U Theory of the Stress-performance Relationship in Four BPO Companies in Metro Manila

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Abstract

The purpose of this study has been to identify the relationship between stress and work performance among the business process outsourcing (BPO) call center employees in the Philippines, with particular focus on testing the inverted-U theory relation. Two different stress scales were used across all four BPO companies in order to make a comparative analysis of the stress-performance relationship. The first stress scale aims to measure objective stress, which primarily refers to job-specific stress, while the second stress scale is meant to gauge general stress, which involves both work stress and stress outside of work (i.e., personal). While there is such variation between the two scales, they both measure psychological stress. Findings reveal a positive linear relationship between lower levels of objective stress and work performance, while a U-shaped curve has been found to exist between general stress and work performance and among identified specific groups such as males, non-college graduates, single employees, and night shift workers. The inverted-U stress-performance relation was only found to exist among companies with stronger wellness programs,

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female workers, college graduates, and workers with variability of shift schedule.

Keywords: stress, work performance, Business Process Outsourcing, inverted-U theory, Philippines

Introduction

Stress is a resounding complaint among workers across the globe. While the scientific community has recognized several approaches in defining stress, the popular and generally acceptable definition comes from the father of modern stress research, Hans Selye (1936), who described stress as "the non-specific response of the body to any demand for change." The degree to which working individuals has placed concerns about stress has been distinctly hyperbolic since the era of industrialization. According to the American Psychological Association (2012), around 69 percent of Americans regularly experience physical symptoms caused by stress while 67 percent complain about non-physical or psychological symptoms. The top two sources of stress among them are money-related and work-related, with the latter comprising work overload, co-worker tension, conflict with superiors, work-life imbalance, and lack of job security. This is congruent with a global study in 2009 of over 11,000 corporations across 13 countries commissioned by Regus, a global provider of innovative workspace solutions, concluding that the major source of stress is increased focus on profitability, with India reporting 45 percent. The United Kingdom reported that the risk of unemployment or business failure is the second greatest source of stress among corporations. Fifty-eight percent of US firms have experienced a significant rise in their workplace stress levels over the last two years. Likewise, the 2013 Forbes' Survey reported a 73 percent increase in stressed American respondents from the previous year. Japan noted the same trend happening in the country. In the European Union, more than half of 147 million workers complained about the number of tasks to be accomplished under very tight deadlines.

The Philippines is no different with respect to stress. The first Asia Health Survey spearheaded by Reader's Digest and Nielsen Media research found that 2 out of 5 Filipinos or almost half said that they

were affected by stress. It also resulted in Filipinos being the 'most stressed-out' among the seven countries in the Asian region included in the survey, contrary to popular belief that Filipinos are the most laid-back nationality (Inquirer News, 2007).

Based on recent studies on Filipino immigrants, occupational stress among Filipino nurses was found to be caused by multiple stressors, creating vulnerability and a negative impact on their performance at work (i.e., quality of care) (Connor, 2011). Adverse health outcomes have also been found to correlate with work-related stress among Filipino immigrants (Castro, Gee & Takeuchi, 2008). Others, on the other hand, have raised issues about having monotonous jobs lacking stimulation, which is also a problem for the global working community, no less (Norman, 2005).

Notably, these surveys and other existing stress researches are reporting more negative than positive impacts on the individual's general well-being and performance. Consistent with the findings of Muse, Harris, and Feild (2003), most of these global surveys have been seen to weigh in favor of the negative linear theory of stress and performance relation where high stress engenders low or poor performance (Allen, Hitt, & Greer, 1982; Friend, 1982; Greer & Castro, 1986; Harris & Berger, 1983; Jamal,1984; Lagace, 1988; Westman & Eden, 1991, 1996). In contrast, the positive linear theory, argues that a direct relationship of the two properties exists, albeit scantily supported by available stress researches (Arsenault & Dolan, 1983; Hatton, Brown, Caine & Emerson, 1995; Kahn & Long, 1988, as cited in Muse et al., 2003).

Adding to the complexity and challenge of establishing an unequivocal belief on this relation between stress and performance is the emergence of the inverted-U theory. This theory basically unites the two earlier discussed theories (positive and negative linear) in which it conjectures that a peak in performance is geared by moderate stress. Anything below or beyond the moderate stress range is bad. Such argument is just intuitively appealing (Muse, et al., 2003; Hancock, 2003). A number of stress researchers (Selye, 1974; McGrath, 1976; Sullivan & Bhagat, 1992) has indeed advocated for the inverted-U theory. However, the inverted-U has found insufficient corroboration from past empirical studies on stress and performance (Neiss, 1988; Friend, 1982; Hancock, 2003). Despite the apparent divergent opinions, the scientific community has found a common ground for their beliefs. These experts all perceive that the workplace

is one of the most critical contexts in which stress and performance should be further investigated.

Background and Rationale of the Study

This paper contributes to filling in the research gap by examining the relationship between work stress and productivity in one of the most dynamic Philippine industry, the Business Process Outsourcing (BPO). BPO, by definition, is "the delegation of one or more IT-intensive business processes to an external provider that, in turn, owns, administrates and manages the selected process based on a defined and measurable performance metrics" (Gartner, 2005, as cited in Gao, 2008). There are different types of BPO: 1) on-shore, 2) near-shore, and 3) off-shore. The Philippines and India are considered the top two countries to have the most number of off-shore BPOs, with most of their outsourcing partners based in North America. The two Asian countries are also identified as the most mature destinations in the competitive global environment for the outsourcing business among others (Panlilio, 2011; Everest Global, 2010).

In the Philippines, the BPO is labeled as the newest sunshine industry. It has come a long way since its inception in the country in 1992. Its significant contribution to the country's economic growth is evidenced by an aggregate generated revenue amount close to $6 billion and a projection of $25 billion by 2016.[1] As a matter of fact, the Philippines has recently outpaced India and has been hailed as the world's leading call center destination, with Manila named as the world's third top BPO destination according to Tholons 2013 survey. Being presently one of the country's chief economic drivers, the BPO industry indeed merits focus particularly on the welfare of the employees who are said to be the greatest asset of the companies (Byrne & Repp, 2007) and the main reason behind the industry's general success.

In 2013, Ruben Torres of BPO Workers Association of the Philippines (BWAP) observed that the BPO companies all over the country remain unorganized. [2] He argued that the BPO workforce is not protected from unhealthy working conditions, unfair labor practices and inadequate security in employment. This is consistent with the global trend that the trade unionization rate across industries is declining over the past decades (Goldfield, 1987; Kuruvilla, Das, Kwon,

& Kwon, 2002; Sarkar, n.d.). Recently, however, union advocates have begun seeing the light at the end of the tunnel. Within the same year of Torres' claim, Trade Union Congress of the Philippines- International Trade Union Confederation (TUCP-ITCP) entered into an agreement with the players in the BPO industry primarily seeking to promote employee welfare. A more recent activity supporting unions in the BPO industry took place in early 2015 where call center employees from West Contact Services Corporation (whose company name changed to Alorica Contact Services Corporation), started a picket-protest in front of their offices demanding a black and white assurance for their wages, benefits, tenure and working conditions.[3] Trade unions in this regard serve as ideal venues for furthering employee interests, and BPO companies not having trade unions available in the workplace should be a cause for concern. While efforts continue to address union membership issues, the employee-centric programs that will be initiated by the BPO management must not only engage employees to perform better at work, but must also be able to ensure that employees are provided suitable working conditions that shall not compromise health and general well-being, and hence decent work.

Scope and Limitations of the Study

This study has identified factors affecting work performance of a BPO employee but has maintained focus on perceived stress, which is psychological in nature, and the determination of its relationship with work performance. As a specific segment was tested, the proponent deemed it necessary to likewise limit the scope to the testing of the inverted U-theory and present recommendations based on the direct results. Muse, Harris, and Feild's (2003) critique on the methodology used for testing the inverted-U has been addressed in this paper in the hope of validating the theory and its applicability in a BPO work environment.

Four BPO organizations that vary in wellness programs and voice mechanisms have been studied. Given that the BPO industry lacks unions and genuine voice mechanisms, employee surveys and town hall meetings were the only elements on which the researcher has based the definition of strong and weak presence of voice mechanisms.

