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Human Resource Management, Job Satisfaction and Employee Commitment Affecting Information Technology Staff Turnover Intention: A Structural Equation Model

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ABSTRACT

Thailand's information technology sector is crucial to economic development and growth but is unfortunately significantly under skilled and in many areas having little to no experience. This study therefore was undertaken to determine how human resource management, job satisfaction and employee commitment affect staff turnover intention. Studies indicate that staff retention has a direct effect on the bottom line as companies judged 'Best employers' had a 33% higher growth in revenues compared to an industry 12% average. 'Best employers' also attained an 8% attrition rate which was 5% less than the average of 13%, with almost 80% of Thai CEOs mentioning people issues as the biggest business challenge. Given these numbers, one can quickly understand the economic impact and importance of factors affecting turnover intention within the IT sector. Using quantitative research methods, 220 Bangkok IT professionals were surveyed with qualitative analysis being conducted with Partial Least Square (PLS-Graph). Results showed that human resource management factors had an immediate and positive effect on job satisfaction and employee commitment. Job satisfaction and employee commitment had an immediate and negative effect on turnover intention. The findings from this study found that if an organization has good human resource management systems and policies, this will result in information technology professionals being satisfied in their work which leads to employees being committed to their work and loyal to the organization. This will therefore, result in a reduction in turnover intention.

Key words: Human resource management, employee commitment, job satisfaction, turnover intention

INTRODUCTION

Changes in technology have led to many societal changes. In particular, businesses involved in international trade have had to adjust their processes and models to better cope with this fast paced environment. Organizations involved in manufacturing along with their related administration, distribution and sales processes have been particularly exposed to these changes and have had to refocus their resources and processes to keep pace with this highly competitive global environment.

Human resource management is a key aspect of the business process and needs to adapt and become more flexible to keep up with the pace of these trends in globalization. Therefore, human resource departments need to develop programs and policies that better qualify the intellectual

capital, resources and labor within their organizations so they can better align these resources with current and future globalized world markets, including the ever widening labor pools and manufacturing markets.

As investors continue to gravitate to less expensive labor sources, labor demographics in countries such as Thailand are constantly changing. However, with the ever expanding global and regional trade alliances such as the ASEAN AEC (Association of Southeast Asian Nations-ASEAN Economic Community), synchronization of processes is leading to better and more efficient use of these resources. Capital flows and investment incentives can lead to development and implementation of advanced technologies which in turn leads to both higher production and quality at a lower cost.

The resulting flow of capital and high technology in both a skilled and unskilled manpower environment has a multi-sided or multi-dimensional aspect. The free enterprise system and current world situations relating to fair trade rules and tariff and tax reduction across borders is tightly linked to import/export abilities. The result is a worldwide employment mix in high technology areas such as aviation and industrial production where manpower and skills can be brought to bear with their labor force having the ability to both learn and use new technology.

Moreover, communication and telecommunications infrastructure further causes movement amongst both labor and production. Multinationals seek out areas in which to invest, in which they can gain higher productivity as well as a lower cost. This often results in the implementation of more efficient and more productive methods by the use of both contracting and sub-contracting to external sources (outsourcing). This then results in labor seeking to move to where wages are potentially higher causing challenges within human resource development.

Thus, organizational leaders and human resource professionals must understand this dynamic environment in the era of globalization. Competition is intense and plays an important role in the business world. If the leaders do not understand the business impact of human resource management, they may have to revert to traditional forms of business organizations which in turn will result in the further erosion of business.

There's little doubt that workforces are at a unique point in history as "Baby Boomers"-people born between 1946 and 1964-begin to retire and a new generation begins stepping into their shoes. Generation X, or Gen X (born between 1965 and 1976) and Generation Y, or Gen Y (also called "Millennials" born between 1977 and 1998), have values and work styles that are completely different from the baby boomers (Wey Smola and Sutton, 2002), finding ways to bridge the gaps within this new multigenerational workforce takes great skill-and it all starts with understanding how new generation leaders think and what's important to them.

Currently, it was found that the level of maturity for the ICT industry is not growing at the same rate with the number of the required available skill supplies (McLaughlin *et al.*, 2012). Additionally, the retirement of the baby boomers in the ICT industry is making the risk of insufficient skill supplies to increase (Hecker, 2005).

Diversity is not viewed as a difference in cultural or sexual differences, but instead the wide range of needs involved that HR needs to manage. The concept of managing a wide range of cultural diversity in the workplace is challenging but not impossible and one of increasing importance. According to Johnson and Johnson (2006), there is an increasing interdependence on each other thus diversity in any setting is increasingly inevitable, with the globalization of business resulting in a more diverse workforce.

