



ABSTRACT

This paper examine the moderating effect of co-worker support on the relationship between training effectiveness and employee performance in Gombe state university, Gombe-Nigeria. The pilot study was conducted to establish the validity and reliability of the research instrument. Subsequently, the instrument will be utilized in conducting research. Accordingly, the researcher sought the view of senior

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ODERATING EFFECT OF CO-WORKER SUPPORT IN THE RELATIONSHIP BETWEEN TRAINING EFFECTIVENESS AND EMPLOYEES' JOB PERFORMANCE- A PILOT STUDY

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Introduction

Employee performance is one of the major concern of most human resource managers in today's organizations - big or small (Abubakar & Mahmood, 2016). Perhaps it is the main reason why billions of dollars are spent on training annually in an attempt to capitalize on the competitive advantage that can be attained by maintaining a proficient workforce (Duggan & Shoup, 2013; Eades, 2014). For example, in spite of various government interventions and efforts; the Nigerian public sector's score-card has remained poor performance and inefficiency (Obi-Anike & Ekwe, 2014). Considering the important role of effective training in bringing public service to an enviable height, if those that are expected to execute policies of the firms and manage business affairs are not well trained and knowledgeable, there would definitely be a problem (Santos & Leite, 2016). Obviously, the achievement of the objectives for which they were employed might be affected. For example, In the United States, organizations spend approximately \$51 billion a year on formal training programs. Canadian organizations also lag when it comes to the amount spent on training per employee, which has remained relatively static over the past decade. In 2014, the total average direct investment in training per employee was



academicians especially professors currently working in the university on the subject matter under consideration to ensure clarity, understanding, and the ability of the questionnaire items to represent the context of the study. The paper utilized the sample of sixty (60) respondents, while a valid response of 100 percent was obtained. The study instrument was scrutinized by some research experts, and the face validity of the instruments was found to be appropriate for the study.

Keywords: Training, Effectiveness, Co-worker Support, Employees and Performance

\$914 compared to \$824 in 2013, \$838 in 2012, \$859 in 2010, \$798 in 2011, \$776 in 2008, and \$842 in 2006. By comparison, organizational spending on training and development per employee in the United States increased from \$1,072 (Cdn) in 2009 to \$1,115 in 2010, and \$1,135 in 2011 and 2013. In addition, the average investment in training as a percentage of payrolls in Canada has remained constant at around 1.75 per cent compared to 2.34 per cent in the U.S. (NOUN, 2018: 173). In the Nigerian case, only 33% of registered companies have successfully implemented training programmes to enhance their employee performance as at 2015, 41% 43% in 2016 and 2017 respectively (Ahmad & Mat, 2017).

Yet, existing theories focus on a narrow component of the training domain, providing an imprecise picture of a lot of factors that contribute to training effectiveness and how the pieces of the problem fit together. Training is among the most pervasive methods for enhancing the performance and productivity of employees (Falola, Osibanjo & Ojo, 2014). Many empirical studies have been carried out to ensure a skillfully trained workforce and to enhance employees' performance. In fact, a large number of journals are dedicated to understanding this important human resource management function. Aligned with this focus, organizations in the United States spent \$164.2 billion on training and development in 2012 (Ahmad & Mat, 2017).

Konopaske and Matteson (2018) defined employee performance as employees' ability, opportunity and wish to perform a task. It is a very significant factor affecting profitability of a business (Babin & Boles, 2014). Inefficient task performance will lead to a tragedy to the organization as it is associated with lower productivity, lower profitability and impairment of overall organizational effectiveness (Jayaweera, 2015). Similarly, Punia and Kan (2018) postulated that in the modern world, training is a significant factor in today's business environment where jobs are difficult and varied. This is perhaps the main reason why companies of all forms and magnitude are seriously worried to make the best use of their Human Resource capital (Ahmad & Mat, 2017). To achieve this therefore, effective training should be given to employees not only before or during recruitment but also after



employment - on the job. The question of determining training effectiveness has increased importance over the last few decades. Even though there are many experts who pioneered works in the field of training effectiveness such as Kirkpatrick (1976) who introduced the well-known "four level evaluation model" which still remain relevant in the world of training.