Meanwhile, in order to establish the results, the study has derived analysis and conclusions from three data sets: 1) the

feedback of the management in the form of a questionnaire; 2) participant employees to a set of carefully drafted questionnaires (i.e., demographic profile, stress scales) with high regard for the improvement suggestions of Muse, Harris and Feild (2003); and, 2) the actual metrics achievement of each employee reflected in his/her documented performance appraisal that will be used for validating previous stress studies. Stress levels were measured according to individual perceptions of the employees through the use of the two stress scales, the Objective Stress Scale and Perceived Stress Scale. Additionally, this study did not comprehensively measure the biological state and predisposition of the individual as this study assumes that perception is sufficient to measure a significant degree of reality. People are able to make decisions and consequently act based on their perceptions towards reality, which the research believes can already ascertain the employees' level of stress.

As the chosen method for gathering data, the survey in which the duration and participant profile have been defined was conducted among call center agents in BPO companies situated in Metro Manila.

Stress: A Brief History and Origins

As a concept, stress is not uncommon in this day and age. In fact, it is a normal and inevitable aspect of life. Stress became a popular buzzword intriguing known scholars from both past and present generations (Staal, 2004, p.1). Its definition extends from metallurgical strain to being at a loss for means of solving a problem (Staal, 2004). According to Stokes and Kite (2001), the versatility of the term stress is its own undoing, causing a wide divergence in views among scientists (as cited in Staal, 2004).

Lumsden (1981) argued that even before the 15th century, people have already been using the term stress to describe adversity, affliction, and hardships (as cited in Lazarus, 1984, p.2). During the 17th century, Robert Hooke discovered the law of elasticity, in which an empirical approach to stress was established. Hooke's law was one of the first to explain the linear relationship of stress and strain for a bar in simple tension using a mathematical equation (Gere & Goodno, 2012). The three key elements in elasticity were discussed by Hinkle (1997): load as the external force; stress as the force on unit area

which develops as a product of the externally applied force; and strain as the relative deformation caused by stress (as cited in Lazarus & Folkman, 1984).

In spite of the earlier development of stress as a concept, research did not become systematic and human-centric until the 19th century (Lazarus & Folkman, 1984). Its prevalence worldwide stirred the interest of scholars whose ultimate academic pursuit is to identify and explain the causes and effects of stress in humans. Popular scientists who pioneered extensive scientific, methodical research on stress include Selye (1936, 1951, 1956, 1974), Cannon (1920, 1932), Lazarus (1966, 1984, 1983), Hinkle (1977), and Wolff (1953) (as cited in Lazarus & Folkman, 1984).

The topic prevailed originally in the physical sciences and eventually in the field of psychology and other social sciences such as classical sociology, which associate stress with negative outcomes (Lazarus & Folkman, 1984). Karl Marx (1927) protested against the "alienation" felt by the masses; Weber (1905) explained how a bureaucratic setup turns into an 'iron cage' of control; and Durkheim (1893) described the pathological effects brought about by 'anomie' or 'normlessness' in a society (as cited in Hughes, Sharrock & Martin, 2003).

There are as many definitions of stress as there are stress researchers (Staal, 2004). As a consequence, stress definitions multiplied and have been associated with different concepts. Amid numerous definitions, that of Cohen, Kessler, and Gordon (1995) appears to be the most apt to use throughout this study. Their process model defines psychological stress as stress occurring when an individual perceives that environmental demands tax or exceed his or her adaptive capacity (as cited in Cohen, Janicki-Deverts, Miller, 2007). Such a definition pretty much echoes that of Monat and Lazarus (1991) and Leung et al. (2007), wherein they argued that stress is simply brought about by the discrepancy between an individual's perceived ability and his or her actual ability to deal with tasks effectively (as cited in Leung et al., 2008).

The Relationship of Stress and Performance

Much of the research on stress proved how much stress as a topic has gained attention over the past few years, particularly on

employees, on self-reported stress, and on objective measurements (Chida & Steptoe, 2009; Maina et al., 2008; Sluiter et al., 1998, as cited in Leung, Chan & Olomolaiye, 2008). Considering a factional research community holding divergent opinions on stress, the relationship of stress and performance is not easy to define. Certain studies did not find any relationship between stress and performance (Matteson, Ivancevich, & Smith, 1984; Orpen & Welch, 1989). while majority of stress-performance researches corroborated with at least one of these three popular theories—positive linear, negative linear, and inverted-U (as cited in Muse et. al., 2003).

Positive Direct Relationship

Performance can only get better with increasing stress. This is the mantra of believers in the positive linear theory. Jamal (2011) believed that some earlier researchers have claimed that problems, anxieties, and challenges are opportunities for constructive activities and enhanced performance. Meglino (1977) purported that optimal performance is achieved at the highest level of stress. He even added that low to a complete absence of stress only leads to under-performance. Arsenault & Dolan (1983) took part in supporting the positive theory. Work content stress was found to decrease absenteeism rate among the 1,200 employees who were administered an occupational stress survey and whose actual attendance records were gathered from personnel files. Absenteeism among working individuals with diabetes is the observed withdrawal behavior that causes loss in productivity (Boles, Pelletier, & Lynch, 2004a). In the same year, another study was conducted that validated the fact that reducing health risks will yield positive changes in productivity at work (2004b). Other researchers who supported the positive linear theory include Kahn and Long (1988); Hatton, Brown, Caine and Emerson (1995) (as cited in Muse et al., 2003).

Negative Inverse Relationship

This relationship, on the contrary, posits that stress can only impair performance. To achieve high performance, as it is assumed, the individual is required to be at its healthy and focused state. In so many studies linking stress to ill-health and employee turnover, performance is fundamentally compromised. Hundreds of studies have

corroborated the notion that the two concepts, stress and performance, have a strong cause-and-effect relationship. In the medical practice, military physicians who are burdened with tasks that are not very much related to patient care and who are exposed to travelling so often find themselves more stressed than other physicians in the workplace and in the industry. Consequently, the greater stress that these military physicians experience results in higher turnover intent and turnover cognition (Meredith, 2007). A similar observation was made by Zhang and Lee (2010) in the 304 employees of the Chinese skeleton government where intention to leave their jobs prevailed because of stress in perceived politics rooting in the organizational culture. Project managers also find themselves quitting their jobs due to organizational role stress, role-space, and role set conflicts (Baerga Cordero, 2009).

In a sample of management personnel, Friend (1982) compared measures of pre-course ability and final exam performance. Primary findings were that the corrected performance scores had vividly showed a strong negative linear relationship with both work load and time urgency. The data suggest that increasing psychological stresses such as intuitively high work load and urgency consistently harm performance across the whole range of given variables. Within the same period, Jamal (1985) made an effort to uncover the real relationship between work stress and performance among managers and blue-collar workers. He proposed that there are four possible outcomes of the study: positive linear, negative linear, inverted-U, and no relationship at all between stress and performance. Data were gathered from employed 227 middle managers and 283 blue-collar workers in a big Canadian company. For analysis, Jamal used bivariate multiple regression and hierarchical multiple regression that proved a negative relationship between work stress and supervisory ratings of performance. He concluded that stress drains one's energy, focus, and time that perceptibly harm performance (as cited in Moore-Tolliver, 2007). Even findings in a similar study of his, albeit more recent and focused this time on employees working in a large North American multinational corporation in Malaysia and Pakistan, consistently supported the negative relationship (2011). Other research that affirmed this claim includes those by Vroom (1964); Harris and Berger (1983); and Westman and Eden (1991, 1996).

The Inverted-U Theory

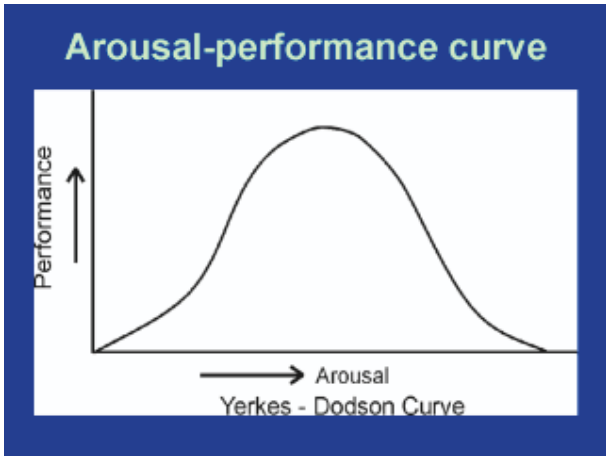
The scientific community traces the roots of this theory in the experiments of Yerkes and Dodson where the curvilinear relationship of arousal and performance was first conceptualized and established (Staal, 2004). These pioneer researchers examined the effect that different intensities of electric shock had on the learning of mice. Results suggested that with moderate intensity electricity, they tend to move faster and discern properly, whereas with very low and very high intensity electric shocks, they tend to move slowly, or move fast but are unable to discern the correct doorway from the wrong one.