So, to start promoting acceptance and respect for individual differences in the regulatory environment of the office, managers must not hinder or discriminate but instead should create a positive atmosphere in the workplace. Open Spaces should be allowed in which individuals can sit

and chat or confer on various issues. This then includes the necessity for the provisioning of the necessary facilities in which staff can have the freedom to express their ideas without interruption from the hierarchy within the organization. This will then inspire the creation of new ideas and innovation.

Research shows that most business leaders now view innovation as vital to their company's long-term success and competitive advantage (EIU, 2009). Research strongly indicates that the most successful corporate innovation strategies are the ones that predominantly focus on people and human capital issues. And according to a KPMG special report on HR transformation (KPMG, 2013). HR strategies should include:

- Engaging in strategic alliances with customers, suppliers and other business partners
- Finding, engaging and incentivizing key talent for the purposes of innovation
- Promoting and rewarding entrepreneurship and risk taking
- Developing innovation skills for all employees

There is also a previous study that shows that organizations tend to be more successful if they admit larger proportions of women to become executive officers. This allows better decisions in marketing strategies as women are more likely to understand the behavior of consumers better than men. Apart from sex and age, executives need to understand the multicultural diversity due to the nature of free markets which oftentimes has the manufacturing base overseas. Additionally, they better understand the economic, legal and social traditions and have greater tolerance and willingness to learn the diversity of multi-cultural dimensions of the countries it operates from.

Aon Hewitt, which over 12 years of Best employers research in Asia Pacific has thus far incorporated insights from over 4,300 registered organizations and provides striking evidence that a committed and productive workforce delivers stronger business results. Additionally, with a specific focus on Thai workers and in conjunction with its academic partner, Sasin Graduate Institute of Business Administration of Chulalongkorn University, some of the most noticeable trends that emerged in the 2013 survey in Thailand were:

- Best employers attained a 33% higher growth in revenues (16% in the past year) compared to the study participants' 12% average growth). Best employers also attained an 8% attrition rate, 5% less than the study participants' average of 13%. Finally, Best Employers successfully filled more than twice the number of job openings internally (48%), when compared to study participants (21%)
- Almost 80% of participating CEOs mentioned people issues as their biggest business challenge
- Best employers have significantly higher engagement scores than the Thailand market average (83% vs. 62%). Employees at Best Employer organizations exhibit significantly higher scores in critical engagement behaviors, such as the desire to remain a member of the organization, to expend extra effort and to wholeheartedly perform work that contributes to business success
- The most prevalent messages Thailand employers are emphasizing in their employer brand are: Pride, Learning and Recognition. However, only 13% of the participating organizations reported complete alignment between the CEO and HR on the definition of their employer brand
- 100% of the best employers in Thailand utilize formal processes to identify high potentials, as compared to 64% of the participating average. The percentage of job openings filled internally at Best Employers is 48% while the market average is less than half of that at 21%

- High performing companies show clear accountability, have employees who feel supported by their managers and consistently reward and recognize their employees. 73% of the employees at Best Employers agreed that “I am paid fairly for the contributions I make to the organization’s success”, compared with 46% market average. Best employers also provide growth opportunities that are aligned with the future needs of the organization: 85% of the employees at best employers confirmed that “The way we manage performance here enables me to contribute as much as possible to our organization’s success”, compared against the 58% market average

Research in Thailand has also discovered that higher turnover rates were mainly concentrated in groups with only 1-3 years employment. This is due to some individuals seeking more education while others seek and find better opportunities at other organizations.

According to a US survey, urban area executives focused on reducing the turnover rate by providing opportunities for career advancement rather than higher pay. According to the interviewed employees, staff resignation was in part or due to the following seven reasons (Branham, 2005):

- Job or workplace atmosphere was not as expected
- Job was a mismatch between the job and the staff member
- To little feedback and coaching being provided
- To few growth and advancement opportunities
- Feeling devalued and unrecognized
- Stress from being overworked along with work-life imbalance and
- Loss of trust and confidence in senior leaders

This is consistent with Price waterhouse Coopers (PwC) which asked employers why people quit a company and 9 out of 10 said it’s about the money, but they PwC asked employees the same question, it was discovered a totally different set of reasons. After asking 19,000+ people their reasons for leaving as a part of exit interviews they conducted for clients, the top 10 reasons why employees quit were detailed as follows in Fig. 1.

