



GRADUATE SCHOOL OF
BUSINESS AND ADVANCED
TECHNOLOGY MANAGEMENT



ABAC ODI JOURNAL Vision. Action. Outcome

ISSN : 2351-0617 (print) , ISSN: 2408-2058 (electronic)

**KEY DEVELOPMENTAL OPPORTUNITIES FOR LONG-TERM
ORGANIZATION DEVELOPMENT OF G COMMERCIAL BANK,
CHINA: A MIXED METHOD RESEARCH**

YuJie Wu , Sirichai Preudhikulpradab

ABAC ODI JOURNAL. Vision. Action. Outcome Vol 8 (2) pp. 54-80

<http://www.assumptionjournal.au.edu/index.php/odijournal>

Published by the
Organization Development Institute
Graduate School of Business and Advanced Technology Management
Assumption University Thailand

ABAC ODI JOURNAL Vision. Action. Outcome
is indexed by the Thai Citation Index and ASEAN Citation Index

**KEY DEVELOPMENTAL OPPORTUNITIES FOR LONG-TERM ORGANIZATION
DEVELOPMENT OF G COMMERCIAL BANK, CHINA:
A MIXED METHOD RESEARCH**

YuJie Wu¹ , Sirichai Preudhikulpradab²

¹Corresponding Author, Graduate School of Business and Advanced Technology Management, Assumption University, Thailand E-mail: 331987991@qq.com

² Lecturer, Graduate School of Business and Advanced Technology Management , Assumption University, Thailand E-mail: victorsirichai@gmail.com

Received: 8 March 2021

Revised: 17 March 2021

Accepted: 29 March 2021

Abstract

This research-based article employs needs assessment research. The research site is at G Commercial Bank in China. The study comprises two objectives: 1) to examine the current and expected situations of the five performance-related factors, consisting of training & development, work-life balance, supervision, organizational commitment, and perceived AI utilization, and 2) to propose an OD intervention for improvement of the aforementioned performance-related factors. This study employs a semi-structured questionnaire containing fixed choices and open-ended questions for data collection from the respondents. The data analysis and synthesis procedures include descriptive statistics, PNI_{Modified}, and contents analysis. The actual sample is 138 respondents who completed the questionnaire, and 35 out of 138 respondents provide the qualitative suggestions in the open-ended question section. The key findings based on the quantitative and qualitative data revealed that the priority needs for Organization Development Interventions for improvement comprise work-life balance as the 1st priority need, perceived AI utilization as the 2nd priority needs, training & development as the 3rd priority need, the supervision as the 4th priority, and organizational commitment as the 5th priority. A set of OD interventions for improvements proposed, where the work-life balance, perceived AI utilization, training & development, and supervision were regarded as the interdependent factors for the total improvement program of their employees' performance. At the same time, the current organization continuously nurtured the current condition of organizational commitment.

Keywords: employee performance, perceived AI utilization, work-life balance, supervision, training & development, needs assessment (PNI_{modified}), organization development.

Introduction

Employee's job performance is considered one of the significant priorities in human resource management; it is widely recognized as the organization's underlining ability to produce the best outputs based on its capability and motivation (Soomro & Shah, 2019).

In the era of rapid technological development and change, the high-performing working systems' usage plays a significant role in employee's job performance. Over the past few years, Artificial Intelligence (AI) has become one of the most pervasive disruptive technologies (Simon, 2019). Some experts believed AI would create new business lines and jobs and help employees do their job more efficiently and effectively. Many existing jobs, such as paralegals, journalists, office workers, and computer programmers, encounter the fast-growing AI (Upadhyay & Khandelwal, 2019).

China is known as one of the most growing AI developments; many industries have exponentially started introducing artificial intelligence-related technologies to the workplace. In particular, the financial industry is the sector that actively adopts and transitions towards technology development and deployment to grow the organization's output and productivity. Many commercial banks begin to notice the unlimited potential of AI in the economy and commercial opportunities for long-term growth, believing that such technology can likely improve job performance. Such a growing trend, AI-related adoption has predominantly been considered a part of the business development strategy. On the contrary, Boon et al. (2012) articulated that the fluctuating individual job performance results from intra-individual change or changes in an individual's psycho-physiological state. Therefore, the employees' job satisfaction and commitment invariably determined the organization's success, which also needs to paid attention to and assessed.

G commercial bank is a Chinese city commercial bank located in the capital city Nanning of the Guangxi province of the south China coastal area. There are around 400 employees in the bank. G bank is rapidly developing and expanding its business scale under the national policy of countryside finance. The company recently promoted many employees to become the supervisor and continued recruiting new staff to scale up the company. However, as time goes, G bank begins to discover that its performance level does not reach the expected effect after recent job promotion and recruitment. The supervisors and new staff cannot reach the performance with the manager's expectation in the routine but also fail to achieve the expected results using AI-related systems or applications. Besides, the new finance strategy requires most of the employees to spend their time to go the countryside to develop business, which means not only employees need to allocate the time at work, but also on the way to the countryside and city; this has recently become a big challenge for employee's work-life balance.

Statement of the Problem

Considering several repercussions of organizational issues confronting G commercial banks as highlighted in the introduction part, this research-based article focuses on identifying the priority needs and how different needs can be improved, ranging from training & development, work-life balance, supervision, and organizational commitment, to perceived

AI utilization. The selection of variables is drawn from the organization's current situation, where this study directly benefits the participating company. Secondly, the variables are drawn from growing trends in the field of organizational studies where growing human factors and technological factors are interdependent with one another.

Research Objectives

1. To examine the five performance-related factors' current and expected situations, including training & development, work-life balance, supervision, organizational commitment, and perceived AI utilization, and rank the order of needs priority.
2. To propose an OD intervention for training & development, work-life balance, supervision, organizational commitment, and perceived AI utilization in G bank.

Research Questions

1. What are the current and expected situations for training & development, work-life balance, supervision, organizational commitment, and perceived AI utilization, and the order of needs priority?
2. What could the OD intervention for improvement of training & development, work-life balance, supervision, organizational commitment, and perceived AI utilization in G bank be proposed?

Literature Review

Related literature reviews in this article comprise 1). Training and development, 2). Work-life balance, 3). Job performance, 4). Organizational commitment, 5). Perceived AI utilization and 6) Supervision.

Training & Development

Training and development are some of the most frequent interventions to help individuals and organizations achieve their short-term and long-term goals (Rodriguez & Walters, 2017). Training and development is also a function within human resource management to fulfill current and expected performance (Rodriguez & Walters, 2017; Karia et al., 2016). The literature on human management revealed that employees are the most important resource and asset of an organization and perform better when adequately trained (Aghimien et al., 2019). Moreover, good employee performance enables to drive the improvement of organizational performance. Training and development have been defined in several ways by different authors. The main idea highlighted is workforce capability enhancement (Imran & Tanveer, 2015). These enhancements specifically include skill, knowledge, behavior change, and attitude. Besides, recent researches (Rodriguez & Walters, 2017; Karia et al., 2016; Aghimien et al., 2019) also emphasizes that training and

development is an organized and educational process. Such as Karia et al. (2016) indicated that training and development in an organization is an educational process whereby employees can learn new information and re-learn and reinforce existing knowledge and skills. With this process, Employees could achieve increased performance and the correction of behavior and attitude. Imran & Tanveer (2015) also stated that training and development is a more logical and organized way of improving the workers' skills, knowledge, and attributes to fulfill their job tasks better.