This paper proposes to see into the value of co-worker effect of employees on the job. Since huge amount of money is spent on employees' training, it will be better for the management to determine whether training is effective and can lead to increased employee performance and influences co-workers in perfecting their jobs to achieve company goals. Thus, this study will summarize the previous works on training effectiveness by explaining and filling gaps unfilled by previous researches.

So, the importance of training effectiveness has motivated many scholars to become interested in the field. For example, Eades (2014) and Mustafa and Dauda (2019) argued that training effectiveness is very significant element of employee performance. The prospects for effective training is paramount about employer and perceived as a component of overall job satisfaction, job performance and to increase trainers' competence (Paul, 2016). The managers should devise a clear mission to provide great value and on-the-job training skills to all their staff so they could be satisfied and by implications motivate employees in need (Rafiq, 2015).

Training effectiveness is presently a topic of consideration and concern no matter what the type of organization or its activities (Yaqoot, Mohd & Mohd, 2017). Because it is evidently becoming an essential human investment that developed countries pay much attention to mentality, innovation and creativity and not only to equipment and technology (Yaqoot, Mohd & Mohd, 2017). Therefore it serves as a tool that allows organizations to continue to exist (Ishfaq, Zulfqar, Muhammad, Ahmad & Naveed, 2010). Co-workers are not only a vital part of the social environment at work (Vincent, Salwa, Caroline & Estelle, 2016). Employees in organizations have co-workers who are partners in social and task interactions (Lund, Samset, Skeie, Watson-Parris, Katich, Schwarz & Weinzierl, 2018). In the United States 90.2% of employees likely have co-workers: other employees situated in the same stratum of an organizational hierarchy and with whom one executes tasks and has routine interactions (Gallivan, Spitler & Koufaris, 2015) and who can both support and antagonize their colleagues. In organizations, they constitute an important source of support by allowing employees to interact with their co-workers (Parris, 2013). It is on this background that this study needs to investigate into the mediating effect of co-worker support on the relationship between training effectiveness and employee performance.

Nigeria at present faces a share of challenges concerning training effectiveness that can leads to increase in job efficiency and employee performance (Falola, Osibanjo & Ojo, 2014). The problems cannot be disconnected from incompetency from the part of both



lower, middle and top levels of management trainers due to ineffective training earlier received themselves (Jamal, 2014). In addition, workers are hired not based on merit coupled with poor training obtained today. The federal government and company managers though making efforts to a certain extent but still did not yield enough results perhaps owing to poor funding to enable staff acquire new skills and knowledge outside the company, bad mentorship, inadequate motivation, inadequate training facilities and poor coworker supports for managers who tried in-house support. More disturbing is the bad quality of trainers and graduates produced which cannot be compared with their foreign counterparts. To be more successful in a global competitive environment employees need to be committed to their organization by helping each other (Eades, 2014). They must be given opportunity to be willing, prepared and able to give greater effort to help their organization to succeed. The issue about effectiveness of training and co-worker support have not been treated well and have been faced up with an alarming neglect which counts much on consequent brain drain of competent employees, and several other professionals to other parts of the world.

Theoretically, a few attempts were made in investigating the possible factors responsible for effectiveness of training given to employees at all levels of management across the globe. The few previous studies were able to make useful findings of factors determining training effectiveness (Dessler, 2015; Eades, 2014). Therefore, it is in view of the limited empirical studies on training effectiveness and their immeasurable importance to employees performance and organizational effectiveness that studies on factors in influencing employees' performance in organizational setting becomes necessary and that efforts should be intensified in that direction. Hence, this study intend to investigate the mediating effect of co-worker support on the relationship between training effectiveness and employee performance in Gombe state university.

Literature Review

Concept of Employee Job Performance (EJP)

Employee job performance is defined as the outcome or contribution of employees to make them attain goals (Harrison 2016) while performance may be used to define what an organization has accomplished with respect to the process. Employee Job performance shows individual behaviors that contribute to achieve organizational objectives. Research proposed that high level of employee perception displays a high level of job performance. Employee job performance shows effectiveness and efficiency that make a payment to organizational goals. In the past employees were not able to make effective decisions because the system of the organization does not permit them to do this. According to Armstrong (2018) employee job performance is everything about the performance of employees in a firm or a company or an organization. It involves all aspects which directly or indirectly affect and relate to the work of the employees.