In terms of ICT human resources, there has been a continuous expansion alongside the expansion of ICT usage. Presently, Thailand has a growing skilled workforce both in the public and

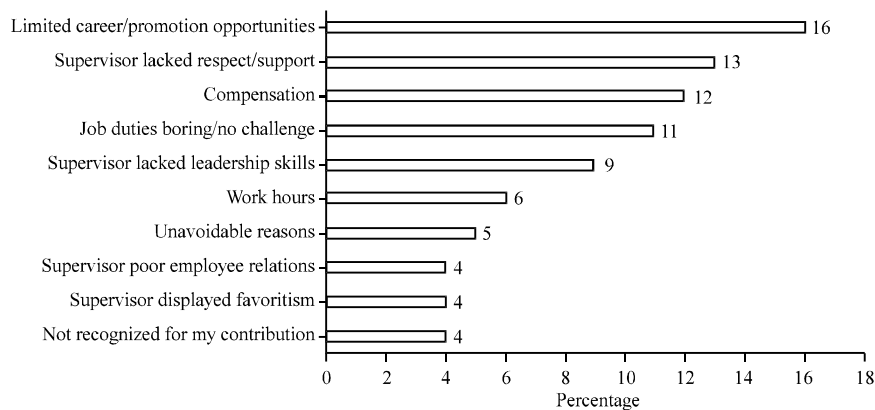


Fig. 1: Seven hidden reasons of employees leave (Branham, 2005)

Table 1: Proportion of ICT personnel per total Thai employed persons, 2001-2009 (Santipaporn, 2010; NSO, 2014)

Proportion	2001	2001	2003	2004	2005	2006	2007	2008	2009
ICT personnel	282,599	303,068	320,048	339,615	348,081	359,328	365,253	403,842	416,862
Total employed person (thousand persons)	32,04.2	33,060.9	33,841.0	34,728.8	35,257.2	35,685.5	36,249.5	37,016.6	37,706.3
Proportion of ICT personnel per total employed persons (%)	0.88	0.92	0.95	0.98	0.99	1.01	1.01	1.09	1.11

Source: Labor force survey, National statistical office

private sectors with the number of graduates in related fields at the tertiary and vocational level also increasing. Nonetheless, there is still a major shortage of ICT human resources, both in term of quantity as well as quality, particularly highly-skilled personnel and specialized personnel in various sub-sectors (Santipaporn, 2010).

Under the heading 'Status of the Development of ICT Human Resources ICT professionals' the Thai National Statistical Office reported that according to the Thai Labor Force Survey 2009, the total number of ICT employed persons was 416,862 from a possible total of 37.71 million workers or 1.11% of the total workforce (Table 1). The proportion of ICT employed persons increased only very slightly from 0.88% in 2001 to 1.11% in 2009 (Santipaporn, 2010).

However, when classifying employed persons according to OECD into 2 groups (OECD, 2005); in 2009, there were 119,959 persons in high skill group or 28.8% and 296,903 persons in low skill group or 71.2%. Additionally, only 39.6% had a direct degree in an ICT related field and when comparing the proportion of personnel in enterprise possessing degree in ICT from the ICT business survey in 2009, the highest group is system operations at 30.7%, followed by programmers at 10.3% and system technician at 10.3%.

The National Statistical Office (NSO) conducted the first survey on use of Information and Communication Technology (ICT) in Thailand and in the 2011 report stated that for Information Technology Personnel, there were a total of 680,429 persons employed in company limited or public company limited in the country. Out of these, about 101,713 persons (about 14.9%) had graduated in an information technology related subject. The rest, or 578,716 individuals from the survey (85.1%), had not (NSO, 2011).

After a review of the literature and data from above, researchers wished to examine further the relationships of Human Resource Management, Job Satisfaction and Employee Commitment on Bangkok Information Technology professionals Turnover Intention with the hope to reduce staff turnovers. This strategy aims to promote access and use of IT in the production of goods and services in all sectors to enhance competitiveness. This will help prepare businesses to compete under global market free trade regimes in the future and transition smoothly into the Asian Economic Community (AEC).

CONCEPTUAL DEVELOPMENT

Human resource management variable job satisfaction: Review of the literature found that research from Som (2008) indicated that Human Resource Management included: (1) selection/hiring of, (2) Training/Development, (3) Wages/benefits and (4) Assessment/care which is also consistent with Sani (2012).

However, Abeysekera (2007) evaluated six Human Resource (HR) practices (realistic job information, job analysis, work/family balance, career development, compensation and supervisor support) and organizational commitment that could have an impact on the Marketing

Executive Intention to Leave (MEIL) in Sri Lankan leasing companies. The results indicated that realistic job performance, job analysis, career development, compensation and organizational commitment factors were negatively and significantly correlated to the MEIL. Results showed that compensation and job analysis are strong predictors of MEIL with organizational commitment being the strongest predictor on MEIL.

This is also consistent with Arumugam and Mojtahedzadeh (2011) who found that human resource management has a positive influence on the satisfaction of employees. Nonetheless, with the current evolutionary focus on technology renewal and new sources of growth, there is a critical inclination of firms to view innovativeness and competitiveness as pertinent factors to measure firm performance (Lee and Lee, 2007).

Kuo (2011) conducted a survey of 659 employees from electronic industrial listed and over-the-counter listed technological companies in Taiwan with the results indicating that HRM strategies result in better organizational learning, organizational innovation and knowledge management capability which ultimately contributes to achieving organizational performance. It was also determined that organizational learning improves organizational innovation and accumulates knowledge management capability with organizational innovation resulting in knowledge management capability development, which contributes to the establishment of organizational development. Technological companies should therefore utilize organizational knowledge in order to enhance organizational performance.