Because of the theory's strong appeal to human intuition, it dominated the scene and remained undisputed for some years. Concept-wise, many researchers have aligned findings with the inverted-U hypothesis (McGrath, 1976; Selye, 1975; Sullivan & Bhagat, 1992). It is also noticeable that most of the literature supporting the inverted-U used arousal and activation to relate with performance. But using the word "stress" per se, only two have been found to support the theory (as cited in Muse et. Al., 2003; Anderson, 1976; Srivastava & Krishna, 1991). Nonetheless, in the 21st century, the theory continues to gain more supporters even in the field of kinetics. The recent work of Landers & Arent (2001) proved that the inverted-U theory holds true in sports, although they added that the stress-performance curvilinear relationship can be dynamic depending on the characteristic of the individual (i.e., extroverted or introverted, low skilled or high-skilled).

In spite of the supporting studies for the inverted-U, some remain skeptical, pointing out and attacking loopholes including ambiguities in the model. Yerkes and Dodson's law of performance has been criticized, not least for including its mice-to-man extension of findings, and assuming the general applicability of a simple laboratory learning paradigm to actual complex performance issues (Staal, 2004). The theory is further criticized for its methodological flaws (i.e., vague details on the electric shock calibration) and failure to accurately measure actual stress (even arousal) in these mice (p.3). The earlier paper of Landers (1980) argued that the inverted-U theory merely claims that there is a curvilinear relationship between stress and performance but does not convincingly explain the internal state or process responsible for it. Other studies that have attempted to replicate and validate the theory using a variety of animal samples

have failed to produce comparable, consistent results. Because the non-supportive studies apparently outnumber the promoters, several critics recommended that the theory be 'silenced' (Brown, 1965), and finally 'dismissed' and even 'retired' (Neiss, 1988).

Figure 1. Yerkes – Dodson's Arousal-Performance Curve



Source: Bibliotheca Alexandrina (n.d.). Retrieved from https://www.bibalex.org/supercourse/lecture/beh0091/009.htm

The weak support for the inverted-U theory has intrigued a group of researchers enough to look into and challenge the veracity of the methodologies used in the past studies with regard to stress and performance. In rigorous research done by Muse, Harris and Feild (2003), the central focus was to investigate the reasons for such little support being received by the inverted-U theory, particularly the left side of the graph consistent with the positive linear relationship between stress and performance. The critique paper revealed that on top of the definitional problems of the word "stress", there are three other probable factors that could have prevented a fairer test of the controversial theory over the past few decades.

Muse et al. (2003), upon pointing out methodological flaws in majority of studies testing the inverted-U theory of stress and performance, have proposed solutions for a fairer test of the controversial theory. First, whether stress is defined as a stimulus, response, or stimulus-response in future studies, the definition must reflect both the right and left sides of the curve. It follows that

methodologies and research instruments of future studies must be designed guided by definitions consistent with the inverted-U. Muse et al. (2003) emphasized that if a stimulus approach is used, then stress must be treated as the absolute demand level ranging from none to great (p.356). If a response approach is employed, then stress must be defined as the level of arousal or activation experienced by the person, and similarly quantified from none to great. If a stimulus–response approach is used in the study, then it must be consistent throughout the paper where distinctions are also made between the misfit due to under-load and overload. Similar to Jex et al.'s (2002) belief as well as McGrath's (1976) hypothesis, Muse et al. (2003) also discourage future researchers from using the word "stress" in questionnaires or interviews and recommend that they frame the items in a way that will allow them to view it as a challenge rather than a threat to their well-being and/or performance in general. Other recommendations include selecting participants who are likely to experience various amounts of stress and administering measurements when respondents are presumably going to experience different levels of stress. Muse et al. (2003) added that an experimental type of research design is the stronger approach among others, it being able to measure performance multiple times as stress or stressors are manipulated.

Stress and Performance in the BPO workplace

Konzter (2005) conducted a survey among BPO companies in the hope of determining their concept of success in the BPO industry. It was found that two-thirds of these surveyed companies believe that cost reduction is a more important success measure than customer satisfaction. MacGibbon & Schumacher (2006) had similar observations in their study about BPO companies, placing greater emphasis on cost reduction over productivity. These two scholars argued that genuine success will be attained not so much through saving costs but more through improving productivity. With the growing, and increasingly competitive, labor markets in India and Philippines leading to salaries that bring about inevitable reduction in labor savings, BPO companies must strategically renew its focus to identify other ways that can sustain profitability (p.48). The authors added that the key to success is broader performance goal- setting for

the specific outsourced function/s that affect/s skills, management quality, and efficiency (p.48).

According to an International Labor Organization (ILO) official, BPO companies demand higher productivity levels among its Filipino employees.[4] While BPO management is expected to leverage its maximum potential and build plans around its own version of success, the BPO employees continue to report the negative impacts of stress that are specific in their work environment. Messenger (2010) admitted that the downside of BPO employment is stress and the challenge of working at night just to service distant customers from different time zones 'real time'. Even though the primary business of these BPOs involves both voice and non-voice service or back operations, the Philippine BPO is collectively referred to as 'call centers' since around 70 percent of the employees in the industry are into 'voice' services or call centers (ILO, 2010; Britanico, 2014). Three out of four workers in a sample of BPO call center employees experienced moderate to heavy work pressure, and one out of two claimed that s/he is neither happy nor unhappy at the workplace (Bool-Sale & Sale, 2010).

Women are also a significant population in the BPO setting. According to the 2005 survey of National Statistics Office (NSO), 55.4 percent or 45,225 of the 81,578 workers in the Philippines were women, dominating the gender ratios in medical transcription (74.5%), data processing (65.2%), and call center activities (58.8%). A substantial number of them chiefly complained about the working conditions taking their toll on women's health and safety, especially on those working in the night shift (Bool-Sale & Sale, 2010, p.2; ABS-CBN News, 2014). This is just one of several factors that instigate voluntary turnover. According to the Call Center Association of the Philippines (CCAP), BPO turnover rate reached 60 to 80 percent, which seems to be the highest recorded worldwide (as cited in Bool-Sale & Sale, 2010, p.4). Bool-Sale & Sale (2010) conjectured and later on concluded that rates of voluntary or employee-initiated turnover reflect the lack of genuine voice mechanisms, with the two properties showing a negative or inverse relationship (p. 13). The existing mechanisms (i.e., team meetings, email, bulletin board, etc.) were apparently not enough to empower employees, and thus are considered forms of 'pseudo-participation' (p. 13).

Stressed employees in the BPO workplace continue to report negative effects on productivity. Findings in a research sample of 50 Indian male BPO employees showed that regular shift changes

impair cognitive functions (Shwetha & Sudhakar, 2012). Changes in work schedules or shifts have indeed been identified to be a cause of stress among the BPO workers, with cognitive functions being a known measure of performance at work. Similarly, there are other stress-inducing factors in a BPO company that adversely affect performance. These factors include odd working hours, sleep deprivation, irregular dietary habits, and many more (p.114).

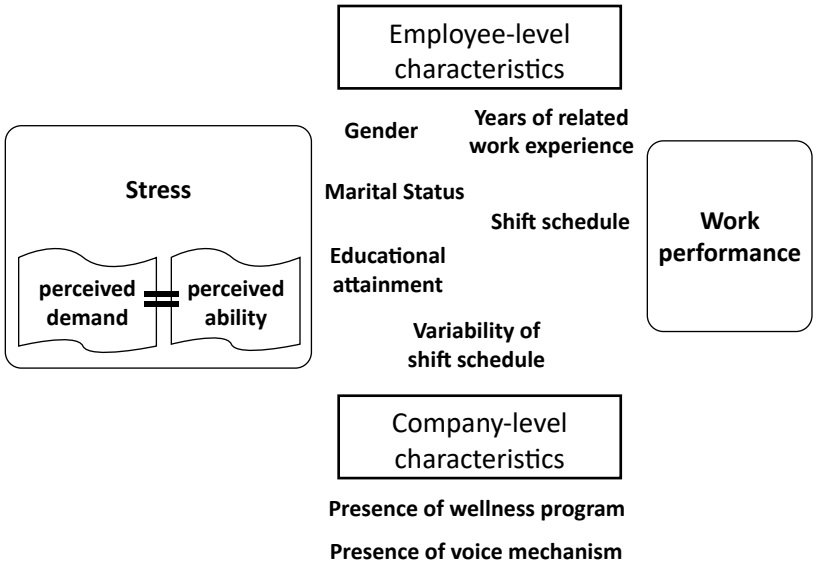
Given India's reputation as an established outsourcing destination, with a history going back as early as the 1980s, bin Yahya (2012) argued that the said industry has now entered a level of maturity where constraints in development and expansion are the primary concerns. These constraints cited by bin Yahya (2012) include lack of employable talent, social norms, increasing operational costs, and breaches in security of confidential customer information. He proposed some possible solutions that are geographical in nature, specifically the recruitment and relocation of BPO companies from tier one to tier two and tier three cities in India.