Employee job performance is normally looked at in terms of outcomes. However, it can also be looked at in terms of behavior (Armstrong 2018).

Employee job performance is the realization of a task assigned to an employee based on his/her personal qualifications within reasonable limits. It is a function of the capacity, opportunity and desire to perform a task towards the realization of the organization goal in line with pre-determined criteria and the personal qualifications of the employee (Başaran, Cibere & Kantarci, 2020; Russ & Erdoğan, 2017; Pugh et al., 2016; &lvancevich, Konopaske& Matteson, 2015).

Generally, job performance is considered as an assessment of the extent of an employee's accomplishments of the goals established by the organization and the acceptability of the employee's interpersonal behaviors relative to the norms of the organization (Arshad, Rasli, Arshad & Mohd, 2016). Moreover, high job performance of employees plays a crucial role in determining an organization's performance since highly performing individuals will be able to assist the organisation to achieve its strategic aims and sustaining the organisation's competitive advantage in general, while specifically, employees are willing to perform better to develop their career and enhance their skills as well as to influence management to retained them (Dessler, 2015). Hence the reason Human resource managers have high expectations concerning employee job performance by continuously monitoring employees' job performance through various performance management activities.

However, Employee's job performance is an indicator of organizational success, organizations today focus more on human resources whose efforts lead to better financial results, net sales and make organizations get better than before (Muhammad, 2017). Thus, the employee could be only satisfied when they feel themselves competent to perform their jobs, which is achieved through better training programs.

Furthermore, like in Hawthorne studies, and many other research work on productivity of worker highlighted the fact that employees who are perform well in their job will have higher job satisfaction, and thus supreme job retention than those who are not happy with their jobs. The term employee performance is typical to the Human Resource field and it is everything about the performance of employees in an organization. It involves all aspects which directly or indirectly affect and relate to the work of the employees. Hence, job performance of employees plays a crucial factor in determining an organisation performance. This is because highly performing individuals will be able to assist organisation to achieve its strategic aims thus sustaining the organisation competitive advantage.

However, the various definitions of employee performance stated above failed to segregate on the basis or nature of employee job such as academic and medical services or manufacturing sectors which could have helped in understanding the concept as exactly the way this study dwell to confirm. And whether or not employee job



performance could be achieved jointly with other colleagues on the job or single-handedly. Therefore, it is on this background that this study adopted the definition given by Armstrong (2018) that employee job performance is everything about the performance of employees in a firm or a company or an organization. Performance is a major multidimensional construct aimed to achieve results and has a strong link to strategic goals of an organization. Therefore, providing proper strategies for employee job performance is one of great challenges among the managers to improve organizational performance and efficiencies (Russ & Erdoğan, 2017).

Concept of Training Effectiveness (TE)

Training like any other organizational activity requires time, energy and money. It's an investment in employees' productivity and retention by providing for career progression and employees job satisfaction over the long time. This is because training is special skills, abilities and knowledge that are required to perform a specific job well (Baldwin and Ford (1998). As a systematic way to improve the performance of employees training provides a link between job requirements and the current job specification of the employees. Therefore the organisation needs to know whether their investment on training is being spent effectively or not. In this study, five dimensions of training effectiveness were considered which includes training environment, training motivation, training transfer, training facilities and emotional reactions.

Valle, Romero and Dolan (2010) estimated that "not more than 10% of training and development expenditure actually results in transfer to the job. Thus, Training is a systematic way to improve the performance of employees, and it provides a link between job requirements and the current job specification of the employees (Muhammad & Saeed, 2017). This is perhaps the main reason **training** must have specific goals of improving one's capability, capacity, productivity and performance. After the training, performance when measured indicates that training helps in proper utilization of resources; that further helps employees to achieve organizational as well as personal goals. Training also helps to increase job knowledge and skills and it expands the intellect on overall personality of the employee (Muhammad & Saeed, 2017). A survey indicated that "only 39% of the executives think that their organizations have made serious efforts to orient them into their organizations. Training and manpower development relevant to organizational goals should be provided to employees and recipients provided with an enabling environment to perform tasks (the enabling environment includes opportunity to put into practice the new skill and competence they acquired; commensurate monetary reward to, perhaps, compensate them for the experienced in acquiring the new skill and competence.