Katou (2012) surveyed data from 197 small Greek private companies (manufacturing, services, trade) and found that HRM policies, being contingent on business strategies (cost, innovation, quality), have a positive effect on organizational performance through employee attitudes and employee behaviors. Furthermore, the study supported the view that although HRM policies do not directly lead to high organizational performance, it is high-performing firms that can directly afford HRM policies. From the above, the formulation of hypothesis H1 was created.

H1: Human resource management has a direct and positive impact on job satisfaction.

Human resource management variable employee commitment: A number of empirical studies confirm the important role of employee commitment in the turnover process for IT personnel (Igbaria and Greenhaus, 1992; Igbaria and Guimaraes, 1999). Previous studies showed that employee organizational commitment will affect whether an employee will resign from an information technology position and as the demand for IT professionals increases, so does the pressure on IT and HR managers to design innovative strategies for retaining talent (King and Callaway, 1995).

Recent literature reveals that a heavy investment in the human capital and the implementation of HR practices may contribute to organizational success (Pfeffer and Veiga, 1999), specifically by reducing the turnover of the IT staff.

Pare and Tremblay (2000) showed that organizational commitment has a direct effect on turnover intentions of IT personnel. Specifically, affective commitment and continuance commitment are expected to be negatively related to turnover intentions. It was also found that the link between affective commitment and turnover intentions is stronger than the relationship between continuance commitment and turnover intentions.

This is consistent with research conducted on Google employees where welfare has been deemed a privilege along with a good working environment affects organizational commitment and reduces turnover rates (Forbes, 2012). This led to the formulation of hypothesis H2.

H2: Human resource management has a positive impact on employee commitment.

Human resource management variable turnover intention: From a review of the literature, Abeysekera (2007) evaluated six Human Resource (HR) practices (realistic job information, job analysis, work/family balance, career development, compensation and supervisor support) and organizational commitment that could have an impact on the Marketing Executive Intention to Leave (MEIL) in Sri Lankan leasing companies. The results indicated that realistic job performance, job analysis, career development, compensation and organizational commitment factors were negatively and significantly correlated to the MEIL. Results showed that compensation and job analysis are strong predictors of MEIL with organizational commitment being the strongest predictor on MEIL.

This corresponds with the study by Arumugam and Mojtahedzadeh (2011), concerning human resource management practices in the Malaysian industries and the many factors which are effective in improving performance. They are employee participation, training, job description, career planning system, compensation system, selection system and performance appraisal system. Job satisfaction plays a fundamental role in determining the performance.

This is consistent with Mudor and Tooksoon (2011) who developed a conceptual framework about the relationship between human resource management and work satisfaction and retirement. The results showed that Human Resource Management has a positive relationship with job satisfaction and has a significant but negative effect on the turnover intention.

Lee and Lee (2007) uncovered six underlying HRM practices on business performance, namely training and development, teamwork, compensation/incentives, HR planning, performance appraisal and employee security helping to improve firms' business performance including employee's productivity, product quality and firm's flexibility. The study revealed that three items of HRM practices influence business performance, training and development, compensation/incentives and HR planning. This above has therefore led to the formulation of hypotheses H3.

H3: Human resource management has a direct and positive impact on turnover intention.

Job satisfaction variable affects employee commitment: A study by Robbins *et al.* (1997) stated that job satisfaction is an individual's general attitude toward his work with various jobs that require interaction between co-workers and bosses. Factors conducive to job satisfaction include policy and organization, salary demands, relationship dominance between supervisors and subordinates, working conditions and worker job satisfaction including workplace achievement. Recognition of the social nature of the job responsibilities and career advancement opportunities (Van Dersal, 1968) were also important. Research by Limyothin and Trichun (2012) on Thai hotel staff found that job satisfaction and organizations were negatively related to the intention to quit. The structural equation model analysis found that organizational commitment directly affected the intention to quit whereas job satisfaction directly affected the intention to quit and indirectly affected organizational commitment. Job satisfaction was determined to be very crucial to the intention to quit.

This is in accordance with Vandenberg and Lance (1992) and Lumley *et al.* (2011) as well. This therefore has led to the formulation of hypothesis H4.

H4: Job satisfaction has a direct and positive effect on organizational commitment.

Job satisfaction variable affects turnover intention: Review of the literature from Gordon *et al.* (1996) stated that job satisfaction is a result of people feeling that their task has been accomplished as well as their interest in the value and standard of the job.

This corresponds to the study of Vandenberg and Lance (1992) who examined the causal relationship between job satisfaction and organizational commitment and determined that: (1) Satisfaction causes commitment, (2) Commitment causes satisfaction, (3) Satisfaction and commitment are reciprocally related and (4) No causal relationship exists between the two constructs with the results supporting the commitment-causes-satisfaction model.