Work-life Balance

Work-life balance is an emerging contemporary issue that everyone struggles to balance between the work and family domains. Soomro et al. (2018) revealed that work-life balance in the workplace had become a more important issue as it tends to exhibit positive results such as job satisfaction, employee commitment, and job performance. In particular, Adisa et al. (2017) indicated the fact that work-life balance is crucial for success in today's highly competitive business world could no longer be denied.

Many research defined a work-life balance with different emphasis. Some researchers emphasize work-life balance as the ability of individuals to manage the activity of work and life. Work-life balance also refers to an individual's ability to manage their work and family commitment and other non-work responsibilities and activities as articulated by Banu & Duraipandian (2014), Anwar et al. (2013), and Adisa et al.(2017). Other studies by Soomro et al. (2018), Pasamar & Valle Cabrera (2013), and Dizaho et al. (2017) highlighted that personal perception or satisfaction determined the conditions of work-life balance. Banu and Duraipandian (2014) further defined work-life balance as individuals' ability to pursue and succeed in both work and non-work while balancing the satisfaction of their own experience. When employees achieve a work-life balance, such a condition is meaningful to the organization. Achieving a balance between work and life can bring multiple benefits to the employee, resulting in employee motivation, productivity, and less stress (Johari et al., 2018). Meanwhile, the presence of work-life balance is also linked to the satisfaction of an employee's personal needs, which, in turn, improves the employee's job performance (Thevanes & Mangaleswaran, 2018).

Job Performance

Job performance is generally defined as behaviors or actions relevant to its goals (Koopmans et al., 2011; Rotundo & Rotman, 2002; Sonnentag et al., 2008). Rotundo and Rotman (2002) argued that job performance's real concept depends on the specific context. In this research, job performance refers to employees' actions or behaviors that contribute to the organizational goals, including performing duties and responsibilities, cooperation with others, and interpersonal behaviors. Diamantidis and Chatzoglou (2018) proposed an employee performance assessment model for the further comprehensive study of employee performance, integrating the relations between firm/environment-related factors, job-related factors, and employee-related factors into an analytical employee performance (EP) assessment model. Meanwhile, each of these factors has been examined in the previous literature, articulating that these factors' impacts are directly linked to employee performance. The firm-related factors comprise leadership, supervision, training, and organization climate. The employee-related factors comprise employee commitment, proactivity, work-life balance, and adaptability, and lastly, the job-related factors comprise technology utilization, job communication, and job environment.

Organizational Commitment

Organizational commitment is an important attitudinal variable studied extensively in human resource management, organization behavior, and organization development theory. The definitions of organizational commitment vary in studies (Noraazian & Khalip, 2016), but the definition's critical part is never changed. A lot of studies (Li & Ngo, 2017; Al-Ahmadi, 2009; Salminen et al., 2017; Chen et al., 2006; Soomro & Shah, 2019; Noraazian & Khalip, 2016) to the organizational commitment in the recent year still refer to the organization commitment theory of Meyer and Allen (1991). They emphasized that organizational commitment is an employee's emotional attachment to, identification with, and involvement in the organization. It reflects the psychological bond that ties the employees to their organization.

Organizational commitment and job satisfaction have been studied since the beginning of the human relation movement, especially concerning their influence on employee performance (Salminen et al., 2017). Committed employees are believed to dedicate more of their time, energy, and talent to the organization than those who are not committed (Boshoff & Mels, 1995).

Perceived AI Utilization

Artificial Intelligence (AI)

Artificial Intelligence (AI) refers to IT systems that sense, comprehend, act and learn. AI consists of multiple technologies that enable computers to perceive the world (such as

computer vision, audio processing, and sensor processing), analyze and understand the information collected (for example, natural language processing or knowledge representation), make informed decisions, or recommend action (for instance, inference engines or expert systems) and learn from experience (including machine learning). Intelligent machines are computers and applications with AI embedded. Intelligent systems connect multiple machines, processes, and people (Kolbjørnsrud et al., 2016). Therefore, in this research, artificial intelligence (AI) refers to the relevant applications or systems with AI embedded in the bank to help managers and staff finish the working arrangement, reporting, and routine to have better decision-making and communication.

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) developed by Davis (1989) to explain computer usage behavior has achieved wide acceptance and been validated by numerous empirical studies as an accurate predictor of system usage and acceptance. TAM was formulated to identify a small number of fundamental variables suggested by previous research, dealing with computer acceptance's cognitive and affective determinants (Rondan-Cataluña et al., 2015). Specifically, TAM is based on two particular beliefs, perceived usefulness (PU) and perceived ease of use (PEOU), as the main antecedents of computer acceptance. (Davis, 1989; Rondan-Cataluña et al., 2015). Perceived usefulness is defined as the extent to which a person believes that using a specific application system will increase their job performance within an organizational context. Perceived ease of use refers to the extent to which a person believes that using the new technology would not require physical and mental effort. The perceived usefulness and ease of use of the technologies affect users' attitudes towards using information technology (IT), influencing one's behavioral intentions and, finally, actual system use. (Davis, 1989)

Furthermore, Omar et al. (2019) proved that perceived usefulness and ease of use have a significant relationship with the dependent variable, employee performance. Therefore, the research integrated perceived usefulness and perceived ease of use of AI-related systems into one concept-- perceived AI utilization, and define it as the degree to which a person believes that using the artificial intelligence would improve his job performance or would be free of effort or would not require mental effort.

Supervision

Supervision is defined as an interactive process that supervisors provide/offer employees support, encouragement, and concern in promoting organization goals and enhancing personal and professional development (Reed, 2015). Likewise, Omisore (2014) studied supervision as promoting employee productivity and performance; the author also indicated supervision is a developmental process designed to support and enhance staff's

acquisition of motivation, autonomy, self-awareness, and skills necessary to accomplish the job at hand effectively. Babin and Boles (1996) use supervisor support as the research term of supervision and define the degree to which employees perceive that supervisors offer employees support, encouragement, and concern. They demonstrated supervisor support has a positive impact on job satisfaction and could indirectly affect employee performance. Such the research result also was showed in other relevant researches (Bhatti et al., 2018; Al-Ahmadi, 2009; Valaei & Rezaei, 2016).

Effective supervision plays a motivating factor that increases job satisfaction and commitment, leading to high job performance. However, the workplace's lack of supervision has far-reaching negative impacts on employees' safety, productivity, morale, and performance (Omisore, 2014). Diamantidis and Chatzoglou (2018) concretely indicated that the manager or supervisor should dynamically support the employee's job-related action and improve the organizational climate and job environment.

Needs Assessment

A needs assessment is a systematic process of identifying the needs before understanding how to improve service, operation, job performance, and organization development. Sapsombat and Roengsumran (2019) further indicated that needs assessment is a process that is used to estimate deficiencies which are the measurable gap between "what is" or the current state of things and the "what should be" or the desired state of things. Eventually, the deficiencies (gaps) between the current state and the desired state are defined as "need" (Sapsombat & Roengsumran, 2019; Rouda & Kusy, 1995).