Elhajjar and Madina (2018) argued that training may continue beyond initial competence to maintain, upgrade and update skills throughout working life. Training could be given



through different methods such as on the coaching and mentoring, peer's cooperation and participation by the subordinates. This teamwork enable employees to actively participate on the job and produces better performance, hence improving organizational performance.

Co-worker Support (CS) as a Moderator

Study conducted by Gallivan, Spittler and Koufaris (2015) reported that co-worker support have a very significant on employee job performance and increases employee general wellbeing. Vincent, Carlson and Perrewe (2019) and Parris (2018) added that in organizational settings, co-workers may constitute an important basis of support particularly when job achievement allows workers to interact with their co-workers. In the views of Parris (2018) and in less colorful terms, individuals in every type of organization have co-workers who are partners in social and task interactions that influences the roles they play. The support provided by co-workers may take different forms in the workplace, including emotional and instrumental support. Only when employees cannot deal sufficiently with a problem, they obtain support.

Furthermore, Kim, Hur, Moon and Jun. (2017) conducted a research on the moderating effects of supervisor, coworker, and organizational support on the link between emotional labor and job performance in South Korea. The study was designed to examine the moderating roles of perceived supervisor, coworker, and organizational support in the relationship between emotional labor and job performance in the airline service context. A sample of flight attendants working for one major airline company in South Korea participated in this study. The flight attendants' official job performance data were provided by the airline company. For data analyses, a series of hierarchical moderated regression analyses were employed. The results showed differential moderation effects of the three sources of support at work. Specifically, the positive relationship between deep acting and job performance was strengthened by perceived supervisor and coworker support. The negative relationship between surface acting and job performance was exacerbated by perceived supervisor support, indicating the reverse buffering effect. Perceived organizational support showed only main effects on employee performance with no moderation effects. However, this study did not show the degree of the influence of the co-worker support expected by the study under investigation as it used three moderating variables- moderating roles of perceived supervisor, coworker, and organizational support. Thus the individual influence of co-worker as a moderator may be difficult to analyse as is singly done as in the current study.

According to Zaitouni and Ouakouak (2018) who conducted a research on the impacts of leadership support and coworker support on employee creative behavior and performance seek a deeper understanding of how leadership support and coworker support influence employee creativity. A quantitative study was conducted among 299



employees working at eight organizations in a non-western country. The results of the research revealed that both leadership support and coworker support exert positive influences on employee creativity that increase their performance, moderated by several additional variables. Specifically, employee engagement and tenure both strengthen the relationship of leadership support with employee creativity. Furthermore, individual creativity has a positive impact on job performance. To better understand the nature of these impacts, the authors introduced two moderators such as employee engagement and tenure. However, the use of two different moderators concurrently made their study difficult to comprehend and apply. This gap will therefore be addressed by the current study by involving only one moderator at a time.

Additionally, Singh, Selvarajan and Solansky (2019) studied coworker influence on employee performance: a conservation of resources perspective in America. The study drawn on the conservation of resources theory was to test a model of the influence of coworker-resources (coworker-support and coworker-exchange) on employee performance with psychological flourishing as mediator and employee race as moderator. Using a sample of 321 employees from a mid-western US organization, the authors conducted a field study and used regression analysis to test the hypotheses. The authors ran the basic mediation as well as moderated-mediation models with non-parametric bootstrapping procedures. Findings indicated that coworker-support and coworker-exchange were positively associated with psychological flourishing, which, in turn, was positively associated with employee performance. The authors found support for psychological flourishing as a mediator of coworker influence–employee performance relationships. The authors also found evidence supporting race as a boundary condition that moderated coworker influence–performance relationships, which were stronger for minorities as opposed to whites. It practically implied that to ensure employee well-being and superior employee performance, especially for racial minorities, managers must create work environments replete with coworker-support and healthy coworker-exchange. Since study undertakes a simultaneous examination of two different forms of coworker influences on employee performance and it clarifies the role of underlying psychological mechanisms it will pave the way for coworker influence on performance and that the findings will provide clarity regarding the employee–coworker relationship research and could be used in comparison with the current study. In addition, they establish race as an important boundary condition when considering coworker influences and employee performance. However, the use of the basic mediation as well as moderated-mediation models together with non-parametric bootstrapping procedures made their study overloaded and cumbersome and could be difficult to be interpreted to the users. Hence, this gap will be strongly addressed by the current study as it used a single moderator – coworker support.



