

Effectiveness of Employee Engagement and Organisational Commitment at a Chemicals Manufacturing Company

Precious Zinhle MKHIZE

Precious Mkhize, Masters, Student,
Faculty of Management Sciences, Durban
University of Technology, Durban, South Africa,

Edwige Pauline NGO-HENHA

Pauline Ngo-Henha, Durban University of
Technology, Durban, South Africa,

ABSTRACT

Purpose: Engaged and committed employees play a crucial role in achieving and sustaining an organisation's competitive advantage by adding value through determination, high productivity and proactively offering their support to peers and management to equip the organisation with the appropriate requisites for the hypercompetitive industry. The chemicals manufacturing industry continuously faces a challenge to increase productivity while reducing costs and requires an engaged and committed workforce to accomplish this feat. This study purposed to assess the engagement and commitment levels of employees and the effectiveness of these behaviours in the organisation. The study aimed to assess the effectiveness of employee engagement and organisational commitment within an organisation. Data for this quantitative study was collected from 135 participants through a structured questionnaire and the responses were analysed using both descriptive and inferential statistical methods. One-way ANOVA and t-tests were conducted to determine the effectiveness of the engagement and organisational commitment of employees in the organisation. The study employed the deductive approach and positivist philosophy. **Findings:** The findings indicate that employees displayed higher levels of job engagement compared to their commitment to the company. However, the overall results suggest that employees were effectively engaged and committed to the organisation. The present study was limited to a single chemical manufacturing company within the Chemicals industry of South Africa. Future studies could broaden their scope to encompass multiple companies within the same sector in order to compare data trends and patterns across various organisations. **Originality.** The current study makes a significant contribution to current literature on employee engagement and organisational commitment and their effect on an organisation within the manufacturing industry. Human resources personnel and company management may benefit from the insights provided by the study on engagement and commitment behavioural constructs.

Keywords: *Employee engagement, effectiveness, organisational commitment.*

INTRODUCTION:

Over the last three decades, employee engagement and organisational commitment have both become inseparable concepts in business research because of their positive relationships with the behaviour of employees, endorsing the performance of the organisation and subsequently leading to profit-making (Rameshkumar, 2020). Heyns and Boikanyo (2019) opined that high levels of employee engagement are essential for the sustainability of the chemical industry's performance, which holds economic significance for the country. The lack of engagement and commitment would negatively affect the industry's economic relevance, as disengaged employees create a disparity between peer efforts and the company's effectiveness. Previous studies (Sahni, 2019; Putri & Setianan, 2019) have reported employee engagement as a positive antecedent to organisational commitment. Therefore, employees who are engaged in their jobs intend to stay with the company and this reduces the negative impact that high turnover has in the organisation.

Prior to the current study, Mabele and Hoque (2020) conducted research on the chemical industry in Africa, including South Africa, and observed that employee performance was influenced by various antecedents and engagement and commitment consequences, such as work-related stress and job satisfaction. Management and human resource practitioners have the responsibility to manage these antecedents and consequences as the failure to do so could lead to dissatisfied and stressed-out employees which inadvertently negatively impacts organisational performance.

The fourth industrial revolution has compelled businesses to consider making changes to their processes and procedures, and to achieve this, companies need a committed workforce to participate in the change implementation (Ko et al., 2021).

The insufficient awareness of the importance of high engagement and commitment levels in the organisation could hamper effective human resource management and overall organisational effectiveness, therefore, this study aims to evaluate the effectiveness of these behavioural constructs within a particular chemicals manufacturing company in South Africa.

LITERATURE REVIEW

The 21st-century business environment requires that employees perform extra-role activities to gain and retain their organisation's competitive advantage in the industry in which they operate.

Chadni and Rahman (2020) view engagement as a psychological state in theory (academics), but as a workforce strategy in practice. These differing views give rise to various conceptualisations as researchers explain the concepts from their own points of view (theory or practical). As such, definitions of employee engagement differ and conclusions on the concept also often differ. The authors observe that a lack of resources and support denies employees the opportunity for optimal performance and the attainment of targets, and thus results in decreased levels of engagement which inevitably taints commitment levels (Chadni and Rahman, 2020). In agreement, Miawati, Sunaryo and Yusnita (2020) add that some employees who have worked for many years in a company remain engaged in their jobs because they feel proud to be associated with the organisation and are inspired by the organisation's values. This group of employees is mainly the homegrown talent of the organisation (Miawati et al., 2020).