Purposes and benefits of needs assessment include clarifying the current state and problems, identifying needs, specifying causes of problems and feasible solutions to them, and identifying appropriate intervention and new projects (Sapsombat & Roengsumran, 2019). Wongwanich (2019) analyzed and synthesized various needs assessment models, and the results indicated five stages for a needs assessment model as follows: 1) identifying what should be, 2) exploring the current state of the situation (what is), 3) analyzing discrepancies between 1 and 2, 4) analyzing causes of discrepancies and prioritizing them, and 5) exploring and identifying solutions for the causes identified in Stage 4. Besides, Wongwanich (2019) also offered a simple method for the needs analysis. The needs are calculated by Mean Deference Method (MDF), which finds out the means of I(Importance or desired performance) and D(Degree of success or current performance), called rank order of deference scores, and prioritizes the importance by using the modified Priority Need Index (PNI_{modified}), which Wongwanich (2005) (cited by Deechai et al., 2019) has adjusted. It is a process to determine the differential rate of (I- D) and divide it with D to control the needs' scope.

The equation is $PNI_{\text{modified}} = (I-D)/ D$ (Deechai et al., 2019). Formulation: $PNI_{\text{modified}} =$

(I – D)/D. Each abbreviation definition includes I = importance or desired performance and D = degree of success or current performance. An effective needs assessment can be beneficial for decision-makers and organization management and development. The main purpose is to provide useful information for supporting decision-making through the research findings.

Conceptual Framework

The conceptual framework of the research is shown in the following Figure 1. The research’s conceptual framework mainly focuses on the five performance-related factors in training & development, work-life balance, supervision, organizational commitment, and perceived AI utilization. The five variables are selected based on numerous empirical studies mentioned earlier in this paper where these variables were confirmed to have interwoven with employee performance which represents the desired condition.

Figure 1

Conceptual Framework of the Study



(Researcher, 2020)

Research Methodology

This article employed the quantitative method as the primary method for data collection. The data were gathered using the structured questionnaire, which had also been IOC validated and tested with Cronbach Alpha Co-Efficient. The questionnaire contained the fixed choices and open-ended questions to collect the relevant data from G bank all level employees (staff, supervisor, and manager).

Scope of Population and Sampling

The research site was in the capital city Nanning of Guangxi, South China, G

Commercial Bank. The respondents included staff, supervisors, and managers, totaling 400 full-time employees representing different departments and positions.

According to De Vaus (2002), the required sample size depends on two critical factors: 1) the degree of accuracy and 2) the extent to which there is variation in the population regarding the key characteristics of the study. De Vaus (2002) further elaborated that for a population where most people will answer a question in the same way, and the degree of the varied population is not strong, a smaller sample will do. Therefore, based on De Vaus (2002) and the relevant needs assessment study, the research needs at least 123 internal employees selected through simple random sampling to participate in the survey. A table from De Vaus (2002) is used as a reference for the acceptable sampling error.

Table 1

Sample Sizes Required for Various Sampling Errors at 95% Confidence Level (Simple Random Sampling)

Sampling error ^a %	Sample size ^b	Sampling error	Sample Size
1.0	10 000	5.5	330
1.5	4 500	6.0	277
2.0	2 500	6.5	237
2.5	1 600	7.0	204
3.0	1 100	7.5	178
3.5	816	8.0	156
4.0	625	8.5	138
4.5	494	9.0	123
5.0	400	9.5	110
		10	100

Notes: ^a This is in fact two standard errors.

^b This assumes a 50/50 split on the variable. These sample sizes would be smaller for more homogeneous samples

Source: From the Surveys in Social Research (P81). 5th Edition, by De Vaus, D. A., 2002 Routledge, London.

Based on Table 1 and the research context, the 123 sample was adequate, with a 9% sampling error is the basic acceptable benchmark for the research.

Scope of the Research Instrument

This research employed a structured questionnaire comprising fixed choices and open-ended questions to collect responses from the respondents. The semi-structured questionnaire consisted of three parts:

Part I: General information about the respondents.

Part II: The questions related to the five performance-related factors and employed the 5-Likert Scale for the respondents to fill out the answer.

Part III: The open-ended question, asking employee’s suggestions for the improvement of job performance. All measurements of the factors in the research model were adapted from well-established instruments in the literature. Table 2 illustrated the sources of

measurements and Cronbach Alpha Co-Efficient Reliability test results.

Table 2

The Result of Item Objective Congruence (IOC) and Reliability Testing (Cronbach Alpha)

Variable	No of Question	Questions	IOC	Cronbach's alpha
Perceived AI Utilization	5	Q1-Q5	0.67, 0.67, 1.00, 1.00, 0.67	0.838
Supervision	5	Q6-Q10	1.00, 1.00, 1.00, 1.00, 0.67	0.872
Work-Life Balance	5	Q11-Q15	1.00, 1.00, 1.00, 1.00, 1.00	0.851
Organizational Commitment	5	Q16-Q20	1.00, 1.00, 1.00, 1.00, 1.00	0.906
Training & Development	5	Q21-Q25	1.00, 1.00, 1.00, 1.00, 1.00	0.941

The reliability of Cronbach Alpha Co-Efficient treatment was conducted. A total of 138 responses were also tested again to ensure consistent reliability after the pilot test of 30 samples. According to the empirical education journals, and international common statistic criteria, Cronbach's alpha acceptability value is around 0.7, and the value reaches 0.8, or greater is better (Cortina, 1993). In Table 2, Cronbach's alpha for the factors ranged from 0.835 to 0.941, which exceeded the acceptable value of 0.7; this indicates that all items in each factor were reliable and consistently reflect the relevant concept.

Scope of Data Collection and Analysis

The data collection was conducted during the coronavirus-19 outbreak, and to ensure continuity, the online questionnaire was utilized to collect data. After getting permission from G commercial bank's top management, designated staff and supervisors assisted the researcher in distributing the questionnaire. The researcher employed Tencent's questionnaire program platform to develop an online questionnaire and then shared the link to the online questionnaires to G Commercial Bank via the WeChat communication channel's designated coordinators.

The data analysis comprised descriptive statistics (e.g., Mean, Standard Deviation), Modified Priority-Needs Index (PNI), and the Matrix Analysis employed to identify strengths and weaknesses, in which the Matrix analysis was divided into four quadrants (Wongwanich, 2019), comprising Quadrant 1 Best result/Highly Successful, Quadrant 2 Good result/Successful, Quadrant 3 Need improvement, and Quadrant 4 Inconsistent result, but not concerned. The cut-off score in this study was 3.8.

Results and Discussions

The results' presentation started with descriptive statistics where raw data were drawn from the actual responses to the 25-statement questionnaire, and the contents analysis drawn

from the open-ended questions in the questionnaire which the respondents completed.

Demographic Profile

One hundred thirty-eight employees in G bank participated in this survey of the research. The 71 responses (51.4%) were males, and 67 responses (48.6%) were females. The 68 responses (49.3%) were with single or marital status.

Secondly, respondents' age mainly ranged from 26 to 34 years ($n=88$), presenting 64.0%, 22-25 years ($n=32$), representing 23.0%, 35-45 years ($n=18$), representing 13.0%, and 46-55 years ($n=1$) representing 3.0%.

