STRESSOR EFFECTS ON THAI IT PROFESSIONALS' JOB SATISFACTION, ORGANIZATIONAL COMMITMENT AND WORK FATIGUE: A CONCEPTUAL FRAMEWORK

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Abstract— Work stressors are associated with a wide range of health outcomes, including depression and anxiety disorders, suicide, workplace injuries and accidents and cardiovascular risk. This study therefore explores the conceptual framework on the causes of stress influencing job satisfaction, organizational commitment and workplace fatigue on Thai information technology professionals. Simple random sampling will be used to gather data through self-administrated questionnaires from an anticipated total of 320 respondents comprising IT managers, executives, and HR managers. The intent of the study is to help corporate and governmental leaders visualize more clearly the work and associated stress related issues of IT professionals which will hopefully increase retention, increase efficiency while reducing costs and job productivity. As Thailand is a leader in ASEAN's 625 million citizen digital economy, this study hopes to enhance Thailand's role as well as the industry's international competitive advantage.

Keywords— ASEAN, Data Processing, MIS, Networking, Job Stress, Thailand, Work Stress.

I. INTRODUCTION

Thailand has for generations had its roots based in an agricultural economy but in recent times that has quickly changed. The digital sector has emerged as the leading driver of innovation and growth across the world, changing business models while creating new industries. Existing boundaries and geographical borders have been rendered redundant.

Now, most major developed economies in the world now have a "digital strategy" focused on how they can co-opt these new technologies to boost economic growth.

This is where the Association of Southeast Asian Nations (ASEAN) community has an opportunity to leapfrog to the forefront, putting it in the top five digital economies in the world by 2025 [1].

In hard cash terms, the implementation of a proper digital agenda and strategy could add $1 trillion to ASEAN GDP over the next decade and at current GDP levels, that's an impressive 40 percent boost to overall output over the next decade [1].

In the long run, regions grow by creating entirely new types of jobs and industries. Whether it is the shift from agricultural work to the assembly line, or the more recent transition from manufacturing towards knowledge-intensive services, the creation of new work has been central to maintain growth [2].

his type of growth however comes at a cost, with IT professionals often times shouldering the weight and stress of such ambitious goals and projections.

According to the IT Governance Institute (ITGI) for many enterprises, information and the technology that supports it represent their most valuable but often least understood asset. Successful enterprises recognize the benefits of information technology and use it to drive their stakeholders' value [3].

This critical asset however is only as good as the people who design, implement and manage and support it. The hours are often long with job related stress high amongst software professionals due to the nature of the work, set goals and deadlines, night shifts, and work overload [4]. Employees working in IT industry are prone to develop numerous health problems due to continuous physical and mental stress from their work with diseases being induced, sustained or exacerbated by stress [4].

According to Shropshire and Kadlec the information technology field has highly fluid, rapidly-evolving workforce requirements [5] with the nature of the profession creating unique challenges and strains for IT workers. As a result, many IT professionals leave the field and seek alternative careers. A 2007 meta-analysis of 31 articles on turnover in the IT field identified over 40 independent predictors [6].

This is consistent with Beecham et al. which indicted from the research that the he most commonly cited motivator in software engineering is the job itself [7]. They cited 21 different motivators for software engineers with the most frequently cited motivators as 'the need to identify with the task' such as having clear goals, a personal interest, understanding the purpose of a task, how it fits in with the whole, having job satisfaction; and working on an identifiable piece of quality work.

Further research by Lee confirmed the importance of an individual's growth needing strength which was defined as the need for challenge and achievements, which plays a significant role in influencing organizational commitment [8].

Messersmith focused on work-life conflict in the IT profession and determined that mounting evidence indicates that workers in the IT sector are experiencing longer work hours, more work-life

conflict, and higher indices of burnout than their coworkers in other functional areas [9]. The academic literature has documented numerous consequences of work-life conflict, including decreased levels of job satisfaction, career dissatisfaction, and increased turnover intentions.

The characteristics mentioned above can affect the causes of stress on various aspects of an IT professional's organizational commitment, workplace fatigue and job satisfaction. Additionally, stress related issues can be further listed as role ambiguity, role conflict, work overload, work family conflict, job autonomy and compensation fairness.

Furthermore, IT professional job turnover is a costly process that if reduced or eliminated by the reduction of stress related factors can contribute significantly to an enterprise's sustainability and competitive advantage.

In the IT field, there is limited current research on ASEAN IT professional's career stress. Therefore, the purpose of this study is to understand the factors which govern IT worker stress. To that end, a conceptual framework is proposed and will be tested. The model includes four determinant variables. The constructs were selected following a review of the extant literature on IT related stress. They are stressors, organizational commitment, job satisfaction, and workplace fatigue.

The corresponding hypotheses will be tested using survey data from a simple random sampling of IT managers and executives and HR managers in Thai IT enterprises and organizations. The results are expected to provide guidance for further studies of stress related issues involving IT workers.