While there are already a number of available studies done on the Indian BPOs, much has yet to be explored about BPOs in the Philippines. Employees' stress and performance relation is one of the subject areas that need academic attention, in light of its significant financial impact on the BPO industry as well as its multi-faceted impact on the national level.

Operational Framework

This study hopes to adequately measure the stress levels of call center employee respondents in order to validate the relationship of perceived stress and actual performance. The operationalization of such a study will entail the identification of the sample size, determination of suitable stress scales and subsequently, a focused analysis of results that shall be aligned and be further discussed in succeeding chapters of this paper.

Figure 2. The relationship of stress and performance and the intervening variables



Nonetheless, to serve as a preamble to the succeeding sections, the framework shall be guided by the following assumptions:

Dependent Variable	=	Work Performance;
Main Independent Variable	=	Stress (Objective Stress and General Stress)
Intervening Variables	=	Years of Related Work Experience, Educational Attainment, Gender, Marital Status, Shift Schedule and Variability of Shift Schedule

The identified components are further explained below:

Dependent Variable

Work Performance – pertains to the overall monthly performance rating provided to the employee by his/her superior based on achievement of targets, behavior, and attitude towards work and colleagues;

Main Independent Variables

Stress – is the discrepancy between perceived demand and assessed abilities to effectively cope with those demands (Coyne & Lazarus, 1980) as individually reported by BPO employees reflected in the questionnaire. The two types of stress to be measured in this study are:

Objective Stress – is a kind of perceived stress that considers the individual's ability to carry out job-related task/s involving a certain degree of difficulty or challenge. It is the difference between expected ability and actual ability where a negative value shall suggest lack of stress; zero difference will suggest moderate stress; and a positive outcome shall indicate too much stress. This is measured in Gmelch's stress scale which is represented by Stress1 in the stress questionnaire for employees;

General Stress – is a kind of perceived stress that describes the overall feeling of the individual about past situations and the degree to which they are deemed to be stressful. Feeling stressful means feeling unwell, unable to control things and unable to manage irritation in one's life. General stress therefore describes stress even outside work. This is measured in Cohen's Perceived Stress Scale (PSS) which is also represented by Stress2 in the stress questionnaire for employees. The questions are of a general nature and items in the scale were meant to gauge how unpredictable, uncontrollable, and overloaded the respondent finds his/her life.

Intervening Variables

Work Duration – expressed in terms of number of years of related work experience;

Gender – classified between males and females;

Marital Status – classified between married and non-married employees;

Educational Attainment – highest academic degree earned by the employee and is classified between college graduates and non-college graduates;

Shift Schedule – describes the work shift of the employee; day shift work is within starting hours from 4:00 a.m. to 9:00 a.m. and ending hours from 1:00 p.m. to 6:00 p.m.; mid-shift starts within 10:00 a.m. to 3:00 p.m. and ends within 7:00 p.m. to 12:00 midnight; night shift starts within 7:00 p.m. to 11:00 p.m. and ends somewhere between 4:00 a.m. and 8:00 a.m.;

Variability of Shift Schedule – classified between workers who have rotating shifts every specific period and those with fixed work schedule

In order to test for the true relationship of perceived stress and work performance, the demographics of the individual employee, including other surrounding factors, must be controlled for.

Methods

The rationale behind the methodology for this paper was based on the hypothesis that the relationship between stress and work performance follows an inverted–U curve. Four Metro Manila-based BPO organizations that vary in size, company wellness/engagement programs and voice mechanisms were chosen for the study. Out of the many BPO companies randomly contacted to participate, these are the four BPO companies who gave favorable responses to the invitation to be part of the study. The proponent also utilized her existing network that assisted in identifying the key contacts in each of the four companies.

As to the analysis and conclusions of this paper, these were derived from three data sets that took into consideration the improvement suggestions of Muse, Harris and Feild (2003): 1) the feedback of the management in the form of a questionnaire; 2) participant employees to a set of carefully drafted questionnaires (i.e., demographic profile, stress scales); and, 2) the actual metrics achievement of each employee reflected in his/her documented performance appraisal that was used for validating previous stress studies. Stress levels were measured according to individual perceptions of the employees. As a caveat, this study did not comprehensively measure the biological state and predisposition

of the individual on purpose as it assumed that individual employee perception is sufficient to measure a significant degree of reality.

To make the sample representative of the actual population of the call center agents, the researcher used the established simple random sampling technique.

Study Sample

In this study, the researcher classified the group and defined strong and weak presence of wellness programs based on the number of elements present in each company. To differentiate strong from weak presence of voice mechanisms, the researcher identified two of the most important elements of voice mechanisms: 1) employee surveys; and 2) town hall meetings. Having only one or neither of the two elements present in the company is considered as having a weak presence of voice mechanisms. This is a limitation in this study given that unions and other voice mechanisms that are thought to be a genuine reflection of strong employee representation/voice are largely absent in the BPO industry.

Table 1. Sample Table

RESPONDENTS (actual response results)	Companies with strong presence of wellness programs		Companies with weak presence of wellness programs
	With strong presence of voice mechanisms	With weak presence of voice mechanisms	With weak presence of voice mechanisms
Agents	79	242	84
			Total 405

Table 2. Company-Level Characteristics Definition

SIZE

Small Call Center	With less than 200 employees based on DTI definition
Large Call Center	With more than 200 employees based on DTI definition
PRESENCE OF WELLNESS PROGRAMS	
Strong wellness	With 5 or more wellness programs in place
Weak wellness	With less than 5 wellness programs in place
PRESENCE OF VOICE MECHANISMS	
Strong voice	With 6 or more elements or avenues for representation and participation; This is also indicated by the conduct of both employee surveys and town hall meetings
Weak voice	With less than 6 elements or avenues for representation and participation

Table 3. Profile Summary Per Participating Company Relative to its Workforce Size, Existing Wellness Programs, and Voice Mechanisms

Company	Total Employees	Total Employees in the Call Center	Non-agents (team and operation managers)	Agents in %	Agents Sample	% Agents Sample in %
1	460	292	20	63%	79	29%
2	500	350	30	70%	250	78%
3	28	16	1	57%	15	100%
4	700	350	22	50%	69	21%

Measures

Work performance. The BPO companies keep track of each employee's monthly performance. An individual's overall performance is measured against the set targets or key performance indicators (KPIs) of the company that include the immediate supervisor's rating of the employee's observance of the company's upheld values and brand attributes. Thus, the researcher no longer used other methods to measure performance since the actual available appraisal records have been sufficient for analyzing its relationship with the corresponding perceived stress.

The researcher looked into the respondents' stress levels and performance appraisals for the month of May 2015. Self-reported

stress levels were experienced during the previous month (May) for which the performance appraisal was done.

STRESS. There were 413 employee questionnaires that the researcher personally distributed to the team managers within the period of March-May 2015. Two weeks preceding the first batch of actual surveys, a pre-test was conducted among 10 call center employees from a BPO company outside the chosen four companies to check the lucidity of the questions from a call center employee's standpoint and measure the average speed of completing of the surveys. The same version of the questionnaire was subsequently distributed among the actual call center agent respondents within the period of June 2015. Out of the 413 questionnaires, only 405 were returned to the researcher sometime between June 2015 and October 2015. Throughout the course of the study, the researcher ensured that no part of the questionnaire, verbal instruction or conversation with the chosen respondents explicitly reflected or used the term "stress". The aim was to neutralize whatever negative perceptions the respondents have been used to associating with the term "stress". Each BPO employee answered the latter part of the questionnaire in which two established stress scales have been merged: 1) Objective Stress Scale (Gmelch, 1982, as cited in Leung et al., 2008); and 2) Cohen et al.'s (1984) Perceived Stress Scale (PSS). While the questionnaire for employees merged two established scales to measure stress levels, analyses of the stress-performance relationship have been conducted separately for each scale. Considering that research gaps are believed to root from applied methodologies of past studies, this paper attempted to validate whether or not the two stress scales have been consistent in displaying a similar trend (i.e., inverted-U) when each is evaluated against actual performance.