Harunavamwe, Nel and Van Zyl (2020) identified that employee engagement had become a popularised concept to gain a competitive advantage and improve organisational performance for over two decades before their study. However, academic studies on the construct were scant, creating a knowledge gap in the literature which ultimately gave rise to the need for additional empirical studies. Nagpal (2022) contributed to the closure of the knowledge gap and stated that in order to ensure talent retention, leaders are responsible for driving engagement within the organisation through managing the organisational culture. When the organisational culture is managed effectively, employees will channel their abilities and energies into engaging in their jobs because they will have a positive outlook toward the company's culture (Nagpal, 2022).

According to Yousf and Khurshid (2024), employee engagement is deemed as an employee's involvement in organisational activities and in organisational values. An engaged employee collaborates with their team to contribute towards the implementation of the business framework. Engagement is dependent on how employees perceive the organisation and the treatment they receive from the company because organisational commitment is a result of employee engagement (Yousf and Khurshid, 2024).

According to Susanto (2022), the organisational commitment concept has been widely studied by organisational behaviour scholars and HR professionals due to its contribution to achieving organisational goals. Organisational commitment has received much attention across many disciplines due to its importance and influence in organisational behaviour. Uriesi (2019) explains that employees are tied to their organisation through a triple-facet psychological bond that is manifested in commitment. These facets are normative, affective and continuance commitment. The employees' willingness to identify with, be involved in and attach themselves emotionally to the organisation is characterised by affective commitment, whereas continuance commitment is shown when the employee stays with the organisation due to the costs of leaving the current employer. In essence, the employee stays because they need to. The decision to stay comes after the employee has made a cost-benefit analysis that comprises staying with or leaving the current employer, while normative commitment relates to the employee feeling a sense of obligation towards the organisation in a moral sense (Uriesi, 2019).

Nagpal (2022) posits that employee organisational commitment is linked to important organisational outcomes such as turnover rate, absenteeism, and job performance. Employees are exposed to multiple facets of commitment. It is therefore important to study employee behaviour to determine which commitment facet they have, as this influences their behaviour towards their jobs and reflects their level of attachment to the organisation; while, Jiatong, Wang, Alam, Murad, Gul and Gill (2022) point out that the organisational commitment concept does not have a uniform conceptualisation in literature, but all the existing definitions outline the bond that links an individual with the organisation they work for. This bond makes the employee feel a sense of belonging to the organisation and have an urge to help the organisation achieve its mission.

A study by Dhir and Shukla (2019) on the chemical manufacturing industry revealed that employee performance is enhanced when employees are engaged in their jobs. Moreover, engagement has a ripple effect on their colleagues within the team and consequently on overall organisational performance. Burger (2019) further reported that the chemicals manufacturing industry plays a crucial role in the acceleration of gross domestic product (GDP) in South Africa. It is therefore important that employees in this sector remain engaged in their jobs to ensure improved performance, which will translate into their respective organisation's growth and subsequent sector growth. The commitment of employees to the companies that trade in the chemical industry is pertinent to the sector's growth and maintenance of its contribution to the GDP. The effect of engaged and committed employees is reflected as an outcome in the organisation's performance levels. Therefore, Seal et al. (2020) suggest that a concerted effort should be put into understanding factors which highly impact employee engagement and commitment, such as attrition or turnover and turnover intent. Employees and management should be aware of employee engagement and organisational commitment determinants to maintaining a healthy work environment that would inevitably contribute to increased engagement and commitment levels (Seal et al., 2020).

The study's objectives are the following:

- a) To assess the level of employee engagement and commitment to the company;
- b) To determine the effectiveness of employee engagement and organisational commitment at the company;
- c) To identify employee engagement and organisational commitment antecedents and consequences; and
- d) To propose a conceptual framework for the organisation.

Theoretical Framework

Bakker and Demerouti's model of Job Demands-Resources (JD-R) has been utilised as the main frame of reference for the present study as it addresses inputs and outcomes that may have a positive or a negative effect on an employee's engagement level. When employees are adequately resourced, they can deal with the demands of their jobs and can make means to maximise the available resources to meet set targets. This reduces work-related stress and promotes engagement since the focus is not on the scarcity of resources but on ways the team can collaborate to achieve their goals. The JD-R model contributes to employee engagement in that the presence or abundance of job resources could potentially motivate an employee to meet their job demands efficiently, which would then lead to higher levels of work engagement, decreased levels of cynicism, and consequently, performance levels that are above average (Kwon & Kim, 2020).

Aggarwal, Jaisinghani and Nobi (2022) posit that the JD-R model dominates the employee engagement research field, especially when it comes to the identification of antecedents and consequences of engagement and putting them into perspective. Previously, research surrounding the JD-R model focused on job resources, but personal resources have since been considered as they play a vital role in the overall performance of employees and help to determine engagement levels amongst employees. These personal resources include, but are not limited to, optimism, autonomy and self-efficacy. Furthermore, the study found that organisational commitment was positively affected by employee engagement and negatively affected by turnover intention (Aggarwal, Jaisinghani and Nobi, 2022).