Theoretical Framework

This study is motivated by several postulations. Today, Scholars are mainly involved in unravelling burning problems relating to training effectiveness and employee performance in organizations. This led to the proposition of many theories and models especially those theories related to human behaviours such as theory of reinforcement which postulated that the training and development programs should be aligned with the organizational objectives and a positive outcome should be expected with such training and development programs. Behavioral theories of learning and motivation focus on the effect that the consequences of past behavior have on future behavior. Skinner, B. F. (1957) was a key contributor to the development of modern ideas about reinforcement theory. It is further argued that the internal needs and drives of individuals can be ignored because people learn to exhibit certain behaviors based on what happens to them as a result of their behavior. This school of thought has been termed the behaviorist, or radical behaviorist, school (Chae & Park, 2020).

The theory presented by Robert Gagne (1962) emphasized on learning of intellectual skills. These are such skills which are found rare among the persons. He suggested by different learning types in his theory and each learning type contains some external and internal conditions. The five categories of learning which Gagne defined in his theory include intellectual skills, verbal information, attitudes, cognitive strategies and motor skills. It suggested that there are several different levels of learning in which each different level of learning requires different technique of instruction. He identified five major categories of learning: verbal information, intellectual skills, cognitive strategies, motor skills and attitudes.

Social Learning Theory, theorized by Albert Bandura, posits that people learn from one another, via observation, imitation, and modeling. The theory has often presents a new view of learning i.e. social. Bandura's theory explains human behavior in terms of continuous reciprocal interaction between cognitive, behavioral, and environmental influences (Bandura, 1986) It further suggests that an effective strategy to achieve these objectives includes providing opportunities to observe the organization rewarding desired workplace behaviors and punishing inappropriate behaviors. Therefore, organizations need employee behavior to conform to workplace performance standards (Bandura, 2004).

Social learning theory will be used in this study as it highlights social and human behaviour aspects in this study. The theory explains all the variables and their relationships as it is. For example, the issue related to training environment, training motivation, behaviour changes (emotional level) of employee etc. were all addressed including what the other theories preached as rightly reported above.