The Objective Stress Scale (Gmelch, 1982, as cited in Leung et al., 2008)

This scale attempts to measure the stress of employees caused exclusively by job-related tasks. Discrepancy between the individual's expected and actual abilities to manage putative stressors at work was assessed (Gmelch, 1982, as cited in Leung et al., 2008). The participants were requested to individually rate their perceptions about their expected ability or work demand as well as their actual ability in various dimensions of their work, selecting ratings from 1

(none) to 7 (a great deal) (Leung et al., 2005a,b, 2006, as cited in Leung et al., 2008). The values inputted for actual ability were subtracted from expected ability or demand and per question, possible results can show whether the employee is under-stressed (negative [-] difference), overstressed (positive [+] difference), or experiencing moderate stress (0 difference). The individual's overall stress level for that communicated duration was calculated by summing up the differences between ratings of expected ability and actual ability.

Perceived Stress Scale-14 (PSS-14; Cohen, 1984)

This scale aims to measure overall psychological stress and the degree to which life situations are deemed stressful. The PSS-14 consists of seven positive and seven negative questions. Out of the seven negative, there is one where the term "stress" was used (i.e., "In the last month, how often have you felt nervous and "stressed?"). The researcher replaced this original term with the word "challenged" as research showed that the term "stress" elicits a negative response from individuals, thus, promoting bias in measuring stress (McGrath, 1976; Muse et al., 2003). This is one of the identified potential sources of the problem plaguing stress research that can also account for why there are more stress studies supporting the negative over the positive theory. Additionally, the prevailing studies on stress and performance have not been able to use methods that would have impartially measured the left half of the curve—the under-stressed conditions. To address this, PSS, a 5-point Likert scale, has been found to be a good measuring tool as it allows for responses that can range from one (under-stressed) to five (over-stressed) and scoring that includes zero to represent the under-stressed condition. PSS-14 scores are obtained by reversing the scores on the seven positive items, e.g., 0=4, 1=3, 2=2, etc., and then summing across all 14 items. Items 4, 5, 6, 7, 9, 10, and 13 are the positively stated items. All answers per employee were encoded in a statistical program, SPSS, for correlation and regression analyses. An alternative statistical program, PSPP, was used to second check some of the runs.

Intervening variables. The same questionnaire that each employee accomplished also contained questions that captured their demographics (part 1 of the employee questionnaire). To provide a background of the company, the management or the authorized representative of each participating company has been

asked to accomplish to a separate questionnaire describing the BPO organization in terms of employee size, enthusiasm in promoting wellness, and identifying available voice mechanisms in the workplace. As an element of voice mechanisms or representation, employee survey is one of the company's initiatives used to gather feedback and encourage a participative approach in dealing with employees. Call center agents have been asked to rate their participation in the periodic employee survey from a scale of 1-10 (10 being highly participative). The proponent further classifies this and interprets the results as having low (5 and below), moderate (6-7), and high (8-10) levels of participation per individual.

Regression model

To determine the effect of stress on work performance, regression was used, controlling for the presence of wellness program and socioeconomic characteristics of the employee. The study estimates the following regression equation:

$$FINALPERF = \alpha + b1\,(WORKEX) + b2\,(collegerec) + b3\,(malerec) + b4\,(married) + b5\,(nightshift) + b6\,(dayshift) + b7\,(rotshiftrec) + b8(STRESS) + b9\,(STRESS)2$$

Where:

- FINALPERF is the dependent variable and is the work performance of the employee.
- α is a constant
- b1,…,b9 are coefficients of independent variables

Independent variables:

- WORKEX is the total years of working experience of the employee related to his/her current job.
- Collegerec is a dummy variable that equals to 1 if the employee is a college graduate and 0 if otherwise.
- Malerec is a dummy variable that equals to 1 if the employee is male and 0 if the employee is female.

- Married is the marital status of the employee. This is a dummy variable that equals to 1 if the employee is married and 0 if otherwise.
- Nightshift is a dummy variable that equals to 1 if employee's predominant shift schedule is within starting hours from 7pm to 12am and ending hours from 4am to 9am; it equals to 0 if otherwise.
- Dayshift is a dummy variable that equals to 1 if employee's predominant shift schedule is within starting hours from 4am to 9am and ending hours from 1pm to 6pm; it equals to 0 if otherwise.
- Rotshiftrec is a dummy variable that equals to 1 if the employee's shift changes every specific period of time and 0 if employee's shift schedule is fixed.
- STRESS is the level of stress of the employee during the month being evaluated in the survey (i.e., May 2015). The coefficients of the independent variable stress and stress squared will jointly determine the shape of the curve (i.e., positive linear, negative linear, U, or inverted-U)

Determining whether or not a non-linear/curvilinear relationship exists between stress and performance has been the aim of this study. In view of this, the given linear regression equation can transform the stress variable predictor in a manner that has enabled it to produce a curvature, hence the inclusion of the square of the STRESS variable. The coefficient of the variable STRESS indicates the direction of the overall linear relationship (e.g., positive when work performance increases as the level of stress initially increases and negative when work performance decreases as the level of stress initially increases). The coefficient of the square of the STRESS variable indicates direction of the rate of change. The results can then be interpreted as follows:

Table 4. Nature of Relationship of Stress and Work Performance Based on the Regression Results

Coefficient of the Stress Variable in the Regression on Worker Performance		Interpretation of the relation between stress and worker performance	Shape of the relationship
STRESS	STRESS Squared		
+	Not significant	**Positive linear** (Increasing levels of stress increases work performance with no significant change in rate of increase)	
-	Not significant	**Negative linear** (Increasing levels of stress decreases work performance with no significant change in the rate of change)	
-	+	**Concave or Inverted U-shape** (Increasing levels of stress initially increases work performance, but after a certain threshold, subsequent increases in the levels of stress decrease work performance)	
+	-	**Convex or U-shape** (Increasing levels of stress initially decreases work performance, but after a certain threshold, subsequent increases in the levels of stress increasework performance)	

Separate regressions were estimated for two types of stress indicators—objective stress (STRESS1) and general stress (STRESS2). To determine the variation in the effect of stress on work performance, regressions were also estimated by the presence of wellness programs (strong or weak), presence of voice mechanisms (strong or weak), gender, marital status, educational attainment, shift schedule, and variability of shift schedule.

Results

Majority of the respondents (69.24%) have had ratings above the standard passing score across all four companies, which is above 60 percent. The perfect score for all companies is 100 percent, and while the same is the score ceiling for Companies 2, 3, and 4, Company 1 has room for over-achievers in that it welcomes those who exceed their targets per month and grant higher than 100-percent ratings, which constitutes 10.65 percent of the total sample.

Table 5. Profile of Employee Respondents Relative to Presence of Wellness Programs and their Performance Ratings

	Companies with strong presence of wellness programs (N=321)	Companies with weak presence of wellness programs (N= 84)	TOTAL = 405
Actual Work Performance Rating			
Below 61%	2.18	15.47	4.95
61-80%	72.58	55.97	69.24
81-100%	12.10	28.56	15.16
101-173% (exceeding company target)	13.14	0.00	10.65
Total	100	100	100

In relation to objective stress, employees have been found to experience low to moderate stress during the appraised month. It takes up 56.06 percent of the total number of employees who had stress levels zero and below. In regard to general stress, more than 80 percent reported 21-46 stress levels, and only 11 percent of those have low to moderate stress. It is quite notable that low to moderate stress is predominant among performed tasks exclusive to work (i.e., objective stress), while higher levels are reported by employees experiencing stress involving other issues outside work (i.e., general stress).

