Engagement_Index

by I Nyoman Sutapa

Employee Engagement Index: A Case Study of Academic Support Staff of Higher Education

*I Nyoman Sutapa[1], Isanti Anna Ismu Edi[1], Soeharijadi Soeharijadi [1]

[1]*Petra Christian University, Indonesia*
**Corresponding author. Email: mantapa@petra.ac.id*

ABSTRACT

This study focuses on developing an Employee Engagement Index for academic support staff due to its role as a strategic driver to improve performance. It was measured using 31 indicators developed from three dimensions of engagement, including vigour, dedication, and absorption, tested and applied on education support staff at a higher education institution in Surabaya certified by the Quality Management System ISO 9001:2015. The measurement index produced was capable of functioning as a monitoring and evaluation tool for higher education institutions towards developing and maintaining competitive advantage.

Keywords: Employee Engagement Index, Structural Equation Model, Academic Support Staff, Higher Education.

1. INTRODUCTION

Academic support or non-academic staff working in higher education institutions include people in different aspects such as those in leadership and managerial roles, administrative roles, supporting student learning processes such as counsellors, supporting the teaching processes, librarians, laboratory employees, programmers, and those employed to maintain infrastructures [1]. They are simply university employees that are not academics or teaching staff. Moreover, the terms "support employee" and "administrative staff" are used in the US to represent those employed to be directly involved in the university's administrative functions required to support academic activities. It is, however, essential to note that they are different from professional employees in leadership and managerial positions of these institutions. It was discovered from [2] that professional and support employees contribute significantly to increasing student engagement in higher education [3].

A previous study showed that the management of academic support staff significantly impacted higher education performance by increasing their engagement and appraising their performance [4]. Meanwhile, employee engagement is a condition, attitude, or positive behaviour exhibited by an employee towards work and organisation. It is characterised by a feeling of enthusiasm or vigour, dedication, and preoccupation or absorption to achieve organisational goals and success [5, 6]. Moreover, an employee with a high level of engagement usually has more understanding and concern for an organisation's operational environment, is very enthusiastic about work, can work well with colleagues, always speaks positively about the organisation, and

performs more than the organisation's expectations [7]. This result means it is essential for organisations to develop and maintain employee engagement by continuously improving the two-way relationship between them and their employees [8]. Furthermore, another study defined employee engagement as a positive cognitive, emotional, and behavioural condition directed towards achieving organisational results [9]. It was also explained as the willingness to sacrifice more energy and time for work and be more proactive in achieving goals [10].

Developing and maintaining employee engagement for academic support staff to improve institutional performance requires effective performance management [11, 12]. It means employee engagement measurement is one of the essential components of effective performance management [13]. Several studies have been conducted to measure this concept, but they are only limited to developing different dimensions and indicators [14, 15, 16, and 17], with the final engagement score for each employee is determined based on the indicators' average. This research was conducted developing the measurement of constructed engagement focusing on the weight of each indicator in each dimension. It is important to note that the weight was determined based on the strength of the relationship between the indicator and the measured construct.

2. LITERATURE REVIEW

The term employee engagement was first introduced by Khan [18] as the self-utilisation of members of an organisation in their work roles which is expressed physically, cognitively, and emotionally. It led to the classification of employee engagement into the physical,

cognitive, and emotional aspects [18]. Physical engagement relates to the extent to which employees expend their efforts, both physical and mental, in performing their duties. Meanwhile, cognitive engagement requires the employees to know the vision and strategies of the employers and the performance required of them in achieving the vision. Emotional engagement is based on the emotional relationship between the employees and their employer. It means an organisation needs to maintain a positive relationship by creating a sense of belonging for the employees and encouraging them to trust and buy into its values and mission.

Employees with high engagement are usually characterised by the 3S, which means Say, Stay, and Strive [19]. The "Say" aspect involves consistently speaking positively about the organisation to co-workers, potential employees, and customers. "Stay" is the desire and pride to be a member or part of the organisation instead of looking for opportunities in others. "Strive" involves giving more time, energy, and initiative to contribute optimally to the organisation's success. Furthermore, there are three levels of employee engagement: engaged, not engaged, and actively disengaged [20]. Engaged employees are builders who consistently show a high level of performance, are willing to use their talents and strengths in their daily work activities, always work with passion, and usually develop innovations to grow. Those at the "not engaged" level tend to focus on the task rather than achieve the goals, wait for orders, and feel their contributions are ignored. Meanwhile, actively disengaged employees are cave dwellers that consistently show resistance in all aspects. They only see the negative side of every effort and activity and usually underplay the activities of the engaged workers.