Lumley *et al.* (2011) suggested that there are significant relationships between job satisfaction and affective and normative commitment variables. The positive associations observed between the satisfaction variables and the affective commitment variable suggested that participants who are satisfied with pay, promotion (advancement), supervision, fringe benefits, contingent rewards (recognition and Job satisfaction and organizational commitment of employees in the IT environment achievement), relationship with co-workers, nature of the work and communication (organizational and job specific) seem to feel more emotionally attached to and involved with their respective organizations. After a review of the above, the formulation of hypothesis H5 was created.

H5: Job satisfaction with work results in a direct and negative feeling and results in turnover intention.

Employee commitment variable affects turnover intention: Mowday *et al.* (1979) have conceptually defined organizational commitment as a unidimensional construct. According to them, organizational commitment can be characterized by at least three factors: (1) A strong belief in and acceptance of the organization's goals and values, (2) A willingness to exert considerable effort on behalf of the organization and (3) A strong desire to maintain membership in the organization.

This corresponds to McGee and Ford (1987) who stated that the factors affect make a commitment to the organization are as follows: (1) Communication and Information flow, (2) Organizational leadership, (3) the involvement of employees and the opportunity for employees, (4) Employee recognition, (5) Compensation and benefits and (6) Work environment.

Job satisfaction and therefore employee commitment has several facets such as: management, supervision, co-workers, empowerment and teamwork, the work itself, quality of work life, promotion opportunities and pay. All these facets can positively or negatively affect an employee's overall satisfaction. This perspective can be useful to organizations that wish to identify employee retention areas in which improvement is possible (Saari and Judge, 2004; Westlund and Hannon, 2008). From the above the following Hypothesis H6 was created:

H6: Organizational commitment of employees has a direct and negative effect on turnover intention

MATERIALS AND METHODS

This study was conducted from a sample population of career professionals and information technology staff from the Bangkok metropolitan area using both quantitative and qualitative research of which 220 responded (Hair *et al.*, 2006).

Data collection: For this research, the measurement instrument or questionnaires utilized were prepared from the literature. To gauge both the content validity and reliability of the survey, 5 specialists in their respective fields were chosen to evaluate the consistency of the content and confirm it was valid for the purposes of the research. Additionally, the index of Item-Objective Congruence (IOC) developed by Rovinelli and Hambleton (1977), was employed to carry out the screening of questions. 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 (1977), 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 research then proceeded to select items that with an IOC index higher than 0.5 which were considered acceptable.

Questionnaires were constructed to be a tool to measure concept definition and practice. The instrument or questionnaire used the 7-Point Likert Scale (Likert, 1970) as the measurement scale and the conceptual framework for determining the internal consistency measured by coefficient alpha (α -coefficient) of Akron BAC (Cronbach) to calculate the average value of the correlation coefficient which ranged from 0.755-0.918 which is considered highly reliable. All values lower than 0.50 were eliminated from the measurement.

Measurement

Dependent variable: Turnover Intention (TURN) analysis of the biomass power plant sector used a measurement instrument or questionnaires utilizing a 7-Point Likert Scale (Likert, 1970) and have been constructed with the scales developed to enable the measurement of Resignation Decision (tud) and Alternative Choices (tus) (Scott *et al.*, 2003; Lewis, 2008).

Intermediate variables: Employee Commitment (EMPLOY) of employees analysis used a measurement instrument or questionnaires utilizing a 7-Point Likert Scale (Likert, 1970) and have been constructed with the scales to measure two aspects (Table 1) including Behavior (Behave) and Attitude (Attitude) (Igbaria and Greenhaus, 1992; Igbaria and Guimaraes, 1999; King and Callaway, 1995; Pfeffer and Veiga, 1999; Pare and Tremblay, 2000; Forbes, 2012).

Job Satisfaction (JOB SAT) of employees analysis used a measurement instrument or questionnaires utilizing a 7-Point Likert Scale (Likert, 1970) and have been constructed with the scales to measure two aspects (Table 1) including Work Satisfaction (Satjob) and Free Time Satisfaction (Satof) (Robbins *et al.*, 1997; Van Dersal, 1968; Limyothin and Trichun, 2012; Vandenberg and Lance, 1992; Lumley *et al.*, 2011).

Independent variable: Human Resource Management (HRM) of employees analysis used a measurement instrument or questionnaires utilizing a 7-Point Likert Scale (Likert, 1970) and have been constructed with the scales to measure four aspects (Table 2) including Recruitment/Hiring (Select), Wages/Benefits (compensation), Development/Training (training) and Evaluation/Care (appraisal) as depicted in Fig. 2 (Katou, 2012; Lee and Lee, 2007).