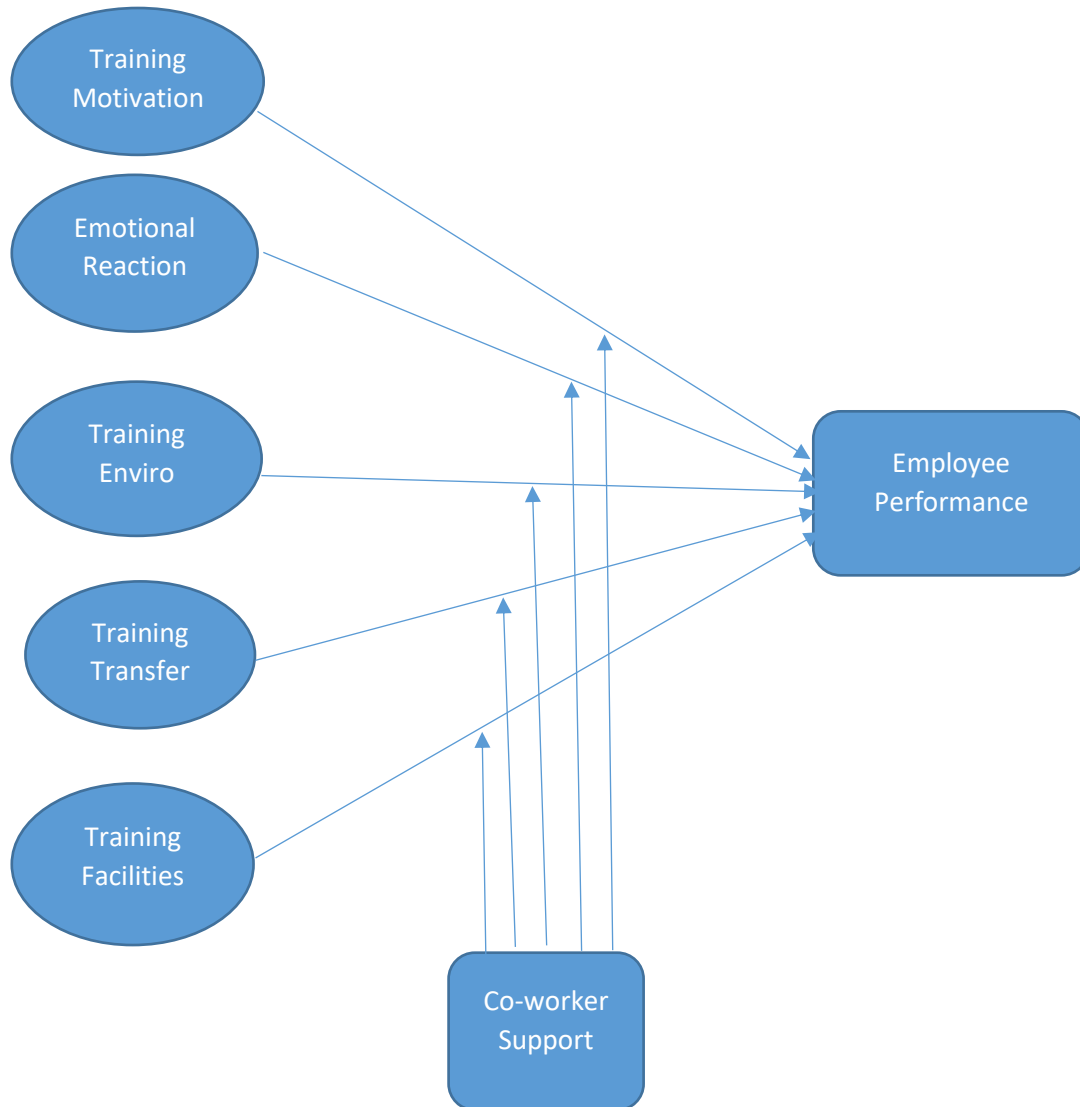


Fig. 1. Research Framework.

Source: Researcher, 2021

The research framework depicted in Figure 1 showed the proposed relationships that exist among the constructs employed in the study. The independent constructs of the study are training effectiveness which has five dimensions, namely: training environment, training motivation, training transfer, training facilities and emotional reactions and while the dependent constructs in the study are EJP. Further, CS is used as a moderating construct in the relationship between TE and EJP.

Methodology

The study is a pilot study. It employed a descriptive cross-sectional survey to assess the moderating effect of TE on EJP. This study examined TE, EJP and CS. The research



instrument used for data collection is the questionnaire. The questionnaire was adapted in such a way as to measure the constructs of the research. A structured questionnaire was used, using a five-point Likert scale. The sample size for the pilot study consisted of 100 lecturers from Gombe State University. To establish the content validity of the instruments, the researcher clearly defined the conceptual framework. Some experts in the field of business administration validated the questionnaire. The validators of the questionnaire included a well-known professors and senior lecturers in the field of University of Maiduguri, Bayero University, Kano-Nigeria and associate professor from Gombe State University, Gombe state-Nigeria. Both the professors and the associate Professor raised their observations in which errors and deviations were checkmated and corrected. The improved version and the professional comments of the respective experts and the inputs of the supervisor were all incorporated into the final draft of the instrument. Thus, by this the instrument is hereby reliable, strong enough and measured what it intended to measure. However, all only 60 questionnaires were duly completed and returned.

PLS-SEM Reliability and Validity

Internal Consistency Reliability

Traditionally, “Cronbach’s alpha” is used to measure internal consistency reliability in social science research but it tends to provide a conservative measurement in PLS-SEM. Prior literature has suggested the use of “Composite Reliability” as a replacement (Bagozzi & Yi, 1988; Hair Sarstedt, Ringle & Mena, 2012). Composite reliability should be 0.70 or higher. If it is an exploratory research, 0.6 or higher is acceptable (Bagozzi & Yi, 1988). From Table 2, such values are shown to be larger than 0.70, so high levels of internal consistency reliability have been demonstrated among all the seven latent variables with the exception of employee performance.