There are three dimensions of employee engagement: vigour, dedication, and absorption [14, 15, 16, and 17]. Vigour is characterised by high energy and mental resilience at work, willingness to put in the effort required at work, and persistence in the face of adversity. Individuals with high vigour usually have a vital energy, stamina, and enthusiasm during work, while those with low vigour have low energy, enthusiasm, and stamina. Dedication refers to meaning, enthusiasm, inspiration, pride, and challenge. Highly dedicated individuals strongly identify with work because of their meaningful, inspiring, and challenging experiences and vice versa for those with low dedication. Moreover, absorption or preoccupation is characterised by total concentration, interest in work, and difficulty in disengaging from work. Individuals with high absorption are typically focused, concentrated on work, and find it difficult to leave their work, and vice versa for those with low absorption.

An engagement scale called the Utrecht Work Engagement Scale (UWES) was developed to determine the level of engagement [14, 15, 16, 17, and 21]. It is in two versions: an extended version consisting of 17 items and a short version with nine items. It is important to note that each measurement version has high validity and reliability [21, 22], but none were used in this study. An employee engagement measurement tool developed by [23] and used in several previous studies based on the theoretical construct described by [14, 15, 16, 17, 21, and 24] was used in this study. The employee engagement construct was divided into three dimensions with several sub-dimensions containing 32 indicators, as presented in Table 1.

3. RESEARCH METHODOLOGY

The employee engagement index was developed using a private university in Surabaya, Indonesia, adopting the ISO 9001 Quality Management System as the case study. It involved the distribution of a questionnaire to all 375 employees to assess their level of engagement, and 263 people answered thoroughly, indicating a 70.13% response rate. Moreover, the research instrument, which is the employee engagement measurement scale, was developed based on the method used in several previous studies [14, 15, 16, 17, 21, and 24]. The validity, reliability, and loading factor of each measurement and the path coefficient of each dimension and sub-dimension of engagement, were tested through structural equation modelling using SmartPLS™ 3.0 [26]. Furthermore, the employee engagement measurement index was formulated mathematically. The index for each employee was calculated by multiplying the score of each indicator with its loading factor. It is multiplied by the regression coefficient of the sub-dimensions. Finally, it is multiplied by its dimensions after the loading factors and regression coefficients have been normalised. Each department index was determined by finding the average employee engagement index of all employees in the department. The same method was used to index all the academic supporting employees. Then, it was calculated based on the average of all the employees.

4. RESULTS AND DISCUSSION

The loading factors of all the indicators and measurement dimensions were more than 0.60, as presented in Table 2, which means they are all valid based on the convergent validity test. They were all also observed to be reliable, as indicated by their Cronbach's Alpha values which were more than 0.80. The distribution of male employees is slightly more than the female with 54.4% and 45.6% respectively. It was also discovered that 73.0% were staff, 15.2% were Field Officers, 8.0% were Heads of Division, and only 3.8%

were Heads of Unit (Table 3). Table 4 and Figure 1 then show each indicator's factor loading or weight and the path coefficient of each sub-dimension and dimension calculated using SmartPLS™ 3.0 [26] based on the responses provided in the questionnaire by all the employees. The factor loading was found to be greater than 0.6, and this means each indicator can be used to represent or firmly explain each sub-dimension of the engagement construct. Moreover, the path coefficients of

each dimension of the employee engagement construct were all discovered to be significantly positive with a value above 0.8, and this also shows that each dimension was able to explain the construct very strongly. The path coefficients of each sub-dimension were also positively significant, with values ranging between 0.5 and 0.9, and this means each sub-dimension could explain its dimensions firmly to very strongly.