II. CONCEPTUAL DEVELOPMENT

2.1. Stressors

In research conducted by Firth et al., four aspects of stress were measured which included [10]:

1. role ambiguity (e.g. my job responsibilities are not clear to me);
2. role conflict (e.g. to satisfy some people at my job, I have to upset others);
3. work-overload (e.g. it seems to me that I have more work at my job than I can handle); and
4. work-family conflict (e.g. my work makes me too tired to enjoy family life).

From research on the causes of stress that can affect workplace fatigue it was determined that stress related causes include [11], [12]: excessive workloads, role ambiguity, role conflict [13], work freedom and reward fairness.

Futrell&Parasuraman reported that stress in the form of role conflict and role ambiguity perhaps be considered as a term of cognitive dissonance which was generally assumed to tension producing [13]. It is observed that stress arising from various job roles of employees produce an unfavorable condition, which reduces the degree of job involvement. This is consistent with further research showing stressors has a direct influence on *organizational commitment* [14], [15], [16] as well as having a direct influence on *job satisfaction*[12], [14]-[16] and a direct influence *workplace fatigue*[12]. [15]-[18].

2.2. Organizational Commitment

A preliminary review of the literature indicates a significant and negative relationship between job stress and organizational commitment. As the employee's job stress increases, their commitment to the organization decreases [21]. The level of engagement can be measured in six areas: 1) job commitment 2) organizational pride 3) organizational loyalty 4) organizational respect 5) organizational caring and 6) inspired performance [10], [19], [14]. Other studies confirmed that stressors have a direct influence on organizational commitment [14]-[16].

2.3. Job Satisfaction

Spector described job satisfaction as the degree of how much people like their jobs [20]. Others find their work to be a main part of their whole life and may actually enjoy working, while others only work because they must work. Moreover, a *positive attitude* towards one's job will lead to job satisfaction [20].

For this study, job satisfaction is being measured with 15 variables including: 1) job stability 2) physical conditions 3) fringe benefits 4) salary/wages 5) job recognition 6) promotion 7) job satisfaction 8) interesting work 9) routine work 10) good work 11) creative work 12) work accomplishment 13) useful work 14) frustrating work 15) challenging work. Preliminary review of the literature indicates that stressors have a direct influence on job satisfaction [12], [14]-[16], [20].

2.4. Work Fatigue

At work, stress may be a perception indicated by ambiguity, conflict, or overload arising from the characteristics of the individual and the work environment [22]. According to the Mayo Clinic "job burnout is a special type of job stress — a state of physical, emotional or mental exhaustion combined with doubts about your competence and the value of your work." For this study, measurement of workplace fatigue will be drawn from the following five areas:

1) emotional drain
2) end of day fatigue
3) fatigue
4) job burnout
5) stress

Other studies confirmed that stressors have a direct influence on workplace fatigue [12], [15]-[18].

2.5. Proposed Hypotheses

Proposed Research Hypotheses (Fig. 1)

H1: *Stressors* have a direct influence on *Organizational Commitment*.
H2: *Stressors* has a direct influence on *Job Satisfaction.*
H3: *Stressors* has a direct influence on the *Workplace Fatigue.*
H4: *Job Satisfaction* has a direct influence on *Organizational Commitment.*
H5: *Workplace Fatigue* has a direct influence on *Job Satisfaction.*
H6: *Workplace Fatigue* has a direct influence on *Organizational Commitment.*

2.6. Proposed Conceptual Model

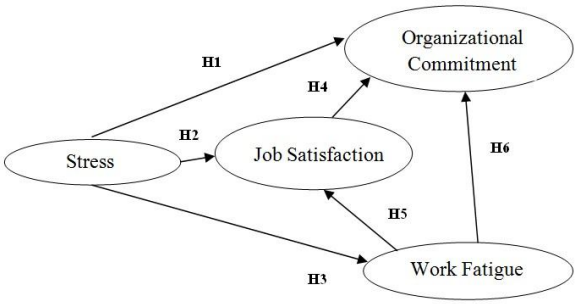


Fig.1.Proposed Research Hypotheses

III. METHODOLOGY

This research aims to model the structure of the factors that influence the stress on Thai IT professionals. Therefore, researchers have determined the following detailed steps of how to carry out the proposed research.

3.1. The Study's Approach

Forthis study the researchers will use both quantitativeandqualitative research from both primary andsecondary data which will include the following steps and resources:

3.2. Primary and Secondary Research Data

The researchers are currently reviewing the literature related to the stressors effects on Thai IT professionals organizational commitment, work fatigue and job satisfaction. Thus far, research has been comprised of published research, textbooks, internet materials, media reports, and data which have been synthesized from the secondary data to develop a conceptual model for the variables that influence Thai IT professionals' stress. .

3.3. Qualitative and Quantitative Research Approaches

The research first step will be to confirm the parameters of the literature review. The qualitative research in the latter stages will be performed to confirm the model of quantitative research. Quantitative research will beperformed usingtheprimary data by collectinga questionnairefrom thetarget sample of those involved with the causes of stress in the workplace including IT organization's supervisors and managers, HR managers and Thai IT executives. Thequestionnaire to be used to collectdata is structured and written in a realistic, easy to understand format which is deemed to be reliable and reasonable. Further measurement and reliability validation will be undertaken as follows:

1. Questionnaire review will be conducted by academic scholars to validate the investigation questions and the use of rhetoric and the simplicity and comprehension of the questions.
2. During the questionnaire trial stage, questions and responses will be monitored so better clarity can be achieved, with questions being updated as required.
3. Performdata collection and statistical analysis.