Table 6. Profile of Employee Respondents Relative to Presence of Wellness Programs and Stress Levels

	Companies with strong presence of wellness programs (N= 321)	**Companies with weak presence of wellness programs (N= 84)**	**TOTAL = 405**
Objective Stress Levels (Stress 1)			
-25 to 0	56.69	52.37	56.06
1 to 10	40.21	39.30	39.75
11 to 39	3.10	8.33	4.19
Total	100	100	100
General Stress Levels (Stress 2)			
0 to 20	7.15	19.04	11.11
21 to 46	92.85	80.96	88.89
Total	100	100	100

Socioeconomic Demographics

Work Experience

These call center agent respondents are relatively tenured and experienced, with most of them (74.32%) having a total of three or more years of related working experience.

Education

In companies with stronger presence of wellness programs, there is a higher percentage of employees who did not earn their college diploma (41.43%) while only less than 8 percent are undergraduates in companies with weak wellness programs. Total ratio of graduates to non-graduates is 3:2.

Gender

Females are the dominant group, comprising more than 50 percent of the total sample. Although gays and lesbians are groups

progressively accepted in industries such as the BPO, only 14.35 percent in this study reported to belong to this group.

Marital Status

These four companies have more single employees than non-single employees (i.e., married, separated, widowed), totaling almost 80 percent of the sample.

Shift Schedule

With respect to shift schedule, 48.15 percent work at night. The rest are assigned to work during the day or to take the mid-shift whose working hours can start anytime from 4:00 a.m. to 3:00 p.m. and end from 1:00 p.m. to 12:00 midnight.

Variability of Shift Schedule

Relative to their wellness programs, companies have as much variability as their agents' shift schedule. Variability can range from none (i.e., fixed schedule) to as often as twice a week depending on the arrangement with the employee. In companies with weak presence of wellness programs, most common is a fixed schedule (75%), while companies with strong presence of wellness programs have variability of shift schedules spread mostly among once a quarter, once a month to twice a month frequencies. Across the study sample, twice a month has been seen to be the most common shift change (36.3%).

Linear Regression Analysis

This part investigated the predicting powers of the identified constructs on the dependent variable (i.e., work performance) using linear regression, and observed whether or not the hypotheses could be confirmed or refuted. Apart from looking at the relationship of stress and performance within the entire sample, other regressions were done to test variation of the impact of stress on performance. The findings from the separate regression analyses led to a rejection and modification the established hypotheses.

Table 7. Profile of Employee Respondents Relative to Presence of Wellness Programs and Employees' Socioeconomic Demographics

	Companies with strong presence of wellness programs (N= 321)	Companies with weak presence of wellness programs (N= 84)	TOTAL
Years of Related Work Experience			
Less than 1 year	8.72	7.14	8.39
1-2 years	15.88	22.61	17.29
3-5 years	38.63	44.05	39.75
More than 5 years	36.77	26.20	34.57
Total	100	100	100
Educational Attainment			
Some college	41.43	8.33	34.57
College Graduate	58.57	91.67	65.43
Total	100	100	100
Gender			
Straight male	30.94	35.71	31.93
Straight female	53.44	54.76	53.71
Gays	9.38	5.95	8.66
Lesbians	6.25	3.57	5.69
Total	100	100	100
Civil Status			
Single	76.64	66.00	77.04
Married	16.51	22.06	16.79
Separated/Annulled/Divorced	6.54	12.50	5.93
Widowed	0.31	0.00	0.25
Total	100	100	100
Shift Schedule			
Dayshift	40.19	19.05	35.80
Mid-shift	7.17	50.00	16.05
Nightshift	52.65	30.95	48.15
Total	100	100	100
Variability of Shift Schedule			
Fixed schedule	3.12	75.00	18.02
Once a quarter	26.48	3.57	21.73
Once a month	20.87	0.00	16.54
Twice a month	41.74	15.48	36.30
Once a week	4.50	2.38	3.70
Twice a week	3.74	3.57	3.70
Total	100	100	100

Table 8. Regression Estimates of Objective Stress and General Stress on Work Performance Controlling for the Intervening Variables

Variable	Objective Stress (STRESS1)		General Stress (STRESS 2)	
	Coefficient	t-stat	Coefficient	t-stat
Constant	0.66*	21.08	0.84**	9.65
Objective stress index	0.01**	4.74	-	-
Objective stress index squared	-0.00	-1.92	-	-
General stress index	-	-	-0.01*	-2.17
General stress index squared	-	-	0.00*	2.00
Work experience in years	0.00	0.28	0.00	0.54
College graduate	0.07**	4.23	0.07**	3.96
Male	-0.03	-1.52	-0.03	-1.55
Married	0.01	0.41	0.01	0.30
Day shift	0.13**	5.24	0.13**	4.96
Night shift	0.00	0.17	0.00	0.10
Shift schedule variability	0.03	1.46	0.04	1.76

** significant at .01 level; * significant at .05 level

Hypothesis 1: There is an inverted-U relationship between stress and work performance in the BPO call centers in which the effect on performance varies by type of stress (i.e., objective stress [Stress1] vs. general stress [Stress2]).

Multiple regressions were estimated to test the presence of a U-shaped relationship between stress and work performance by including in the regression equation both the stress variable and the square of the stress variable to capture the possibility of a curvilinear relationship. Table 9 presents the regression coefficients for both the STRESS and the square of STRESS variables, for both objective and general stress, and controlling for the socioeconomic intervening variables. Objective stress has been found to have a positive linear relationship with work performance. For every unit increase in objective stress, there is a corresponding 0.01 percentage point increase in work performance, holding all other variables constant.

With respect to the relationship between general stress and work performance, a U-shaped curve is indicated, meaning that increasing general stress initially reduces work performance but after reaching a certain point, higher levels of general stress produces a positive effect on work performance.

Table 9. Summary of the Regression Coefficients of the STRESS1 (Objective Stress) and Square of STRESS1 Variables for Different Subsamples

Variable	Objective Stress		Objective Stress Squared	
	Coefficient	t-stat	Coefficient	t-stat
Companies with strong presence of wellness programs	0.01**	4.57	-0.00**	-2.11
Companies with weak presence of wellness programs	0.00	0.82	0.00	0.31
With strong presence of voice mechanisms	0.00	0.48	-0.00	-1.23
With weak presence of voice mechanisms	0.00	0.85	-0.00	-0.59
College graduates	0.01**	4.02	-0.00*	-2.05
Non-college graduates	0.00	0.89	0.00	-0.05
Straight female workers	0.01**	3.57	-0.00*	-2.09
Straight male workers	0.01**	4.38	0.00	1.27
Gay/lesbian workers	0.00	0.71	0.00	-0.18
Single/ non-married employees	0.01*	4.54	-0.00	-1.64
Married employees	0.00	0.48	-0.00	-1.76
Nightshift workers	0.00*	2.35	0.00	0.34
Dayshift workers	0.01*	2.60	-0.00	-1.74
Midshift workers	0.01*	2.14	-0.00	-1.23
Workers with fixed schedule	0.00	1.48	0.00	0.30
Workers with varying shift schedule	0.01**	5.37	-0.00*	-2.81

** significant at .01 level; * significant at .05 level

Apart from the level of stress, a college education and a day shift schedule also produce a positive effect on work performance.

College graduates have work performance rating higher by .07 percentage points compared to their lesser educated counterparts, while work performance of workers in the day shift schedule is higher by 0.13 percentage points compared with the mid-shift schedule or might shift schedule.

Hypothesis 2: The relationship between stress and performance is stronger in companies with strong presence of wellness programs, and in companies with strong presence of voice mechanisms.

The results yield an inverted-U relationship between objective stress and performance for companies with stronger wellness programs, while no significant relationship between stress and work performance is found for companies with weaker wellness programs. However, no significant relationship between stress and performance is found for companies classified by strength of voice mechanism.

Hypothesis 3: There is a stronger relationship between stress and performance among employees with the following characteristics: (a) college graduates; (b) female workers; (c) married employees; (d) night shift workers; and (e) workers who have variability of shift schedule.

Tables 10 and 11 present the coefficients of the stress and the square of stress variables of regression estimates on work performance for various sub-samples.

Educational Attainment

The regression estimates yield an inverted-U relationship between objective stress and work performance among college graduates, while no significant relationship has been seen among those who have not earned a college diploma (Table 10). However, for non-college graduates, a U-shaped curve between general stress and work performance is indicated, while no significant relationship is observed for those who have completed a college degree (Table 11).

Gender

Female workers also exhibit an inverted-U relationship between objective stress and performance, but among males, a positive

linear relationship has been observed. With respect to the relationship between general stress and work performance, a significant U-shaped relationship is observed for the male workers, while that for the female counterparts yield no significant relationship.