Table 1 Indicators and Dimensions of Employee Engagement Construct

Employee Engagement Construct		Indicators
Dimension	Sub-dimension	
Vigour: High levels of energy and resilience at work, willingness to work hard, persistence when faced with difficulties	Have a high enthusiasm for work (Vigor1)	Enthusiasm when starting/going to work (Vigor11)
		After tired of working, it is easy to gather energy again (Vigor12)
		When given a task, eager to do it (Vigor13)
		Not quickly tired in completing work (Vigor14)
		Always try to maintain enthusiasm in completing work (Vigor15)
	When working, try as hard as you can (Vigor2)	Try your best to get the job done (Vigor21)
		Seriously solve problems that occur at work (Vigor22)
		Always try to maintain the quality of work (Vigor23)
	Stay on task even under challenging circumstances (Vigor3)	Do not complain about work despite having difficulties (Vigor31)
		Always try various alternatives when facing difficulties at work (Vigor32)
		Choose to persist, so work is completed even though it is difficult (Vigor33)
		Do not leave work to others even if it is difficult (Vigor34)
Dedication: Participation, involvement in work, and experiencing a sense of meaning, enthusiasm, inspiration, challenge	Responsibility (Dedicat1)	Feeling uncomfortable when leaving the task/responsibility (Dedi11)
		When given a task, take full responsibility for completing it (Dedi12)
	Proud of the job done (Dedicat2)	Proud of the work/tasks assigned (Dedi21)
		Take pride in achieving performance that can inspire others (Dedi22)
		The work done is appreciated by others (Dedi23)
	Feel challenged with things on task (Dedicat3)	Each task assigned provides a challenge to complete (Dedi31)
		The assigned job is a challenge to be conquered (Dedi32)
		There is always something new in the job that makes a challenge (Dedi33)
	Useful for others (Dedicat4)	Through this work, it feels like a good influence on others (Dedi41)
		His work can provide benefits to others (Dedi42)
Absorption: Concentrating fully, being happy, enjoying, and finding it difficult to get away from work.	Find it difficult to get away from work (Absorp1)	Willing to spend much time to get the job done (Absor11)
		It is hard to stop when doing work (Absor12)
		It is hard not to think about the work to be done (Absor13)
	Enjoys struggling with tasks (Absorp2)	When working, time flies so fast (Absor21)
		Often do not realise work time is almost over when you are at work (Absor22)
		Get carried away when you are doing work (Absor23)
	Concentrate on doing the task (Absorp3)	Do not let personal matters affect your mind at work (Absor31)
		Do not think about anything else outside of work when working (Absor32)
		Minor problems at work do not interfere with work concentration (Absor33)

Table 2 Validity and Reliability Instrument

Reliability	Validity of each Indicator				
Vigour Cronbach's Alpha=0,87	Vigor11=0.74	Vigor12=0.72	Vigor13=0.83	Vigor14=0.71	Vigor15=0.76
	Vigor21=0.90	Vigor22=0.78	Vigor23=0.78		
	Vigor31=0.60	Vigor32=0.83	Vigor33=0.83	Vigor3=0.71	
Dedication Cronbach's Alpha=0,88	Dedication11=0.78	Dedication 12=0.82			
	Dedication 21=0.83	Dedication 22=0.81	Dedication 23=0.80		
	Dedication 31=0.90	Dedication 32=0.91	Dedication 33=0.86		
	Dedication 41=0.95	Dedication 42=0.95			
Absorption Cronbach's Alpha=0,83	Absorption11=0.75	Absorption 12=0.80	Absorption 13=0.65	Absorption 14=0.76	
	Absorption 21=0.85	Absorption 22=0.89	Absorption 23=0.72		
	Absorption 31=0.86	Absorption 32=0.84	Absorption 33=0.85		

Table 3 Respondents' description

Gender (%)	Men (54.4)	Women (45.6)			
Position (%)	Head of unit (3.8)	Head of division (8.0)	Staff (73.0)	Field officer (15.2)	
Function (%)	Academic admin. (15.2)	Office admin. (41.8)	Structural (5.7)	Librarian (4.6)	Technician (8.0)
	Programmer (3.0)	Paramedic (2.3)	Counsellor (2.7)	Security (8.4)	Laboratory (8.4)