Thirdly, the 113 (81.9%) respondents obtained a Bachelor’s degree, 16 persons obtained a Master’s degree, and nine responses obtained a college degree. For the year of service time, the majority of respondents represented 1–3-year group (61 persons with 44.2%), 4-6 year group (50 persons with 36.2%), and 7-10 years group (22 persons with 15.9%). By job position, there were 102 staff, 29 supervisors, and seven managers.

The Results of the Descriptive Statistics, $PNI_{Modified}$ and Rank: The Gaps between the Current and Expected Situation

Descriptive statistics, modified priority need index (PNI), and ranking are presented below.

Table 3

Descriptive Statistics, $PNI_{Modified}$, and Rank: All Main Variables

Factors	n	Current situation (D)		Expected situation (I)		Mean diff.	PNI Modified	Rank
		M	SD	M	SD			
Work-Life Balance	138	3.67	0.72	4.19	0.58	0.52	0.140	1
Perceived AI Utilization	138	3.78	0.65	4.16	0.57	0.38	0.100	2
Training & Development	138	3.85	0.77	4.17	0.59	0.32	0.083	3
Supervision	138	3.86	0.72	4.15	0.51	0.29	0.074	4
Organizational Commitment	138	3.90	0.71	4.09	0.59	0.19	0.050	5

Note: $PNI_{Modified} = (I-D)/D$

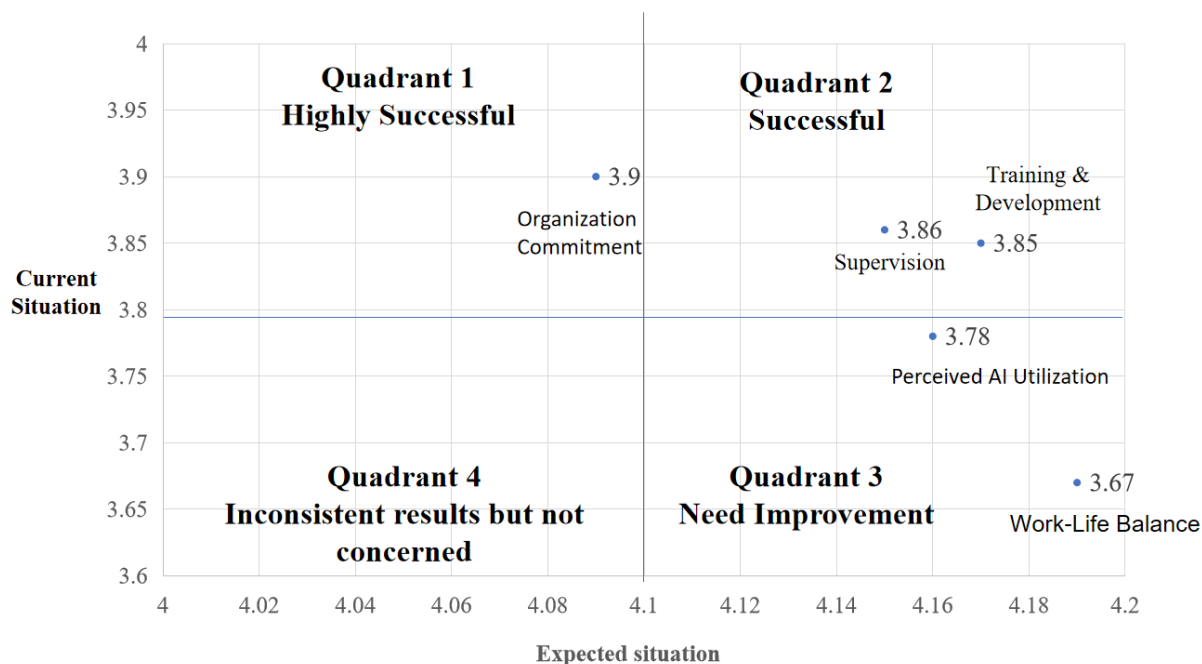
Table 3 showed that the top three performance-related factors of priority need index improvement comprised 1) work-life balance, perceived AI utilization, and training & development. The work-life balance factor obtained $PNI_{modified} = 0.14$; the Perceived AI

utilization obtained $PNI_{\text{modified}} = 0.10$, and training & development obtained $PNI_{\text{modified}} = 0.08$ respectively.

In terms of the strengths and need improvement identification, the matrix analysis was also employed to visualize the current and expected situations.

Figure 2

Metrix Analysis



(Researcher, 2020)

As Figure 2 illustrated, from the lens of Metrix analysis, work-life balance and perceived AI utilization fell within Quadrant 3 needs improvement. Meanwhile, training and development and supervision fell within Quadrant 2 Successful, and lastly, organization commitment fell within Quadrant 1 high successful.

The followings are the detailed presentation of each variable and the questions that obtained the highest PNI_{Modified} values.

Work-Life Balance

The following statements concerning the work-life balance questions were ranked in the top three order of priority needs.

The first-order priority need was Q4. I am satisfied with the way how I manage my work-life balance today ($PNI_{\text{Modified}}=0.23$).

The second-order priority need was Q3. I feel that balancing my work demands and personal priorities is currently just right ($PNI_{\text{Modified}}=0.22$).

The third-order priority need was Q2. I feel that I can accomplish my work goal and my personal goal at the same time($PNI_{Modified}=0.18$).

Perceived AI Utilization

The following statements concerning the perceived AI utilization questions were ranked in the top three priority needs.

The first-order priority need was Q5. I find the AI-related systems (e.g., intelligent terminal, quick loan, Ding talk) do not require much mental effort to learn how to use them ($PNI_{Modified}=0.15$).

The second-order priority need was Q1. Using the AI-related systems (e.g., Intelligent terminal, quick loan, and Ding talk) in my job would enable me to accomplish tasks more quickly ($PNI_{Modified}=0.12$).

The third-order priority need was Q2. Using AI-related systems (e.g., intelligent terminal, quick loan, and Ding talk) would shorten my work time. ($PNI_{Modified}=0.09$).

Training and Development

The following statements concerning the training and development questions were ranked in the top priority needs. All four questions (Q1, Q2, Q4, and Q5) obtained the same rank.

The first-order priority need was Q1. Training & development provided by the company helps me accomplish tasks; Q2. The job knowledge gained during training & development increases my work performance. Q4. Training & development improves my skills to work with others at work (e.g., communication, collaboration, problem solution, and idea expression); and Q5. Training & development focuses on the use of new technology and ($PNI_{Modified}=0.08$)

Supervision

The following statements concerning the Supervision questions were ranked in the top priority needs. Question 3 and Question 5 obtained the same rank based on the $PNI_{Modified}$ values.

The first-order priority needs comprised Q3. My supervisor exercises fairness when working with me in the workplace ($PNI_{Modified}=0.08$) and Q5. My supervisor stands up for team members, even though they make mistakes ($PNI_{Modified}=0.08$).

The second-order priority need was Q4. When the barriers get in the way of accomplishing my goals, my supervisor helps me overcome them ($PNI_{Modified}=0.07$).

Organizational Commitment

The following statements concerning the organizational commitment questions were

ranked in the top priority needs.

The first-order priority need was Q1. I would spend the rest of my career in this organization (PNI_{Modified}=0.11).