Table 11. Summary of the Regression Coefficients of the STRESS2 (General Stress) and Square of STRESS2 Variables for Different Subsamples

Variables	General Stress		General Stress Squared	
	Coefficient	t-stat	Coefficient	t-stat
Companies with strong presence of wellness programs	-0.01	-1.70	0.00	1.21
Companies with weak presence of wellness programs	0.00	0.51	-0.00	-0.27
With strong presence of voice mechanisms	-0.00	-0.07	-0.00	-0.17
With weak presence of voice mechanisms	-0.00	-1.06	0.00	1.14
College graduates	-0.01	-1.53	0.00	1.37
Non-college graduates	-0.03*	-2.63	0.00*	2.36
Straight male workers	-0.04**	-3.39	0.00**	3.44
Straight female workers	-0.00	-0.09	-0.00	-0.14
Gay/lesbian workers	-0.02	-0.63	0.00	0.60
Single/ non-married employees	-0.02*	-2.28	0.00*	2.14
Married employees	-0.00	-0.49	0.00	0.18
Nightshift workers	-0.04**	-4.66	0.00**	4.91
Dayshift workers	-0.01	-0.64	0.00	0.38
Mid-shift workers	0.01	0.65	0.00	-0.83
Workers with fixed schedule	-0.00	-0.03	0.00	0.22
Workers with varying shift schedule	-0.01	-1.39	0.00	0.98

** significant at .01 level; * significant at .05 level

Marital Status

For married employees, no significant relationship of stress and performance has been indicated, while that for not currently married workers, a positive linear relationship between objective stress and work performance and a U-shaped relationship between general stress and work performance are both observed.

Shift Schedule and Rotation

Relative to shift schedule, the three various shift schedules (dayshift, nightshift, and mid-shift) have displayed a positive linear effect of objective stress on work performance while a significant U-shape relationship between general stress and work performance is indicated only for the night shift workers. Finally, an inverted U-shape relationship between objective stress and work performance is found among workers with more frequent variability in shift schedule.

Discussions

Objective Stress vs. General Stress

Objective stress (STRESS 1) aims to describe the kind of stress perceived by the individual pertaining exclusively to his/her work. It is believed that getting the differences between expected and actual abilities per aspect of work will adequately represent the often neglected left half of the curve, the under-stressed conditions where a negative difference can show that actual ability exceeds perceived demand or expected ability.

On the other hand, the manner in which general stress (STRESS 2) seeks to measure the under-stressed conditions is through assigning a value of zero to responses, which would indicate stress being totally absent from a recalled situation based on the employee's overall appraisal of past events. The difference in score results roots from the fact that objective stress allows for below zero values while general stress has only zero as the lowest possible value. While both STRESS 1 and STRESS 2 measure the discrepancy between perceived demand and perceived ability, there is a stark difference in the results,

and this can be enough reason to believe that the types of stress being measured indeed vary.

Quite remarkably, objective stress measures yielded only either positive linear or an inverted-U relationship, which corroborates with most of the past arousal studies, while results using the general stress measures revealed only U-shaped relationships. Observing the differential effects between objective stress and general stress on performance based on what they measure, it can be inferred that demands of work are more defined when they have a direct approach, and clearer processes and procedures to achieve work performance. Since employees are briefed and more or less conditioned at the start of work, they understand that increasing objective stress necessarily increases work performance. On the other hand, general stress is stress outside work, which speculatively has little to do to help in achieving work performance. Thus, introducing general stress would result in a decrease in work performance given that employees may still be in the process of adapting to the situation, meaning employees are still trying to find the right balance between work and personal affairs. Higher levels of general stress will lead to familiarity; perhaps certain groups also realize that the rewards of high performance (i.e., job security, performance bonus and incentives) have a direct impact on improving their personal lives, which thus eventually causes an increase in productivity or performance in the workplace.

Methodology-wise, while this study has considered the suggestion of Muse, Harris, and Feild (2003) to use stress scales that would allow for a better reflection of the under-stressed conditions, the absence of an inverted-U relationship using the PSS measuring general stress may indicate a need for reassessing the stress scales that can be used to have a fairer test of the inverted-U.

The Inverted U and the U-shaped Curvilinear Relationships

The inverted-U remains true to its nature and is supportive of Yerkes Dodson's arousal-performance curve as it demonstrates that moderate work or objective stress is key to achieving a peak in performance in companies with stronger wellness programs, among females, college graduates, and employees who do not have fixed work schedules. That is, a company with a wellness program would not want its employees to have extremely low or extremely high amounts of work stress because this would only negatively affect performance.

While the Inverted-U posits that moderate stress yields optimum performance, the U-shaped curve argues otherwise. With the U-shape theory, a peak in performance only happens with an imbalance between demand and ability, resulting in below average or above average amount of stress levels. This is counter-intuitive and less popular than the inverted-U theory, but this has been a finding in some of the past stress studies (i.e., Leung, Chan, & Olomolaiye, 2008). Among the tested variables, non-college graduates, males, single/non-married employees, and night shift schedule have found to support this U-shaped relationship between stress and performance. Since general stress also involves stress outside of work, these variables notionally thrive when there is an imbalance between demand and ability in real life. Low or high overall stress brought about by responsibilities at home, personal relationships and other extra-curricular activities on top of stress at work are just some of the possible motivators for the employee. Perhaps among single or non-married employees, despite their awareness that they are ready for a commitment, being totally free from the relationship issues with a significant other (i.e., low stress) will enable them to be more focused and perform better at work. On the other hand, a married employee with the same responsibilities as a single/non-married employee, and who performs the role of breadwinner in his or her family, hence dealing with a high work demand that may exceed his or her perceived ability (i.e., high stress), may have no choice but to excel in the workplace so as to ensure job security, and obtain a steady source of income to fulfill his or her duties outside of work.

Positive Linear vs. Negative Linear Correlation

No significant negative linear relationship was found to exist in any of the groups in this study. This is quite a finding, knowing that the dominant claim is that stress is always detrimental to performance. This paper validates the early studies of Meglino (1977) asserting that stress indeed supports performance. The findings of this study also affirm Jamal's (2001) belief that problems, anxieties, and challenges are perceived as opportunities. Objective stress has been seen to positively correlate with work performance. This goes to show that Filipino BPO call center employees may have a good grasp of work-specific stress, and are able to use it well to improve performance in the workplace. They see objective stress as constructive in terms of

helping them keep to their company standards and exceed set targets, be it in the form of achieving more sales, handling customer complaints with accuracy and timeliness, etc. While the positive relationship of objective stress and performance has been seen to exist, there is only evidence of this at lower levels of stress. It is inconclusive if the same can be said about the two at higher levels of stress, since results did not reach the required significance level. Based on the data, this kind of relationship (positive at low levels of objective stress) also holds true for males, non-married, night shift, day shift, and mid-shift workers. Employers can motivate them by introducing stress and increasing it but only up to a certain degree, as there is little that is known about its effect on performance at higher levels.

Gender and Its Impact on the Stress-Performance Curve

Numerous studies have found men and women to behave differently under certain conditions, and this backs up the finding that the relationship of stress and performance varies significantly according to gender. Males are reported to perform better with increased objective or work stress. Females' performance is at its best with moderate objective stress; increasing it further will only result in a decline in productivity. This can perhaps be explained by the differences between male and female's self-esteems. According to Pickhardt (2005), men's self-esteem is built around adequacy in performance while women's is built around adequacy in relationships.[5] Since objective stress focuses more on job-specific stress, which can be viewed as less personal in nature, men are likely to find more ways to wield stress as something that can increase their work performance. Interestingly, a U-shaped was found between general stress and work performance among males, which means high and low stress cause high performance among male BPO employees.

A probable reason for the disparity of results between objective stress and general stress is due to men's varying views and approach to stress. According to BBC News (2013), men are less organized and switch more slowly between tasks compared to women, who are much better in multitasking.[6] Thus, men are likely to perform better if they focus only on a few tasks and have a few responsibilities in mind. On the flip side, if men are faced with extreme demands coming from different aspects (i.e., financial worries, relationship issues, health issues), they may treat work (a supposedly less personal domain) as an

outlet for their anxiety, and use general stress to achieve performance in the workplace. These extreme demands call for coping strategies that will help manage stress that is already taxing or exceeds one's resources (Lazarus & Folkman, 1980). Coping behaviors, which collectively are considered to be a significant moderator of the stress-performance model, as well as cultural background may both play a role in influencing the way that the U-shaped curve applies to the Philippine BPO setting, particularly among male workers.