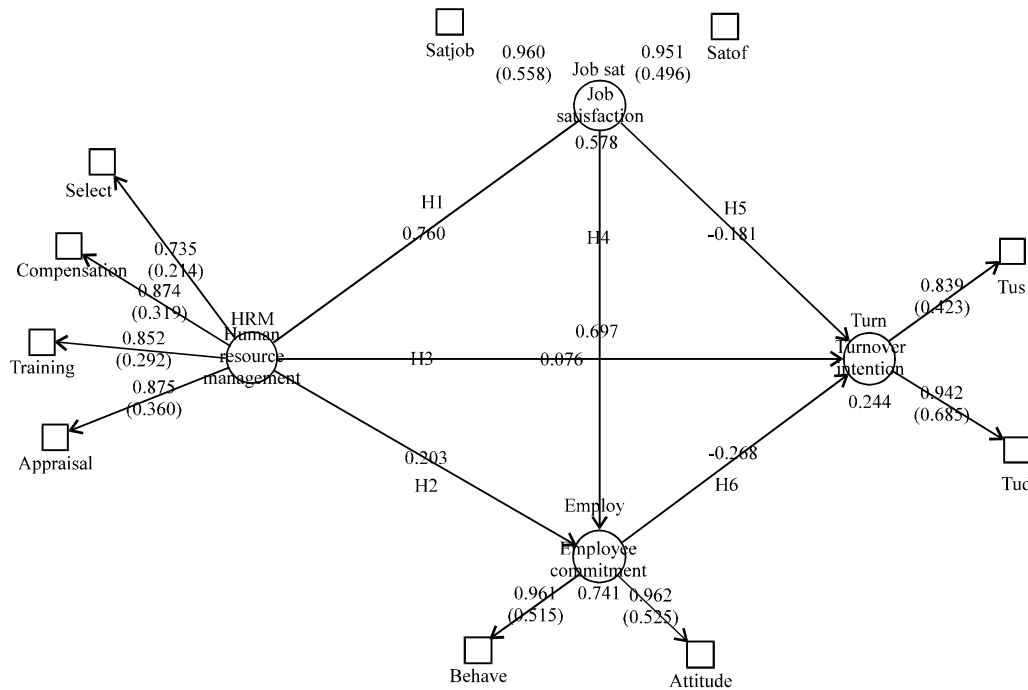


Fig. 2: Final model-analysis of factors that affect bangkok information technology professionals turnover intention

Table 2: Statistic values presenting convergent validity of reflective scales of latent variables

Construct/item	Loading	t-stat
Human Resource Management (HRM)		
Recruitment/hiring (Select)	0.735	15.581
Wages/benefits (compensation)	0.874	36.639
Development/training (training)	0.852	34.718
Evaluation/care (appraisal)	0.875	59.912
Employee commitment (EMPLOY)		
Behavior (behave)	0.961	162.033
Attitude (attitude)	0.962	174.891
Job satisfaction (JOB SAT)		
Work satisfaction (Satjob)	0.960	166.266
Free time satisfaction (Satof)	0.951	100.563
Turnover intention (TURN)		
Resignation decision (tud)	0.942	74.383
Alternative choices (tus)	0.839	25.470

RESULTS

Partial Least Squares has been applied for analysis of quantitative data by the researchers. It is data analysis for Confirmatory Factor Analysis (CFA) relating to the determination of manifest variable and latent variable and testing of research hypothesis exhibiting in structural model analyzed by using the applications of PLS-Graph (Chin, 2001). According to the analysis result of scale validity and reliability, scale investigation was conducted using internal consistency measurement coefficient alpha (α -coefficient) of Akron BAC (Cronbach) to calculate the average value of the correlation coefficients which ranged from 0.755-0.898 which is considered highly reliable.

In case of measure variables with reflective analysis, convergent validity has been conducted. Loading is used as consideration criteria and must be positive quantity and indicator loading has been more than 0.707 and all values have been statistically significant ($|t| \geq 1.96$) representing convergent validity of scales (Lauro *et al.*, 2005; Henseler *et al.*, 2009; Piriyakul, 2010) and analysis results as shown in Table 2.

Human Resource Management (HRM) consists of 4 factors including Recruitment/Hiring (Select), Wages/Benefits (compensation), Development/Training (training) and Evaluation/Care (appraisal) with the loading ranging from 0.707 with a significant level of confidence at 95% ($t\text{-stat} > 1.96$) which is considered highly reliable. Human Resource Management therefore affects Job Satisfaction (JOB SAT) (Fig. 2).

Job Satisfaction (JOB SAT) consists of 2 factors including Work Satisfaction (Satjob) and Free Time Satisfaction (Satof) with the loading ranging from 0.707 with a significant level of confidence at 95% ($t\text{-stat} > 1.96$), which is considered highly reliable. Job Satisfaction therefore affects Employee Commitment (EMPLOY).