Table 4. Path coefficient and relationship significance from construct to dimension, from dimension to sub-dimension

| Relationship among construct and dimension	Path coefficient	p-Value	Relationship among dimension and sub-dimension	Path Coefficient	p-Value
Employee Engagement → Vigor	0.892	0.00	Vigor → Sub-dimVigor1	0.846	0.00
			Vigor → Vigor2	0.847	0.00
			Vigor → Vigor3	0.825	0.00
Employee Engagement → Dedication	0.888	0.00	Dedication → Dedication1	0.540	0.02
			Dedication → Dedication2	0.871	0.00
			Dedication → Dedication3	0.901	0.00
			Dedication → Dedication4	0.820	0.00
Employee Engagement → Absorption	0.875	0.00	Absorption → Absorption1	0.884	0.00
			Absorption → Absorption2	0.844	0.00
			Absorption → Absorption3	0.641	0.01
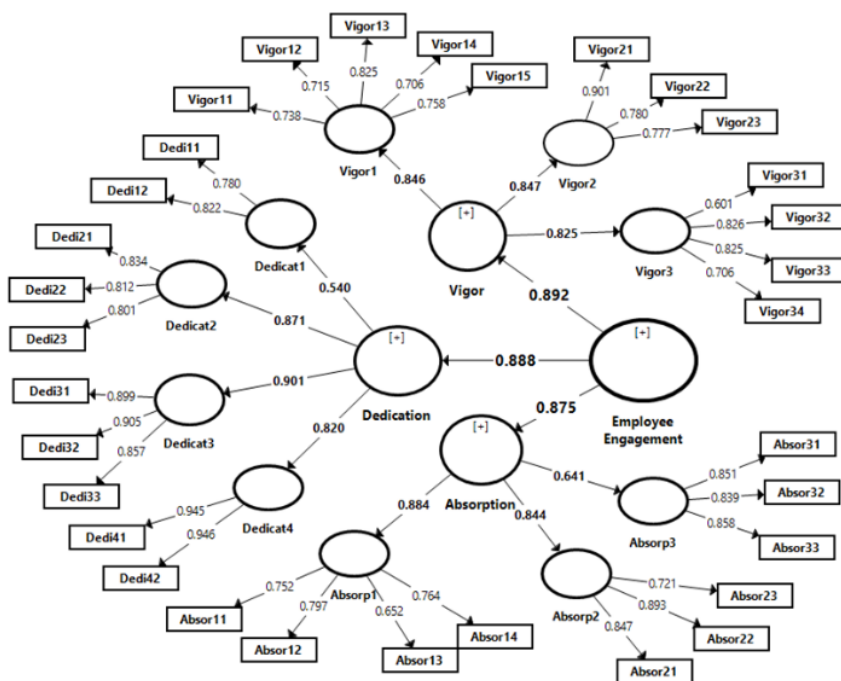
Figure 1 Factor loading of each indicator, path coefficient of each sub-dimension and dimensions

5. EMPLOYEE ENGAGEMENT INDEX

The employee engagement index model was developed based on the employee engagement construct's three dimensions: vigour, dedication, and absorption. The vigour dimension has three sub-dimensions, dedication has four, and absorption has three, as indicated in Table 1. Meanwhile, each sub-dimension was measured by several indicators, which were found to have a total number of 32. It is important to note that each indicator, sub-dimension, and dimension have

unequal weight in reflecting the engagement construct. Therefore, this research used the loading factor as the weight for the indicator. Meanwhile, the path coefficient from dimension to sub-dimension and from engagement construct to dimension was used for the sub-dimension and dimension, respectively.

It was necessary to normalise each weight, including the loading factor of each indicator and path coefficients of each relationship between the engagement construct and each dimension. Moreover, between each dimension and sub-dimension before the measurement index was formulated. It involved dividing each loading factor and path coefficient by the sum of all loading factors and their path coefficients, respectively, as indicated in Equations 1a, 1b, and 1c. The aim was to maintain the final score of the engagement index on an interval of 1-5.

$$WD_k = \frac{PCD_k}{\sum_m PCD_m}, \quad \forall k \tag{1a}$$

$$WS_{jk} = \frac{PCS_{jk}}{\sum_n PCS_{nk}}, \quad \forall j, k \tag{1b}$$

$$WI_{ijk} = \frac{LFI_{ijk}}{\sum_h LFI_{hjk}}, \quad \forall i, j, k \tag{1c}$$