The second-order priority need was Q2. This organization gives me a good sense of meaning (PNI_{Modified}=0.05).

The third-order priority need was Q5. I am proud of sharing my organization's success stories with outsiders (PNI_{Modified}=0.03).

The Results of the Contents Analysis

The 35 respondents out of 138 provided the relevant suggestions in the open-ended question section of the structured questionnaire when they asked how job performance could be improved. Twenty-eight passages were analyzed, coded, and synthesized to develop common ideas. The following themes emerged from the contents analysis:

Theme 1: Employee Compensation and Benefit

The employee compensation and benefit theme emerged, the respondents looked forward to improving the employee compensation and improving their motivation and commitment to pursue job performance. The following statements highlighted the employee's viewpoints of improving the employee compensation and benefit:

“Wages, performance bonuses, and benefits have been greatly reduced compared with before, and it is difficult to balance life and work. The funds of reward are not transparent. Those situations make it hard to motivate employee's proactivity. We hope to get the equivalent return or be rewarded when we are helping the company create revenue.” (Respondent 8)

“Strengthen the reward and incentive, and cash it timely and make use of scientific and technological means to clarify the reward policy, timely adjust and cash the reward when the reward policy is going to change.” (Respondent 20)

“Improving the reward/salary/compensation system is necessary.” (Respondent 33)

“Raise ordinary staff's income; some revenue should be made public and transparent; ensure the employee's rest time, develop or adopt relevant institutions for the overtime to guarantee employee benefit. (Respondent 35)

These quoted statements above typified the majority of respondents' viewpoints on employee compensation and benefit. They hoped the company's relevant institutions or systems related to employee compensation and benefits could be improved and well-aligned

with its strategy development, seeking a balance between effort and reward, even work-life balance.

Theme 2: Training and Development

Training and development emerged as the second theme as one of the main suggestions commonly found in the open-ended questions. The contents analysis results revealed that respondents' expectations toward targeted training and development with its high-quality provision. Respondents wish to have regular, diversified, and targeted training and development to improve their working skills, professional knowledge, and business operation knowledge, thereby improving individual performance. Some of the respondents reported that:

*"I hope to get more relevant training and improve my ability."
(Respondent 2)*

"Training needs to be more targeted." (Respondent 9)

*"1. Learn Excel skills; 2. System information source management."
(Respondent 13)*

"Develop the regular training and development, do not just limit the methods of reinforcing understanding of the relevant training context on the exam, asking questions and other ways." (Respondent 28)

Theme 3: The Reliable and User-Friendly Technology

Theme 3 was related to the company's technological competencies. As the adoption of sophisticated information technology in the business area became common. Respondents articulated more expectations on the development of the company's technological competencies:

"Optimize the system of KPI data. There is a little bit of complexity to inputting the KPI data (input the customer data one by one and have to wait for the system to refresh data). Different marketing businesses have different marketing codes; it leads to too many repetitive works when employee input the KPI date into the relevant system." (Respondent 5)

"The company's relevant systems or application should be more intelligent." (Respondent 12)

"Reduce the time of double-checking of employee's KPI data, and reduce repetitive work." (Respondent 21)

“Strengthen and optimize the compensation management system and improve the system intelligence.” (Respondent 29)

These quotes above typified the majority of respondents' viewpoints on reliable and user-friendly technology. The highly expected the company to improve its technological competencies to boost job efficiency and standard operating system, especially on the adoption of AI utilization or the advancement of more reliable and user-friendly information systems.

Theme 4: Participative Leadership/ Supervision

Participative leadership/ Supervision emerged as the fourth theme. Some respondents reported in the open-ended questions, which were in common in the content analysis as follows:

“As a new employee, I hope my colleagues or supervisor can be more patient rather than blaming so that people can increase confidence and enjoy the work.” (Respondent 7)

“I hope that the company leaders or decision-makers can go to the front line to investigate and know more about the work of employees and help them to improve their working methods.” (Respondent 23)

Theme 5: Organization Communication

Organization communication was common in the contents analysis as the theme No. Five, the respondents stated as follows:

“Reinforce the understanding of employee to company policy. Grab and highlight the critical point in the process of information transfer. Ensure the effectiveness of the information transfer from top to down and point to the surface.”(Respondent 28)

Theme 6: Standardized Operations

One respondent shared the comment or suggestion in the open-ended questions, stating as follows:

“Formulate SOP as soon as possible.”(Respondent 22)

“Eliminate formalism and improve work efficiency.” (Respondent 31)

As presented above, respondents hoped that the leaders could often go to the frontline to listen to employee's voices and guide them to work. They also expected that the supervisors or leaders could participate more in employee's routines, give support and

encouragement to their job instead of blame. They desired communication and standardized operations, which can improve effectiveness, efficiency and promote transparency.

Comparative Quantitative and Qualitative Data Findings

Table 4 below presented the discussions on quantitative and qualitative findings.

Table 4

Quantitative Findings and Qualitative Findings' comparison

Quantitative Findings (PNI _{modified})			Qualitative Findings (Content analysis)	
Factors	PNI _{modified}	Rank	Themes	Frequency
Work-Life Balance	0.140	1	Employee Compensation and Benefits	10
Perceived AI Utilization	0.100	2	Training & Development	9
Training & Development	0.083	3	Reliable and User-Friendly Technology	6
Supervision	0.074	4	Participative Leadership/ Supervision	4
Organizational Commitment	0.050	5	Organization Communication	3
			Standardized Operations	3

As Table 4 illustrated, the work-life balance ranked the first-order priority, whereas the qualitative finding implied that the key informants articulated employee compensation and benefits as the work-life balance’s motivational management. The second theme concerning training & development was supported by Anwar et al. (2013), suggesting that creating a work-life balance, purposeful training, and development, perceived equity-based salary package, and a beneficial work environment are the areas that companies should invest more time understanding the needs and act on accordingly. When there is a balance perception between work and life and extrinsic factors, employees feel satisfied, happy, and under less pressure; these could propel their commitment and perform better. This finding highlighted that work-life balance was essential for the employee to maintain G commercial bank’s job performance.

The perceived AI utilization ranked the second; it was congruent with the reliable and user-friendly technology theme’s qualitative findings, highlighting that the perceived AI utilization was essential for its job performance. This finding is also supported by previous studied results (Isaac et, al., 2017; Hou, 2012; Goodhue & Thompson, 1995), suggesting that information technology positively affects individual performance. However, firstly, the technology must be utilized to enable a good fit with the job it supports.