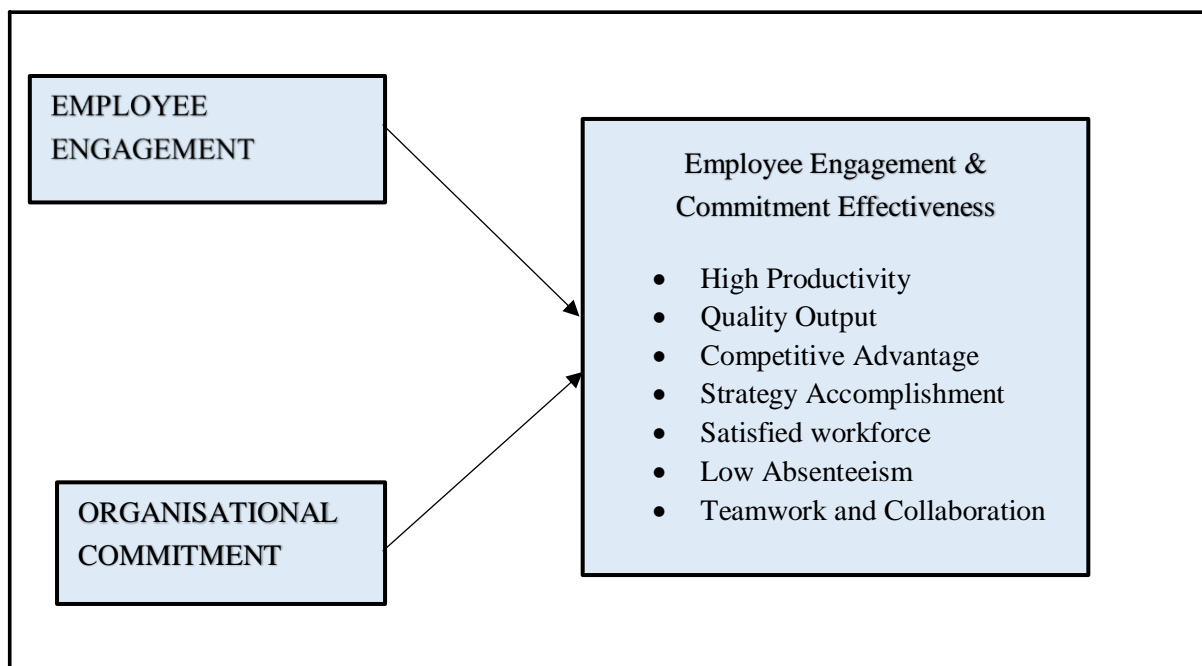
To address the organisational commitment construct in this study, reference was made to the three-dimensional model of organisational commitment developed by Meyer and Allen in 1991. According to Mustafa et al. (2019), the model has been dominating the organisational commitment research space since its inception and is made up of the affective, continuance and normative commitment dimensions.

Conceptual Framework:

In a study by Jung et al. (2021), the leader-member exchange and co-worker exchange variables were used as moderators to examine the effects thereof on work engagement and organisational commitment. Findings depicted that employees tend to develop a positive attitude toward their colleagues, their jobs and the organisation when there is a pattern of relationship exchange between employees, their colleagues and superiors. The quality of these relationships has a direct bearing on the attitude that employees have toward their jobs and on the outcome of their task performance. Employees engage in their jobs when they receive support from their colleagues and supervisors, which relieves them from the negative experiences they may encounter in the workplace and serves as a resource for optimal job performance. Meanwhile, Rameshkumar (2020) employed the JD-R theory in a study on Indian Seafaring Officers while identifying contributing factors to employee’s engagement and their relationship with organisational commitment and found that high job demands lead to burnout that may lead to stress and subsequently other physical ailments.

After a considerable review of literature on employee engagement and organisational commitment, the researchers of the current study found that there is a paucity of theoretical models or frameworks addressing or supporting the effectiveness of employee engagement and organisational commitment within a company setup. Existing frameworks and theories address the relationship between employee engagement and organisational commitment or use these concepts as mediators and/or moderators. The researchers therefore propose a conceptual framework that encompasses employee engagement and organisational commitment, with the effect that these concepts have on the organisation. The framework will reflect organisational success and benefits that are borne from an engaged and committed workforce, as illustrated in Figure 1. The proposed conceptual framework is created by extracting from existing literature the importance and benefits of employee engagement and organisational commitment respectively. Some of the benefits include employee dedication to their jobs, increased productivity, quality outputs, reduced absenteeism, satisfied employees, increased organisational competitive advantage, team collaboration, and the achievement of goals that were set in the organisational strategy.