Table 1 Internal Consistency Reliability

s/n	Variables	Cronbach Alpha	No of Items
1	Training Motivation	0.752	6
2	Training Environment	0.816	6
3	Training Facilities	0.725	5
4	Training Transfer	0.8	4
5	Employee Emotion	0.729	7
6	Co-worker Support	0.800	6
7	Employee Job Performance	0.766	7

Source: SPSS Version 23 output

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shown to be larger than 0.70, so high levels of internal consistency reliability have been demonstrated among all the seven latent variables. Therefore, internal consistency reliability is achieved based on the pilot data obtained.

Convergent Validity

To check convergent validity, each latent variable's Average Variance Extracted (AVE) is evaluated and it should be 0.50 or higher (Bagozzi & Yi, 1988). From Table 2, it was found that only two constructs had the AVE values greater than the acceptable threshold of 0.50, so convergent validity need to be checked. The reason is perhaps that this results is based only on the pilot study at hand.

Table 2. Construct Reliability and Validity

Constructs	CronBarch's Alpha	Rho_A	Composite Reliability	Average Variance Extracted
C Support	0.529	0.698	0.703	0.331
E Emotion	0.658	0.751	0.766	0.363
E Performance	0.496	0.739	0.657	0.301
T Environment	0.812	0.824	0.865	0.521
T Facilities	0.724	0.739	0.820	0.480
T Motivation	0.754	0.768	0.828	0.449
T Transfer	0.739	0.744	0.837	0.563

Discriminant Validity

Fornell and Larcker (1981) suggested that the square root of AVE in each latent variable can be used to establish discriminant validity. Fornell and Larcker (1981) advocated that the "square root" of AVE of each latent variable should be greater than the correlations among the latent variables. To do this, a table is created in which the square root of AVE is manually calculated and written in bold on the diagonal of the table. The correlations between the latent variables are copied from the "Latent Variable Correlation" section of the default report and are placed in the lower left triangle of the table. In table 3, the discriminant validity results under E Emotion, E Performance, T. Facilities, T Motivation and T Transfer (Shown in diagonal) have not been established since the correlations between affected variables are greater than the square root of AVE. However, only the discriminant validity under T Environment has been established because the correlations under the T Environment are less than the square root of AVE. The reason is because this is a pilot study sample used which may be well established after the full sample is employed.

Table 3: Discriminant Validity

Constructs	CS	EE	EP	TE	TF	TM	TT
CS	0.576						
EE	0.739	0.602					
EP	0.677	0.842	0.548				



TE	0.651	0.639	0.627	0.722			
TF	0.566	0.611	0.638	0.770	0.693		
TM	0.639	0.738	0.690	0.658	0.646	0.670	
TT	0.851	0.546	0.549	0.574	0.486	0.530	0.750

Test of Normality

If the research data is not normally distributed, then it may affect the reliability of the result. Therefore, testing the present of normality is critical in multivariate analysis (Awang, 2012). For this pilot study, skewness and kurtosis is used to check whether or not the data is normally distributed. A negative skew shows that the distribution is skewed to the right, while a positive skew shows a shift to the left. However, kurtosis provides information about the height of the distribution. A positive kurtosis value shows a peaked distribution, while a negative kurtosis value shows a flatter distribution. With regard to Tabachnick et al. (2007), a normal range for skewness – kurtosis value should not be ± 2.58 . In line with the assertion, all the items dataset were found to be normally distributed. The skewness and kurtosis value in each case is within the range of ± 2.58 . Table below show the result of the analysis for the value of skewness and kurtosis for each variable. This confirm that there was no problem of non – normality of the data.

Table 4. Descriptive Statistics

Variables	N	Mean	Std. Deviation
TM	100	4.29	.530
TE	100	4.24	.576
TF	100	4.40	.510
TT	100	4.35	.584
EE	100	4.31	.485
CS	100	4.32	.533
EP	100	4.32	.506
Valid N (listwise)	100		

Source: SPSS Version 23 output .The results in table 2. indicated that the mean scores of the latent variables range between 4.29 and 4. 40 on a 5-point Likert scale, while the standard deviation ranges between .506 and 0.584. The standard deviation is small relative to their respective means implying that the statistical mean provides a good fit of the observed data Gupta et al. (2009). Therefore, confirming that the pilot study sample is an accurate reflection of the population.