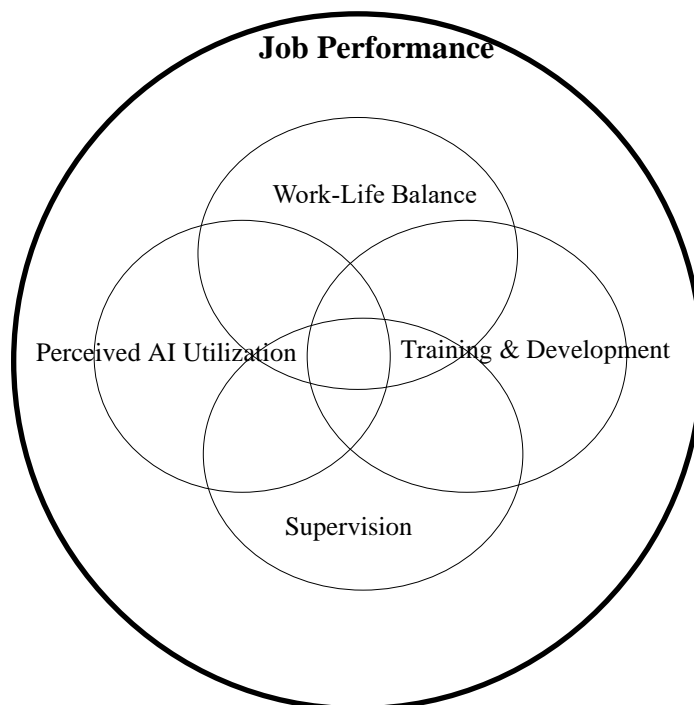
The finding of training & development ranked the third; it was congruent with the training & development theme's qualitative findings, highlighting that training & development was essential for the employee to improve their G bank's job performance. This finding was proved by previous research as highlighted in the literature part, including the study of banking systems (Imran & Tanveer, 2015); this empirical research suggested that an organization needs to consistently pay attention to training & development because it functions within human resource management to fulfill the gaps between current and expected performance (Rodriguez & Walters, 2017). Moreover, the direct effects enhance employees' capabilities, skills, and knowledge; these are the foundation for the organization's competitive advantage in contemporary global business.

As one of the main variables in this study, the supervisor was ranked fourth and was congruent with the qualitative findings of participative leadership/Supervision and the organizational communication themes, highlighting that supervision was a positive reinforcement process for the employee's job performance in G bank. Some researches explained (Valaei & Jiroudi, 2016; Diamantidis & Chatzoglou, 2018), suggesting that managers' or supervisors' interactive process supports and concerns their employees to enhance their professional development.

Proposed OD Intervention and Discussions

Figure 3

The Holistic Action Framework for Intervention



(Researcher, 2020)

Based on the presentation of data and findings, the Organization Development Interventions could be proposed. As Figure 3 illustrated, G commercial bank should regard the work-life balance, the perceived AI, the training & development, and the supervision for improvement. The followings are the research’s proposed OD intervention based on the holistic action framework:

Work-Life Balance

1.Revisit the employee compensation & benefit to identify the alignment strategy with the current business strategy. Employee compensation & benefit is one of the reflections associating with work-life balance as implied in the contents analysis of qualitative data. This conclusion was also supported by Anwar et al. (2013), which discussed that compensation and benefit are the important factors for determining the work-life balance and individual performance, and employees wanted a-just-and-fair compensation and a friendly work environment to fulfill their private-professional life. The company background showed that G bank’s business was scaling up. Employees needed to pursue new businesses; the qualitative findings implied that the current compensation & benefits system was not aligned with the growing business and its current company business strategy. The previous empirical research (Bataineh, 2019; Banu & Duraipandian, 2014) concluded that the work-life balance’s higher satisfaction positively contributed to its effectiveness.

2. Improve organizational support through the utilization of AI and training & development. The new jobs and tasks with less supportive resources are difficult for employees to succeed in their works. It also leads to work demands and goals that occupy a more time proportion of the work-life balance. The AI-related application and mobile information technology devices can facilitate employee's work and work-life balance management; this fact is supported by (Adisa et al.,2017), indicating that flexibility is the critical indicator for work-life balance, and it is one of the practical benefits, leveraging mobile information technology devices. On the same token, well-intended training & development helped employees to improve essential knowledge and skills needed for the job; this was also supported by Anwar et al. (2013), elaborating that the well-intended training & development balancing between the individual and organization propelled employees loyalty, honesty, discipline, and responsibility.

Perceived AI Utilization

1. Optimize AI-related applications or systems by developing the user's requirement analysis record and analyzing the requirements from the views of software design and the user is critical because employees' perception toward using the new technology can directly reflect the perceived usefulness of the new technologies. Such findings can be supported by the results of previous studies(Isaac et, al., 2017; *Hou*, 2012;Isaac et al., 2018; Davis ,1989; Goodhue & Thompson, 1995), stating that technology's utilization and good-fit with the job can improve job performance.

2. Enhance the training to improve employee's understanding of relevant systems and develop the facilitating condition to boost technology utilization. The findings indicated that the G bank's current AI-related systems are easy to learn to operate but need to spend much mental effort to learn further or study it. Based on this situation, G bank needs to regularly organize the related training of learning new technology to improve the employee's understanding of relevant systems. Such implication is congruent with Imran & Tanveer (2015), stating that the training and development was a more logical and organized way of improving the skills, knowledge, and attributes needed by the workers . Dong (2011) affirmed that facilitating can be done variously, namely offering specific instruction books and setting the professionals for guidance.

3. Embed the importance of technological development and utilization in the organizational structure and function to improve the degree to which employees accept the new technology. Technological development and utilization is a very significant process in the company's future strategy development. In this process, perceived usefulness, perceived ease of use, and the employee's awareness of technological development and utilization determine the company's speed or absorb new information technology. This finding is supported by Isaac et al. (2018), concluding that if the organization emphasizes perceived

usefulness and perceived ease of use on the utilization of information technology, it can create employees' awareness. When the awareness of technology utilization is present, the adoption of information technology would be optimized; meanwhile, encouraging every employee to study and use intelligent office automation and create an internal expert group to propel the process. These actions eventually contribute to the improvement of work-life balance and training & development.

Training & Development

1. Target training for specific positions or specific groups of people, rather than mass training that everyone can attend. Imran & Tanveer (2015) indicated that the biggest issue observed in the failure of training programs in companies and particularly in banks was the employees' inability to apply what they learned during training. Organizing mass training without concrete purpose likely derailed the training effectiveness; some employees might not find the training is relevant. The researcher proposed that G Commercial bank classified the content of training & development. Many previous studies proved that the targeted training to specific groups of employees could help them accomplish the task successfully and quickly master the new knowledge in their work area (Anwar et al., 2013; Imran & Tanveer, 2015; Rodriguez and Walters, 2017), and it can reduce the unnecessary cost of labor and training.

2. Provide appropriate training to bolster essential skills and applies new technology to elevate the operation. Skill-based training and new technologies are the employee's expectations for priority improvement. According to the qualitative data findings, G commercial bank's training activities mainly focused on business study or business process training; and not emphasized managerial or soft skills and all existing technologies available for the employees. It was noted that training on business knowledge made the employees more competent in their respective positions, but the job efficiency and performance still require managerial skills, such as communication, collaboration, problem solutions, time management, and idea articulation). This finding was congruent with Rodriguez & Walters (2017), indicating that the major purpose of training & development was to elevate employee competencies and skills necessary for individual and team performance, and training and development invariably motivated individuals; and thus providing appropriate training & development to employees relate to work skills created a long-term impact.

3. Diversify training methods to enhance training efficiency through the flexible use of artificial intelligence (AI) technology. With accelerated developments in technology, training & development are no longer limited. Online training and self-learning using intelligent applications are feasible to enhance employee knowledge, skill, and the ability to accomplish the task. Upadhyay and Khandelwal (2019) discussed that training and development functions also significantly transformed AI applications. AI-based training can

assess training needs, recognize trainee's weaknesses, and design personalized content and delivery of training. It is worth mentioning that the traits of AI-based training above have already been applied in the financial service and entertainment (e.g., YouTube, mobile banking). Upadhyay and Khandelwal (2019) further indicated that the combination of training and AI technology could facilitate the employee's training process. With this, G commercial bank could develop its AI-based training system and blend traditional and AI-based training to diversify training methods to fulfill its employees' diverse needs.