Fig 1. Proposed Conceptual Framework for the Effectiveness of Employee Engagement and Organisational Commitment



METHODOLOGY

Research Design

A structured data collection instrument is used for quantitative research, and results deduced from these instruments are based on large respondent samples drawn from an even larger population. Quantitative research is most suitable for the association investigation and theoretical examination of key constructs, as observed by Duthler and Dhanesh (2018). Flick (2018) adds that this research design is linked to the positivism philosophy, with a means to test the objectivity of phenomena through variable relationships. Existing theories are credited through using a deductive approach during a quantitative study to prove or counter-argue findings. The main aim of a quantitative study is its search for causality.

For this study, a quantitative research design was used as this method involves variable relationship testing and measuring the effectiveness of variables to be able to track correlations, patterns and the determination of relationship positivity or negativity between the variables. According to Gronmo (2019), the quantitative design permits the utilisation of numbers for data analysis of items collected via a questionnaire in an unbiased manner. This study takes an objective stance; hence it is quantitative in nature. The focus is on numeric unchanging data and convergent reasoning to address the research problem. The researcher utilises numerical patterns to quantify assumptions that arise from variable relationships and to answer the research questions, which lead to the attainment of the study's research objective/s. The use of the quantitative design equips the researcher to generate knowledge on the research topic and create an understanding of the phenomena under investigation.

3.2 STUDY SETTING

The focus of this study is on a selected chemical manufacturing company in South Africa with a staff complement spread across four of South Africa's nine provinces in which the company trades. The remainder of the provinces are excluded because the company does not have a footprint in them. The study included administration and operations or production staff and excluded the organisation's customers/clients, suppliers, independent contractors that conduct work on site and any other external stakeholders of the organisation.

3.3 SAMPLING

This study employed the simple random sampling procedure without replacement because it was well suited to the quantitative study and allowed for accurate research findings as it is of an unbiased and impartial nature. The researcher used this method given that it is effective when collecting data from a diverse population and assists in obtaining an accurate representation of the total population. The simple random sampling method is cost-effective and proved to be efficient because the population was homogeneous and the list from which the sample was drawn was readily available, thereby saving time.

The total population (N= 250) is a representation of the sampling frame. The employee list was then numbered from 1 to 250 in ascending order, giving each member of the population a number, after which the researcher selected random numbers until the desired sample (n=152) was obtained through the method of lottery, as suggested by Mweshi and Sakyi (2020). Each number selected was struck off the list to avoid selecting the same respondent twice, as recommended by Singh and Masuku (2014). The researcher opted for this sampling procedure given that it is fair and helps reduce bias and is a valuable and versatile sampling procedure to allow one to make inferences about the total population. The Sekaran and Bougie (2014) sampling table was used as a guide to obtain the desired sample of n=152 from a total population of N=250.

3.4 DATA COLLECTION

A structured closed-ended questionnaire was employed as a measuring instrument for this study. The respondents were given the option to choose one of five responses for each statement from the 5-point Likert Scale provided in the questionnaire. The responses ranged from Strongly Disagree to Strongly Agree

(Likert, 1974). Data was collected in a single timeframe and respondents were given three weeks to complete and return the questionnaire.

3.5 DATA ANALYSIS

The collected responses were captured onto Microsoft Excel, creating a data set. The responses were then analysed using the Statistical Package for the Social Sciences (SPSS) Version 29. Descriptive and inferential statistics were presented. Tests that were conducted include mean and standard deviation, one-way ANOVA and independent T-tests in order to examine the difference between means from independent groups such as employee demographics and employee engagement and organisational commitment constructs to reach a generalisation about the population under investigation. A factor analysis was applied to test for discriminant and convergent validity of extracted factors, as well as structural equation modelling for path testing of the relationships between latent variables and its dimensions.

3.6 VALIDITY AND RELIABILITY

Confirmatory as well as exploratory factor analysis (C/EFA) were applied to test and ensure that items that were set to measure employee engagement and organisational commitment were valid. Factor analyses using the main components with a varimax rotation were applied to the 46 items in the questionnaire. A significant Bartlett's test ($p < 0.001$) indicated that the data was adequate for successful and reliable extraction and a Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) of 0.851 was attained. According to Shrestha (2021), a KMO result between 0.8 to 1.0 indicates that sampling is adequate. The Bartlett's Test result indicates that there are significant correlations between the items or variables, further supporting the reasonable use of factor analysis to uncover underlying relationships in the dataset. Furthermore, the internal consistency reliability category was applied to the research instrument using Cronbach's alpha test. Taber (2018) states that a coefficient alpha score = 0.70 or above is acceptable whereas 0.80 or above indicates an excellent reliability score. The internal reliability of the items in the questionnaire ranged between 0.687 to 0.912, making the instrument reliable.