Employee Commitment (EMPLOY) consists of 2 factors including Behavior (Behave) and Attitude (Attitude) with the loading ranging from 0.707 with a significant level of confidence at 95% ($t\text{-stat} > 1.96$), which is considered highly reliable. Job Satisfaction therefore has an effect on Turnover Intention (TURM).

Therefore, the researchers took the variables Recruitment/Hiring (Select), Wages/Benefits (compensation), Development/Training (training), Evaluation/Care (appraisal), Work Satisfaction (Satjob), Free Time Satisfaction (Satof), Behavior (Behave) and Attitude (Attitude) and used them in structural equation analysis.

Convergent validity: Technically, convergent validity can be evaluated by three tests: Item reliability, composite reliability and Average Variance Extracted (AVE) (Chau, 1997). The first measure, item reliability, captures the amount of variance in a measure due to the construct rather than the error. Item reliability is indicated if items have significant factor loadings of 0.50 or above (Hair *et al.*, 2006). The second measure, construct composite reliability, is assessed based on the criteria that the indicator's estimated pattern coefficient is significant on its underlying factor (Nunnally, 1978). The threshold value for construct reliability is 0.70 or above. The interpretation of the resultant coefficient is similar to that of Cronbach's alpha, except that it also takes into account the actual factor loadings rather than assuming that each item is equally weighted in the composite load determination. The third measure, Average Variance Extracted (AVE) for each construct, similar to item reliability, indicates the amount of variance in the item explained by the construct relative to the amount due to measurement error. The threshold value for AVE is 0.50 or above.

The above reflective model in Table 2 shows the discriminant validity of the internal latent variables and the correlation of variables. It also depicts the scale reliability which has been analyzed from Composite Reliability (CR) as well as the Average Variance Extracted (AVE) and R^2 . The CR value should not go below 0.60 and the AVE values should also drop below 0.50 and R^2 values should not be under 0.20 (Lauro *et al.*, 2005; Henseler *et al.*, 2009; Boontawan and Montree, 2010).

Table 3 shows the results of factor analysis affecting Biomass Power Environmental Impact. The data also shows the CR values are higher than 0.60, with all AEV values higher than 0.50 for all values and R^2 values higher than 0.20, representing the reliability of the measurement. It

Table 3: Results of Confirmatory Factor Analysis (CFA) for measurement model

Construct	CR	R ²	AVE	Cross construct correlation			
				Human resource management	Job satisfaction	Employee commitment	Turnover intention
Human resource management	0.903		0.699	0.836			
Job satisfaction	0.955	0.578	0.913	0.760	0.955		
Employee commitment	0.961	0.741	0.924	-0.411	-0.467	0.961	
Turnover intention	0.886	0.244	0.795	0.733	0.851	-0.478	0.892

Statistical significance level is at 0.01 and diagonal figures mean \sqrt{AVE} , CR: Composite reliability, R²: Square of the correlation, AVE: Average variance extracted

Table 4: Results of hypothesis testing

Hypotheses	Coefficient	t-stat	Results
H1: Human resource management has a direct and positive impact on the job satisfaction	0.760	27.517	Supported
H2: Human resource management has a positive impact of employee commitment	0.203	3.599	Supported
H3: Human resource management has a direct and positive effect on turnover intention	0.076	0.749	Not supported
H4: Job satisfaction has a positive and direct impact on employee commitment	0.697	13.851	Supported
H5: Job satisfaction has a direct and negative turnover intention	-0.181	1.505	Supported
H6: Employee commitment has a direct and negative effect on turnover intention	-0.268	2.613	Supported

found that data sets in the \sqrt{AVE} have higher values than all of the corresponding values in the 'Cross Construct Correlation' in the same column, representing discriminant validity of the measure in each construct and with a greater value than 0.50 of AVE as shown in Table 3. The samples were analyzed to answer the research hypotheses criteria in the three assumptions presented in Table 4.

DISCUSSION

The results from the study on 'Human Resource Management, Job satisfaction and Employee Commitment affecting Information Technology Staff Turnover Intention: A Structural Equation Model' found that study of Som (2008) indicated that Human Resource Management included: (1) selection/hiring of (2) Training/Development (3) wages/benefits (3) Assessment/care which is also consistent with Sani (2012). Additionally, study of Som (2008) indicated that Human Resource Management included: (1) selection/hiring of (2) Training/Development (3) wages/benefits (3) Assessment/care which is also consistent with Sani (2012).

However, Abeysekera (2007) evaluated six Human Resource (HR) practices (realistic job information, job analysis, work/family balance, career development, compensation and supervisor support) and organizational commitment that could have an impact on the Marketing Executive Intention to Leave (MEIL). The results indicated that realistic job performance, job analysis, career development, compensation and organizational commitment factors were negatively and significantly correlated to the MEIL. Results showed that compensation and job analysis are strong predictors of MEIL with organizational commitment being the strongest predictor on MEIL.