Factor Analysis

Factor analysis attempts to identify underlying variables, or factors that explain the pattern of correlations within at set of observed variables. Factor analysis is also used in the data reduction to identify a small number of factors that explain most of the variance that is observed in a much larger number of variables. The purposed of data reduction is to removed redundant (or highly correlated) variables from the data. In this analysis, principal component analysis was used, which is a method of factor analysis (more reliable and conceptually less complex) principal component analysis is concern with establishing



what kind of linear component that exist in the data and how variable might contribute to that component (Gupta et al., 2009). For simplicity, principal component analysis is used to be synonymous to factor analysis.

Inspection of the correlation matrix revealed the presence of many coefficients of .5 and above. The Kaiser Meyer-Olkin value was .691, exceeding the recommended value of .6 Kaiser (1974) and Bartlett's Test of Sphericity (Bartlett, 1954) reached statistical significance as shown in table 3

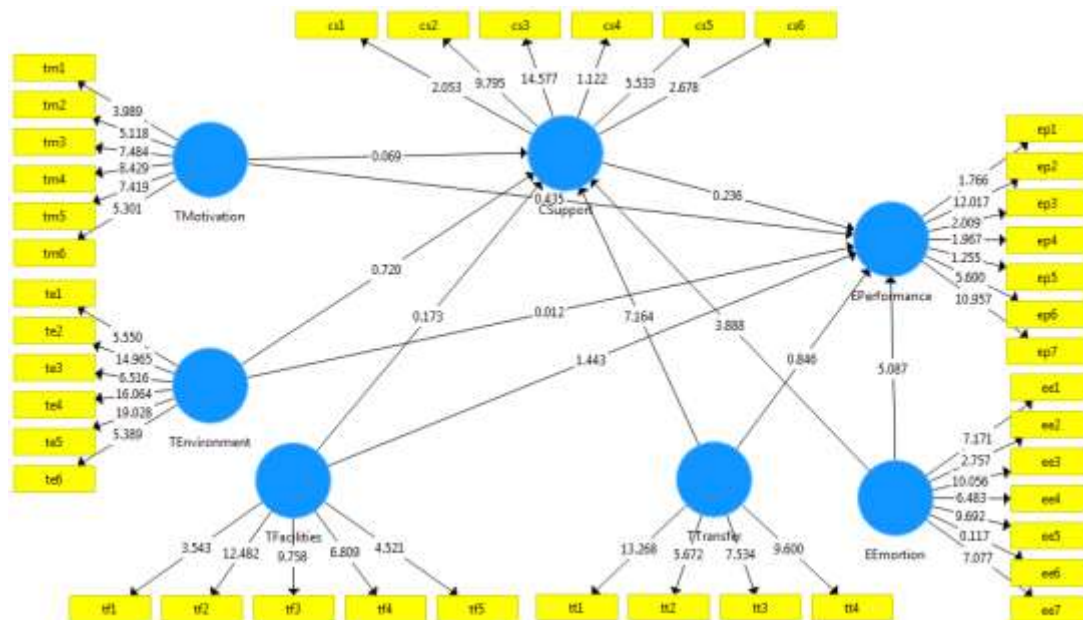
Table 3 KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.691
Bartlett's Test of Sphericity	Approx. Chi-Square	1867.728
	df	435
	Sig.	.000

Source: SPSS Version 23 output

Exploratory factor analysis revealed the presence of seven components with eigenvalues 1 to aid in the interpretation of these seven components, promax rotation was performed. The rotated solution revealed the presence of simple structure with both components showing a number of strong loadings and all variables loading substantially.

PLS-SEM Result of the Pilot Test



Conclusion

The pilot study conducted in this study was to establish the reliability and validity of the instruments, which was used in conducting the study. The paper used the sample of seventy (60) respondents, while a valid response of 100 per cent was obtained. The study



instrument scrutinized by some expert, and the face and content validity of the instruments were found to be appropriate for this study. The result of the reliability test also confirmed that most the constructs had attained average and high-reliability coefficient as such they are suitable to be used in the full-scale study.

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