Table 12. Summary of Significant Relationships Between Stress and Work Performance for Different Subsamples (where t > 1.96, t >2.58)

Type of sample	Objective Stress and Work Performance relationship	General Stress and Work Performance relationship
Total sample	Positive linear	Convexor U-shape
Companies with strong presence of wellness programs	Concave or inverted U-shape	Not significant
College graduates	Concave or Inverted U-shape	Not significant
Non-college graduates	Not significant	Convex or U-shape
Female workers	Concave or Inverted U-shape	Not significant
Male workers	Positive Linear	Convex or U-shape
Single/non-married employees	Positive Linear	Convex or U-shape
Nightshift schedule	Positive Linear	Convex or U-shape
Dayshift/ Mid-shift schedule	Positive Linear	Not significant
Workers with variability of shift schedule		Not significant

Meanwhile, the impact of general stress on work performance among women remains inconclusive, although non-impact of general stress on performance can be a good sign of their resilience in handling stress even outside work. Insofar as objective stress is concerned,

women have a more defined stress-performance relationship than men, in that the findings tell us that increasing stress is good (similar to men) but multiplying work stress negatively affects women's performance at work (such point is no longer conclusive among men).

Company-Initiated Programs as Part of Employee Engagement

BPO companies have since gathered resources to craft programs that encourage wellness among and provide a voice for their employees, although no real stress-performance relationship can be associated with companies relative to their voice mechanisms in place. Meanwhile, part of the findings includes an inverted-U relationship between work stress and performance in companies with stronger wellness programs. One possible justification as to why it was only proven true in the first set of regression may be that wellness programs in these companies may have been designed to address work-specific stress rather than stress that is more general, involving issues outside work.

Summary and Conclusions

Findings reveal that objective stress and work performance exhibit a positive linear relationship, and an inverted-U theory between the two has been validated only in companies with strong presence of wellness programs, among female workers, college graduates and among employees who have variability in shift schedules. General stress and performance validated a U-shaped curve rather than an inverted-U relationship. This U-shaped relationship has also been proven to exist among the following groups: males, non-college graduates, single employees, and nightshift workers.

Notably, the results did not show any real negative linear relationship between stress and performance in either of the two stress measures, and with the three stress-performance relationships proven to exist in this study (i.e., positive linear, inverted-U, and U-shaped), much can now be said about stress having a positive effect on work performance. In this regard, companies can launch wellness programs with the objective of increasing stress and performance among its employees. However, the differential effects of stress on performance

among identified groups in the workplace should prompt management to employ a more targeted approach in cascading information and tailoring its mechanics to sub-groups in the wellness program plans. Since objective stress has been found to positively correlate with performance at least at lower stress levels, management has to create incentive programs that will ensure realistic targets that address work-specific stress (i.e., number of deadlines, number of calls, etc.) and that rewards (i.e., cash, gift certificates, additional leave credits, etc.) are motivating enough to sustain the energy of the participating employees throughout the period. Realistic targets can be determined by referring to historical data of employees' achievements (if any), and balancing this with company's overall goal. Based on this study, the incentive programs will be applicable to males, single or non-married employees, and night shift workers.

For the inverted-U relationship seen in companies with stronger wellness programs and female workers, college graduates, and employees with variability in shift schedules, incentive programs as earlier suggested can be implemented and combined with stress reduction or stress management initiatives to ensure that only a moderate amount of stress is experienced among these groups in the workplace.

Furthermore, those companies with existing wellness programs need to evaluate and re-evaluate the programs' effectiveness as more wellness initiatives would mean a stronger impact of stress on performance, which could actually go either way—increasing or decreasing performance at work.

For groups found to exhibit a U-shaped relationship between general stress and performance, a combination of incentive and stress reduction programs can also be implemented. Additionally, some programs that companies may want to set up can be in the form of support groups, counseling and other activities, as this should help the employee deal with stress caused by other factors outside work, given that external forces affect performance in the workplace.

In conclusion, there is no one-size-fits-all principle for companies planning for their initiatives addressing stress, hence the need for the management to constantly investigate the demographic profile and identify the needs of the employees

Recommendations

The BPO has been regarded as the sunshine industry in the Philippines, and as the industry hires more people to be part of its workforce, people have been more serious in building a career in the call centers. Seeing that this employment trend in the BPO may persist within the next few years and even decades, it is important that companies ensure adherence to the implementing rules and guidelines to decent working conditions set out by the DoLE and ILO for its employees. Social protection should be afforded to the employee in the form of fair wages, job security, and occupational safety and health.

Given that this study has concluded that different stress-performance relationships exist among sub-groups in the company, it is recommended that our government provide at the very least the guidelines to wellness and employee engagement programs for these call center companies, and perform periodic assessment across the industry. As it is, BPO companies in general have started becoming active in launching health and wellness programs, but further research should be conducted in order to study the effectiveness of these programs in addressing their objectives. There is a need for collaboration among the government, BPO organizations, employee associations and budding trade unions in this industry in order to manage general stress and minimize its negative consequences on work performance, as well as to manage objective stress to optimize its positive effects on work performance, with measures that account for variations in the effect of stress on performance by type of BPO worker. Moreover, given that this study did not find any significant stress-performance relationship relative to the presence of voice mechanisms, which could be due to limited information provided in programs promoting employee voice and representation, it is recommended that future studies identify genuine voice mechanisms prior to testing the relationship between stress and performance. Qualitative methods are highly encouraged to carry out a more in-depth discovery and discussion of this topic.

To have a broader understanding of the stress and performance relationship in the BPO setting, researchers may also measure physiological stress and its impact on work performance to validate the self-reporting measurement in this study. However, it should be noted that the scales adopted in this study have been used widely in

previous stress studies (Gmelch, 1982, as cited in Leung et al., 2008; Cohen, 1995). Therefore, there is confidence that the responses received were reliable.

Finally, on the national level, the significant stress-performance relationships found to exist among female employees, nightshift workers, and workers with variability in shift schedule should prompt the government, management, and up-and-coming trade unions/ labor organizations to reinforce certain provisions of RA 10151 as proper implementation of the following are called for in the BPOs, specifically:

- Art. 158. Women Night Workers. - Measures shall be taken to ensure that an alternative to night work is available to women workers who would otherwise be called upon to perform such work "
- Art. 161. Night Work Schedules.- Before introducing work schedules requiring the services of night workers, the employer shall consult the workers' representatives/labor organizations concerned on the details of such schedules and the forms of organization of night work that are best adapted to the establishment and its personnel, as well as on the occupational health measures and social services which are required. In establishments employing night workers, consultation shall take place regularly.

Unfortunately, the BPOs generally lack genuine voice mechanisms (Bool-Sale & Sale, 2010), and such reality has been evident among the participating companies in this study. In order to improve allocation or re-allocation of shift-work and better schedules, Sale (2015a, 2015b) argued that voice mechanisms at the workplace should be established for employers to know workers' chronotypes, and for employees to be able to articulate them.[7] With better alignment between their work shift and the shift in which they are actually most productive, this should help manage stress and improve work performance.

Endnotes

[1] http://www.philstar.com/business/2013/08/21/1113281/economic-footprint-bpo-industry
[2] http://business.inquirer.net/119433/tucp-inks-pact-with-bpo-stakeholders-to-advance-workers-interests
[3] http://bulatlat.com/main/2015/04/26/call-center-employees-form-first-bpo-union-in-the-country/
[4] http://www.ilo.org/wcmsp5/groups/public/@ed_protect/@protrav/@travail/documents/pressrelease/wcms_142971.pdf
[5] http://www.webmd.com/women/features/stress-women-men-cope?page=2
[6] http://www.bbc.com/news/science-environment-24645100
[7] Chronotypes pertain to whether the shift-worker is an early sleeper and riser or late sleeper or riser, and identifying employees' chronotypes is important in devising work schedules due to health risks being associated in a wide disparity between "circadian"(biological) "and social (work-enforced) sleep times" (Judda, Vetter & Roennebert, 2013, as cited in Sale, 2015). Sale's (2015a, 2015b) findings are relevant to Time Zone Dependent (TZD) Workers and the Contact Center and Business Process Outsourcing (BPO) Industry which employs TZD workers.

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