This is also consistent with Arumugam and Mojtahedzadeh (2011) who found that human resource management has a positive influence on the satisfaction of employees and improving performance. These include employee participation, training, job description, career planning system, compensation system, selection system and performance appraisal system, with job satisfaction playing a fundamental role in determining the performance.

This is consistent with the results from Mudor and Tooksoon (2011) who showed that Human Resource Management has a positive relationship with job satisfaction and has a significant but negative effect on the turnover intention. Additionally, Lee and Lee (2007), indicated that with the current evolutionary focus on technology renewal and new sources of growth, there is a critical inclination of firms to view innovativeness and competitiveness as pertinent factors to measure firm performance. It can be concluded that Human Resource Management has had a positive influence on the satisfaction of employees (Mudor and Tooksoon, 2011; Kuo, 2011; Katou, 2012).

Pare and Tremblay (2000) showed that organizational commitment has a direct effect on turnover intentions of IT personnel. Specifically, affective commitment and continuance commitment are expected to be negatively related to turnover intentions. It was also found that the link between affective commitment and turnover intentions is stronger than the relationship between continuance commitment and turnover intentions.

Most employee perks on google campuses aim to increase happiness, creativity and productivity with new dads enjoying six weeks of paid leave while moms can take 18 weeks after the birth of a child (Forbes, 2012).

Human Resource Development can play an important role in helping senior managers lead their organizations to improvement (Cocheu, 1993). The HRM is relevant to managers in every unit, project, or team. Managers are constantly faced with HRM issues, problems and decision-making and the text's primary goal is to show how each manager must be a human resource problem solver and diagnostician (Ivancevich and Konopaske, 2012).

This is consistent with Mudor and Tooksoon (2011) which developed a conceptual framework about the relationship between human resource management and work satisfaction and retirement. The results showed that Human Resource Management has a positive relationship with job satisfaction and has a significant but negative effect on the turnover intention.

Lee and Lee (2007) uncovered six underlying HRM practices on business performance, namely training and development, teamwork, compensation/incentives, HR planning, performance appraisal and employee security helping to improve firms' business performance including employee's productivity, product quality and firm's flexibility. The study revealed that three items of HRM practices influence business performance: training and development, compensation/incentives and HR planning.

Robbins *et al.* (1997) stated that job satisfaction is an individual's general attitude toward his work with various jobs that require interaction between co-workers and bosses. Factors conducive to job satisfaction include policy and organization, salary demands, relationship dominance between supervisors and subordinates, working conditions and worker job satisfaction including workplace achievement. Recognition of the social nature of the job responsibilities and career advancement opportunities (Van Dersal, 1968) were also important.

Research by Limyothin and Trichun (2012) on Thai hotel staff found that job satisfaction and organizations were negatively related to the intention to quit. The structural equation model analysis found that organizational commitment directly affected the intention to quit whereas job satisfaction directly affected the intention to quit and indirectly affected organizational commitment. Job satisfaction was determined to be very crucial to the intention to quit.

Mowday *et al.* (1979) have conceptually defined organizational commitment as a unidimensional construct. According to them, organizational commitment can be characterized by at least three factors: (1) A strong belief in and acceptance of the organization's goals and values; (2) A willingness to exert considerable effort on behalf of the organization and (3) A strong desire to maintain membership in the organization.

McGee and Ford (1987) distributed questionnaires to 997 faculty members from 4-year colleges and universities in the United States and Canada and measured organizational commitment based on two dimensions: affective and continuance commitment. They determined that both affective and continuance commitment reflect links between the employees and the organization.

CONCLUSION

The results from the study on 'Human resource management, Job satisfaction and employee commitment affecting information technology staff turnover intention: A Structural Equation Model' found that human resource management has a crucial impact on Thai IT staff turnover intention which is supported by academic research around the world. This however does not just affect IT staff retention, it also has a direct effect on the bottom line as was indicated in the joint research from the Sasin Graduate Institute of Business Administration of Chulalongkorn University and Aon Hewitt in their 2013 survey with 'Best Employers' attaining a 33% higher growth in revenues compared to the study participants' 12% average growth. Best Employers also attained an 8% attrition rate, which was 5% less than the study participants' average of 13%. Best Employers successfully filled more than twice the number of job openings internally (48%), when compared to study participants (21%) with almost 80% of participating CEOs mentioning people issues as their biggest business challenge. The most prevalent messages Thailand employers are emphasizing in their employer brand are: Pride, learning and recognition which supports this research as well as many other academic studies. High performing companies show clear accountability, have employees who feel supported by their managers and consistently reward and recognize their employees. Best Employers with HRM policies also provide growth opportunities that are aligned with the future needs of the organization which also contributes to the reduction of turnover intention and future profitability and growth.

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