Supervision

Establish targeted training & development programs to strengthen the supervision skills of the supervisor. According to the qualitative data analysis, most of the training & development programs to the supervisor or middle manager in G bank focused on business knowledge, policy transformation, and new business strategy when many supervisors did not acquire sufficient training in supervision skills (e.g., communication, collaboration, problem solution, and idea expression) and new technologies applications. G Commercial bank should consider strategizing and clarifying the specific skills-based training contents and measures associated with job requirements and performance. This proposal of supervision skill training and development is supported by Omisore (2014), indicating that supervision can improve results. With appropriate supervisory skills in the workplace, the team's productivity can be consistently improved as Diamantidis and Chatzoglou (2018) also concluded that managers and supervisors should dynamically support employee's job-related actions at a personal level and improve organizational climate and job environment to directly or indirectly influence their job performance.

Conclusions

This research aims to determine the priority needs of improving the performance-related factors, comprising training & development, work-Life balance, supervision, organizational commitment, and perceived AI utilization, and propose a set of OD interventions. Based on the PNI_{modified} and the discussion of key findings, the research found that the work-life balance ($PNI_{\text{modified}}=0.14$), perceived AI utilization ($PNI_{\text{modified}}=0.10$), the training & development ($PNI_{\text{modified}}=0.08$), and the supervision ($PNI_{\text{modified}}=0.07$) were the priority needs.

G commercial bank needed to ponder the work-life balance as the desired condition from its employees' view and refine its current compensation systems to equate the employees' actual and perceived workloads. G commercial bank should create positive reinforcement with well-intended training and development to reframe the perception of its employees' AI utilization. As for the training & development, the company should define,

refine, and align its training domains, emphasizing technical knowledge and soft skills development for the supervisor.

Recommendations

For the company, before implementing the organization development interventions, it is noted that the company should first review the organizational policies and processes related to work-life balance, AI utilization, training & development, and supervision to ensure the holistic integration of employee's developments to support the business strategy and growth. Second, the company should further investigate the work-life balance, perceived AI utilization, training & development, and supervision from its employees' lens, and upgrade the policy to relevantly respond to the growing needs of employees, namely alignments between the compensation and benefit and business strategy, seeking practical ideas on the applications of AI-related functions, and designing the training and development contents for a specific group by engaging key stakeholders from the operational teams.

Further Research

This research employed the needs assessment method to determine the priority needs for improving the employees' performance based on the selected variables, including training & development, work-Life balance, supervision, organizational commitment, and perceived AI utilization. Based on the research results and recommendations, further study can be considered by furthering the inquiry or interview with the employees about the concrete needs to the details of the factors in terms of the work-life balance, perceived AI utilization, and training & development.

Additionally, some emerging variables found from the contents analysis could become the study's topic for other researchers, including the correlation study or factor analysis of participative leadership, compensation and benefit, and organizational communication, and how these factors influence employee commitment and employee performance.

References

- Adisa, T. A., Gbadamosi, G., & Osabutey, E. L. (2017). What happened to the border? The role of mobile information technology devices on employees' work-life balance. *Personnel Review*, 46(8), 1651-1671. <https://doi.org/10.1108/PR-08-2016-0222>
- Aghimien, L., Aigbavboa, C., & Thwala, W. (2019). Effects of Training and Development on Employee Performance in a South African Construction Company. *Croatian Association for Construction Management*. 7, 845-852. https://www.researchgate.net/publication/335831139_Effects_of_Training_and_Development_on_Employee_Performance_in_a_South_African_Construction_Company

- Anwar, J., Hansu, S. A. F., & Janjua, S. Y. (2013). Work-life balance: What organizations should do to create balance? *World Applied Sciences Journal*, 24(10), 1348-1354.
- Al-Ahmadi, H. (2009). Factors affecting performance of hospital nurses in Riyadh Region, Saudi Arabia. *International Journal of Health Care Quality Assurance*, 22 (1), 40-54. <https://doi.org/10.1108/09526860910927943>
- Babin, B. J., & Boles, J. S. (1996). The effects of perceived co-worker involvement and supervisor support on service provider role stress, performance and job satisfaction. *Journal of Retailing*, 72(1), 57-75. [https://doi.org/10.1016/S0022-4359\(96\)90005-6](https://doi.org/10.1016/S0022-4359(96)90005-6)
- Banu, R. A., & Duraipandian, K. (2014). Development of an instrument to measure work life balance of it professionals in Chennai. *International Journal of management*, 5(11), 21-33.
- Bataineh, K. A. (2019). Impact of work-life balance, happiness at work, on employee performance. *International Business Research*, 12(2), 99-112
- Bhatti, M. A., Mat, N., & Juhari, A. S. (2018). Effects of job resources factors on nurses job performance (mediating role of work engagement). *International Journal of Health Care Quality Assurance*, 31(8), 1000-1013. <https://doi.org/10.1108/IJHCQA-07-2017-0129>
- Boon, L. K., Fern, Y. S., Sze, C. C., & Yean, O. K. (2012). Factors affecting individual job performance. In *International Conference on Management Finance and Economics (ICMEF 2012) Proceedings* (pp. 15-16)
- Boshoff, C., & Mels, G. (1995). A causal model to evaluate the relationships among supervision, role stress, organizational commitment and internal service quality. *European Journal of Marketing*, 29 (2), 23-42. <https://doi.org/10.1108/03090569510080932>
- Chen, J., Silverthorne, C. and Hung, J. (2006). Organization communication, job stress, organizational commitment, and job performance of accounting professionals in Taiwan and America. *Leadership & Organization Development Journal*, 27 (4), 242-249. <https://doi.org/10.1108/01437730610666000>
- Cortina, J. M. (1993). What is coefficient alpha? An examination of theory and applications. *Journal of applied psychology*, 78(1), 98-104.
- Davis, F.D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, 13(3), 319-340.
- De Vaus, D. A. (2002). *Surveys in Social Research*. (5th Ed), London, *Routledge*, 70-82
- Deechai, W., Sovajassatakul, T., & Petsangsri, S. (2019). The Need for Blended Learning Development to Enhance the Critical Thinking of Thai Vocational Students. *Mediterranean Journal of Social Sciences*, 10(1), 131.
- Dizaho, E. K., Salleh, R., & Abdullah, A. (2017). Achieving work life balance through flexible work schedules and arrangements. *Global Business & Management Research*, 9, 9455-9465.
- Diamantidis, A., & Chatzoglou, P. (2018). Factors affecting employee performance: an empirical approach. *International Journal of Productivity and Performance Management*. 68(1), 171-193.