WD_k represents the normalised weight of *the* k^{th} dimension of engagement construct, WS_{jk} represents the normalised weight of jth sub-dimension from k^{th} dimension, and WI_{ijk} represents the normalised weight of ith indicator from j^{th} sub-dimension of kth dimension. Moreover, the sub-index k is the dimensions of vigour, dedication, and absorption, sub-index j represents the sub-dimension from vigor1 to absorption3, while sub-index i represents indicator vigor11 to absorption3.3. Meanwhile, *LFI, PCS*, and *PCD* represent the loading factor of each indicator, the path coefficient of each relationship between dimensions and sub-dimensions, and the path coefficient between constructs and dimensions, respectively.

The employee engagement index of each Academic Support Staff was calculated in three stages. The first stage involved calculating the engagement in each sub-dimension by finding the sum of the respondent's response score for each indicator multiplied by the normalised weight of its factor loading as indicated in Equation 2. The second stage was calculating the engagement in each dimension by finding the sum of the product of the first stage result and each weighted path coefficient normalised from each dimension to the sub-dimension as indicated in Equation 3. The third

stage calculates the final engagement by determining the sum of the products of the second stage result and each weighted normalised path coefficient from the construct to each dimension as indicated in Equation 4.

$$ES_{ejk} = \sum_i WI_{ijk} SE_{eijk}, \quad \forall e, j, k \tag{2}$$

$$ED_{ek} = \sum_j WS_{jk} ES_{ejk}, \quad \forall e, k \tag{3}$$

$$EE_e = \sum_k WD_k ED_{ek}, \quad \forall e \tag{4}$$

Where ES_{ejk} represents the engagement score of e-employee for each jth sub-dimension in k^{th} dimension, SE_{eijk} is the score of e-employee's response regarding the ith indicator, j^{th} sub-dimension, and k^{th} dimension, ED_{ek} is the engagement score of e-employee in k^{th} dimension, and EE_e is the employee engagement index of e-employee.

The employee engagement index for each function, EE_f, was also expressed as the average EE_e in the f-function concerning n_f as indicated in Equation 5. Meanwhile, the employee engagement index for all employee EE was determined using the average EE_e for all n employees as presented in Equation 6.

$$EE_f = \frac{\sum_e EE_e}{n_f}, \quad \forall d \tag{5}$$

$$EE = \frac{\sum_e EE_e}{n} \tag{6}$$

Finally, the engagement group for each employee was determined based on Gallup [20]. An employee is believed to be engaged when $EE_e > 4.5$, not engaged when $3.33 \leq EE_e \leq 4.33$, and actively disengaged when $EE_e < 3.33$.

The employee engagement index of the 263 academic support employees in Surabaya, Indonesia, was determined using Equations 1-6 based on their responses to the questionnaire. Figures 2-4 show that the average index was 4.15, categorised as not engaged. It was also discovered based on gender that the index for the male employee is slightly higher than the female but still within the same category. Moreover, the head of the unit index was much higher than those in other units, like the head of the division, employees, and field officers indicated in Figure 2. Based on function, the EE_f of some employees such as the structural or managerial staff, programmers, librarians, academic, administrative staff, and laboratory technicians were observed to be partly higher than the value for the engagement for all employees as presented in Figure 3. It is observed to be due to these individuals' critical role in implementing the online teaching and learning process during the pandemic. Meanwhile, some others, such as paramedics, counsellors, securities, and

technicians, had lower EE_f compared to the employee engagement for all the employees.

The findings also showed that the most dominant group is "not engaged" with 58%, followed by "engaged" with 38%, and "actively disengaged" with 4%, as indicated in Figure 4. It means there is a need for the institution to address the issue of the employees considered not to be engaged in order to be more competitive in the country. There is a need to focus more on actively disengaged due to hindering the organisation's progress.

The results for the employee engagement index based on the positions, functions, and work units of the employees can be used by higher education institutions to develop an engagement map. This map is expected to prioritise employees with great potential for development and determine those with the tendency to hinder the institution's progress. It can also be used to predict the performance of higher education institutions in the future.