3.4. Population and Sample

The population in this study is Thai information technology companies which have been registered by the Ministry of Commerce's Department of Business Development as of 23 March, 2016 which numbered 5,861 enterprises which included hardware, software, network and web pages companies as well as data processing and other related IT services.

The Sample Size
Schumacker and Lomax [23] stated that Structural Equation Modeling (SEM) uses a variety of models to show the relationships between observed variables with the same basic goal of providing a quantitative test of a theoretical model hypothesized by a researcher. Meldrum [24] further stated that a sample size smaller than 100 should not be used in SEM as it is unreliable. Therefore, using a factor of 10 for each of the proposed 32 variables from the research survey, it is anticipated that a total of 320 samples are adequate to assure a reliable sample size [23], [25].
To confirmthe modelofquantitative research, 10 in-depth interviews withthoseinvolvedas IT organization supervisors and managers, HR managers and IT executives will be undertaken.

3.5. Tools used in the Research

For this research, the measurement instrument or questionnaires utilized were prepared from the literature. A self-administered questionnaire (SAQ) is being used as it is exploratory in nature and serves as a starting point for other methodologies.
Researcherswillcontinue to monitorthe qualityof the instruments usedin the research to beusedas ameasurementof quality.Theentirecontent validityand reliabilityis divided intotwostages:

*Stage 1:*The index of Item-Objective Congruence (IOC) developed by Rovinelli and Hambleton [26] is also being employed to carry out the screening of the questionnaire created by the research team, and be peer-reviewed and tested by use of the content validity of item objective congruence index (IOC) by five experts in their respective fields.

The IOC for each item is the summation of scores given by the experts divided by the number of experts. This ensures the quality of the questionnaire with any IOC score less than 0.05 being eliminated. The IOC is a procedure used in test development for evaluating content validity at the item development stage. This measure is limited to the assessment of unidimensional items or items that measure specified composites of skills.

The method prescribed by Rovinelli and Hambleton [27] results in indices of item congruence in which experts rate the match between an item and several constructs assuming that the item taps only one of the constructs which is unbeknownst to the experts. The study then proceeded to select items that with an IOC index higher than 0.5 which is considered acceptable.

*Stage 2:*Questionnaire validity will be confirmed by fiveexperts in their respective fields including:

Human Resource Manager	1 individual
Information Technology Manager	1 individual
System Analyst	1 individual
Network Administrator	1 individual
Programmer	1 individual

3.6. Data Collection

Primary Data is concerned with a collection of factors that influence the causes of stress in organizational commitment, job satisfaction and work fatigue of Thai IT professionals. Secondary Data will consist of studying thetheoriesrelated to the research from various sources; including the Internet, books,manuals, tutorials, articles, research papers, etc., which will be used to definetheconceptsand theoriesusedin the study.

3.7. Data Analysis and Statistics Used

Quantitativedata analysis researchwill be conductedusingstatisticalanalysisas follows:

1. Descriptive statistics including frequency, percentages, means, and standard deviations will be used to demonstrate the profiles as well as rating scores and response rate [28].

2. An analysis will be conducted usingstructural equation modeling (SEM)to determine the relationshipof the factorsinfluencing stress amongst Thai IT professionals.

To confirm the results of the quantitative analysis are credible and the findings reliable, the researchers will conduct interviews with those involved as IT organization's supervisors and managers, HR managers and Thai IT executives. Afterwards, the researchers will proceed to interpret qualitative information, including classified information.

According to Hancock, Windridge, and Ockleford [29] data collection and analysis should proceed concurrently, as data collection allows researchers to refine the research question and data collection procedures in the light of new findings, but in reality, this is hard to achieve (e.g. because transcribing recorded interviews takes time, and analysis takes even more time). However it is important to review transcripts as they are transcribed and to undertake informal modification of prompt guides. The idea that qualitative data is mainly 'unstructured' is useful, if this is taken not as a definition but rather as an imperative for analysis.

CONCLUSIONS

Job stress within the information technology and software industries is a global phenomenon which results in significant costs to individual employees and their respective organizations. Estimated overall cost of work related stress within the European Union (EU) has been stated to be in excess of 20 billion Euros [31] and within the UK alone, *e*stimated to lie between 0.5% and 1.2% of UK GDP [32].

In the US, job stress has been estimated to be over 150 billion dollars which is calculated for health care, treatment costs, absenteeism and turnover. Economic turmoil and recessions such as those witnessed by the 1997 and 2008 recessions contribute *to* work stress as forced reductions increase job insecurity which increases the level of work pressure [31].

As has been seen from the conceptual development, stressors have a significant impact on both organizational and national health, capability and competitive advantage. The researchers therefore are moving forward to expand the research and determine how the variables affect Thai IT organizational and professional capabilities.

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