- Dong, J.Q. (2011), User acceptance of information technology innovations in the remote areas of China. *Journal of Knowledge-based Innovation in China*, 3(1), 44-53.
- Goodhue, D.L. and Thompson, R.L. (1995). Task-technology fit and individual performance. *MIS Quarterly*, 19(2), 213-236.
- Hou, C.-K. (2012). Examining the effect of user satisfaction on system usage and individual performance with business intelligence systems: an empirical study of Taiwan's electronics industry. *International Journal of Information Management*, 32(6), 560-573.
- Imran, M., & Tanveer, A. (2015). Impact of training and development on employees' performance in banks of Pakistan. *European Journal of Training and Development Studies*, 3(1), 22-44.
- Isaac, O., Abdullah, Z., Ramayah, T. and Mutahar, A.M. (2017). Internet usage, user satisfaction, task-technology fit, and performance impact among public sector employees in Yemen. *International Journal of Information and Learning Technology*, 34(3), 210-241. <https://doi.org/10.1108/IJILT-11-2016-0051>
- Isaac, O., Abdullah, Z., Ramayah, T., Mutahar, A. M., & Alrajawy, I. (2018). Integrating user satisfaction and performance impact with technology acceptance model (TAM) to examine the internet usage within organizations in Yemen. *Asian Journal of Information Technology*, 17(1), 60-78.
- Johari, J., Tan, F. Y., & Zulkarnain, Z. I. T. (2018). Autonomy, workload, work-life balance and job performance among teachers. *International Journal of Educational Management*, 32(1), 107-120. <https://doi.org/10.1108/IJEM-10-2016-0226>
- Karia, A., Omari, S., Mwanaongoro, S., & Kimori, Y. (2016). Importance of Training and Development on Performance of Public Water Utilities in Tanzania. *AFRICAN JOURNAL OF BUSINESS AND MANAGEMENT*, 2, 10-18.
- Kolbjørnsrud, V., Thomas, R.J. and Amico, R. (2016). The promise of artificial intelligence: Redefining management in the workforce of the future. *Accenture Institute for High Performance Research Report*, May 19. www.accenture.com/us-en/insight-promise-artificial-intelligence
- Koopmans, L., Bernaards, C. M., Hildebrandt, V. H., Schaufeli, W. B., de Vet Henrica, C. W., & van der Beek, A. J. (2011). Conceptual frameworks of individual work performance: a systematic review. *Journal of occupational and environmental medicine*, 53(8), 856-866.
- Li, H., & Ngo, H. (2017). Chinese traditionality, job attitudes, and job performance: a study of Chinese employees. *Evidence-based HRM*, 5(2), 139-150. <https://doi.org/10.1108/EBHRM-08-2015-0035>
- Meyer, J. P., & Allen, N. J. (1991). A three-component conceptualization of organizational commitment. *Human Resource Management Review*, 1(1), 61-89.
- Omar, N., Munir, Z. A., Kaizan, F. Q., Noranee, S., & Malik, S. A. (2019). The Impact of Employees Motivation, Perceived Usefulness and Perceived Ease of Use on Employee Performance among Selected Public Sector Employees. *International Journal of Academic Research in Business and Social Sciences*, 9(6), 1128–1139.

- Omisore, B. O. (2014). Supervision–Essential to Productivity. *Global Journal of Commerce and Management Perspective*, 3 (2), 104-108.
- Pasamar, S., & Valle Cabrera, R. (2013). Work-life balance under challenging financial and economic conditions. *International Journal of Manpower*, 34(8), 961-974. <https://doi.org/10.1108/IJM-07-2013-0172>
- Reed, T L, (2015). The Relationship between Supervision, Job Satisfaction, and Burnout among Live-In and Live-On Housing and Residence Life Professionals. *LSU Doctoral Dissertations*. 1036. https://digitalcommons.lsu.edu/gradschool_dissertations/1036
- Rodriguez, J., & Walters, K. (2017). The Importance of Training and Development in Employee Performance and Evaluation. *International Journal Peer Reviewed Journal Refereed Journal Indexed Journal UGC Approved Journal Impact Factor*, 3229(1), 206 – 212. https://www.researchgate.net/publication/332537797_The_Importance_of_Training_and_Development_in_Employee_Performance_and_Evaluation
- Rondan-Cataluña, F. J., Arenas-Gaitán, J., & Ramírez-Correa, P. E. (2015). A comparison of the different versions of popular technology acceptance models: A non-linear perspective. *Kybernetes*, 44(5), 788-805. <https://doi.org/10.1108/K-09-2014-0184>
- Rotundo, M., & Rotman, J. L. (2002). Defining and measuring individual level job performance: A review and integration. *Journal of Applied Psychology*, 90(5), 225-254.
- Rouda, R. H., & Kusy, M. E. (1995). Needs assessment: The first step. *Tappi Journal*, 78(6), 255.
- Sapsombat, W., & Roengsumran, A. (2019). A Needs Assessment Study to Improve the Quality of the Thailand National Test. *ASEAN Journal of Education*, 5(1), 33-43. <https://so01.tci-thaijo.org/index.php/AJE/article/view/199716>
- Salminen, H., Vanhala, M. and Heilmann, P. (2017). Work-related attitudes as antecedents of perceived individual-, unit- and organisation-level performance. *International Journal of Organizational Analysis*, 25(4), 577-595. <https://doi.org/10.1108/IJOA-05-2016-1028>
- Simon, J. P. (2019). Artificial intelligence: scope, players, markets and geography. *Digital Policy, Regulation and Governance*, 21(3), 208-237. <https://doi.org/10.1108/DPRG-08-2018-0039>
- Sonnentag, S., Volmer, J., & Sychala, A. (2008). Job performance. *The Sage handbook of organizational behavior*, 1, 427-447.
- Soomro, A. A., Breiteneker, R. J., & Shah, S. A. M. (2018). Relation of work-life balance, work-family conflict, and family-work conflict with the employee performance-moderating role of job satisfaction. *South Asian Journal of Business Studies*, 7 (1), 129-146. <https://doi.org/10.1108/SAJBS-02-2017-0018>
- Soomro, B. A., & Shah, N. (2019). Determining the impact of entrepreneurial orientation and organizational culture on job satisfaction, organizational commitment, and employee's performance. *South Asian Journal of Business Studies*, 8(3), 266-282. <https://doi.org/10.1108/SAJBS-12-2018-0142>

- Thevanes, N., & Mangaleswaran, T. (2018). Relationship between work life balance and job performance of employees. *IOSR Journal of Business and Management (IOSR-JBM)*, 20(5), 11-16. <http://www.iosrjournals.org/iosr-jbm/papers/Vol20-issue5/Version-1/C2005011116.pdf>
- Upadhyay, A. K., & Khandelwal, K. (2019). Artificial intelligence-based training learning from application. *Development and Learning in Organizations*, 33(2), 20-23. <https://doi.org/10.1108/DLO-05-2018-0058>
- Valaei, N., & Rezaei, S. (2016). Job satisfaction and organizational commitment: An empirical investigation among ICT-SMEs. *Management Research Review*, 39 (12), 1663-1694. <https://doi.org/10.1108/MRR-09-2015-0216>
- Valaei, N., & Jiroudi, S. (2016). Job satisfaction and job performance in the media industry: A synergistic application of partial least squares path modeling. *Asia Pacific Journal of Marketing and Logistics*, 28(5), 984-1014. <https://doi.org/10.1108/APJML-10-2015-0160>
- Wongwanich, S.(2019). Needs Assessment Research, Bangkok, Thailand: Chulalongkorn University publisher.