It is, however, essential to note that this Employee Engagement Index has some limitations. For example, the indicators used are relatively general and need to be aligned with the institutional strategy theme to achieve the desired vision and mission. Moreover, the appraisal must be conducted by a minimum of three parties, including the superiors, co-workers, and the affected employees.
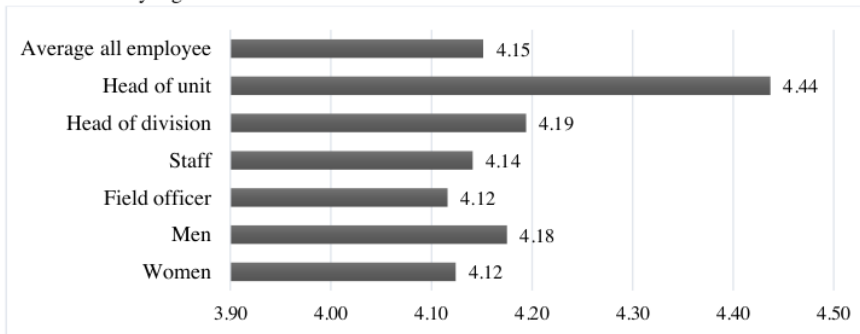
Figure 2 Academic Support Staff engagement index based on position and gender
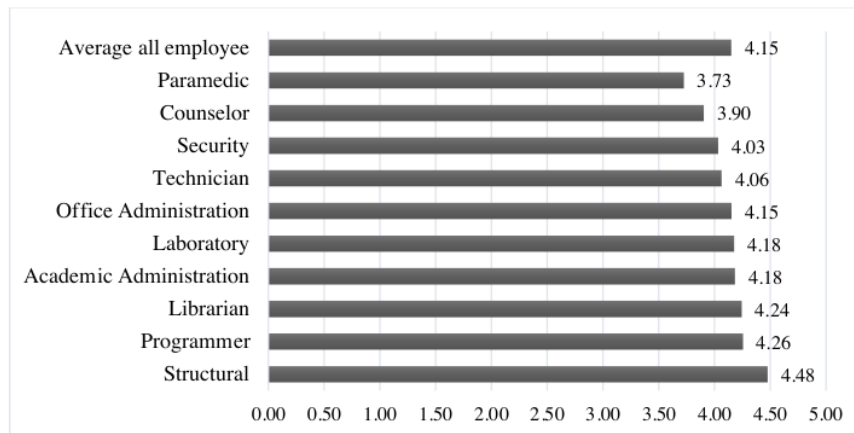
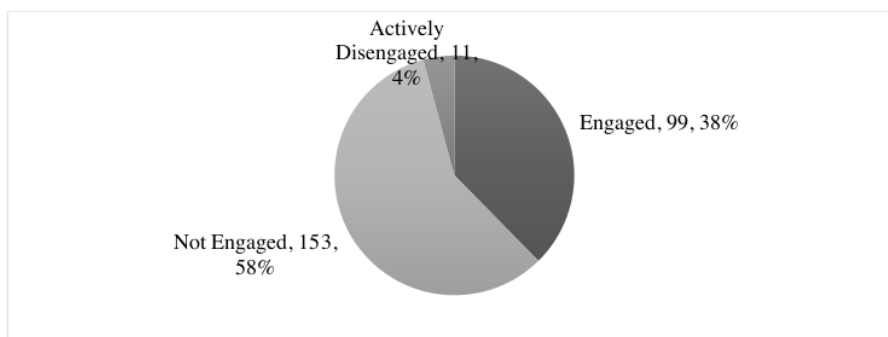**Figure 3** Academic Support Staff engagement index based on function

Figure 4 Academic Support Staff engagement index in three categories

6. CONCLUDING REMARKS

The engagement of academic support or non-academic employees in a higher education institution is significant to success in the stakeholders' teaching, research, and community service processes. An employee engagement index was developed in this study to measure, monitor, and evaluate the employee engagement of academic support employees. It is also projected to be used as an engagement map to manage the human capital performance in higher education institutions strategically.

AUTHORS' CONTRIBUTIONS

The first author developed the research model, questionnaire, data analysis, and report writing, while the second and third authors only contributed to the questionnaire design, data collection, data processing, and data analysis.

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