3.7 ETHICAL CONSIDERATIONS

Fleming and Zegwaard (2018) advise that researchers should obtain approval for human research ethics from relevant ethical committees before data collection to ensure appropriate behaviour by the researcher when dealing with participants or respondents. A gatekeeper's letter was obtained from the company executive permitting this study to continue in the company and an Ethical clearance number (045/23) was issued by the Institutional Research Ethics Committee (IREC) at the Durban University of Technology, to conduct this study.

Wright and Wallis (2019) suggest that some of the ethical considerations that a researcher needs to adhere to includes, but is not limited to, obtaining consent and ensuring that respondents are not deceived, while maintaining the privacy of possible and actual respondents. A cover letter was written to reassure the respondents to this study that they were protected, and their information was dealt with in a confidential manner that ensured their anonymity.

3. FINDINGS AND DISCUSSION

4.1 RESPONDENTS' SOCIO-DEMOGRAPHIC PROFILES

Table 1 below depicts the respondents' biographical statistics.

Table 1. Respondents' Biographical Characteristics

Variables	Frequency (n=135)	Percentage (%)
Employment Type		
Permanent	125	92.5
Fixed-term Contract	10	7.4
Job Category		
Operational	93	68.9
Administrative	42	31.1
Gender		
Male	86	63.7
Female	48	35.6
Other	1	0.7
Age Group		
18-25 years	9	6.7
26-30 years	15	11.1
31-35 years	23	17
36-40 years	23	17
41-50 years	41	30.4
> 51 years	24	17.8
Race		
African	78	57.8
Coloured	7	5.2
Indian	33	24.4
White	17	12.6
Marital status		
Single	65	48.1
Married	62	45.9
Divorced	7	5.2
Widowed	1	0.7
Length of service		
0-5 years	72	53.3
6-10 years	27	20
11-15 years	12	8.9

16-20 years	13	9.6
21-25 years	4	3
> 26 years	7	5.2
Highest level of qualification		
Below Matric	15	11.1
Matric	60	44.4
Diploma/ Bachelor's degree/ Adv. Dip/ Btech	54	40
Honours degree/ Post Grad	5	3.7
Masters	1	0.7

4.2 EMPIRICAL FINDINGS

4.2.1 FACTOR ANALYSIS

The factor structure and factor loadings of the questionnaire items are summarised in Table 2 below. Overall, the extraction of the 11 factors accounted for 71.06% of the data variance. Items AEEE6, AEE7, AEE8, V1, V2, D2, D4, A4, A5, AC1-AC5, AECO1 and AECO8 were dropped because they cross loaded onto multiple factors or had a single item and therefore could not be analysed for inclusion in the presentation of the results.

Factor 1 presents items (AEOC2-AEOC7) related to assessing the effectiveness of organisational commitment, which included items such as supporting teammates, identifying with company values, treating the company as one's own, enjoying being part of problem-solving teams, feeling motivated to help the company achieve its goals, and being associated with the company. A high variance suggests that these items are strongly related and contribute significantly to the factor.

Factor 2 comprised items (CC1-CC5) that were linked to Continuance Commitment, which assessed the commitment of employees to the organisation contingent to aspects such as perceived costs, sacrifices and barriers to leaving. This suggests that these items were related and contributed significantly to the factor.

Factor 3 comprised items (NC1-NC5) related to Normative Commitment, which assessed the commitment of an employee to the organisation based on items such as moral or ethical obligations, a sense of duty, and loyalty to the employer. The items were related and contributed significantly to the factor.

Factor 4 comprised specific items (D1, D3 and D5) related to Dedication within the larger construct of employee engagement. The items were related and contributed significantly to the factor.

Factor 5 comprised specific items (V3, V4, V5) related to Vigour within the larger construct of employee engagement. These items were related and contributed significantly to the factor.

Factor 6 comprised specific items (AEEE1-AEEE3) related to assessing the effectiveness of employee engagement. These items proved to be related and contributed significantly to the factor.

Factors 7 (A1-A2) and 8 (A3-A4) included items measuring work absorption, which is a sub-component of employee engagement. The items for both factors were related and contributed to their respective factors.

Table 2. Construct Variances

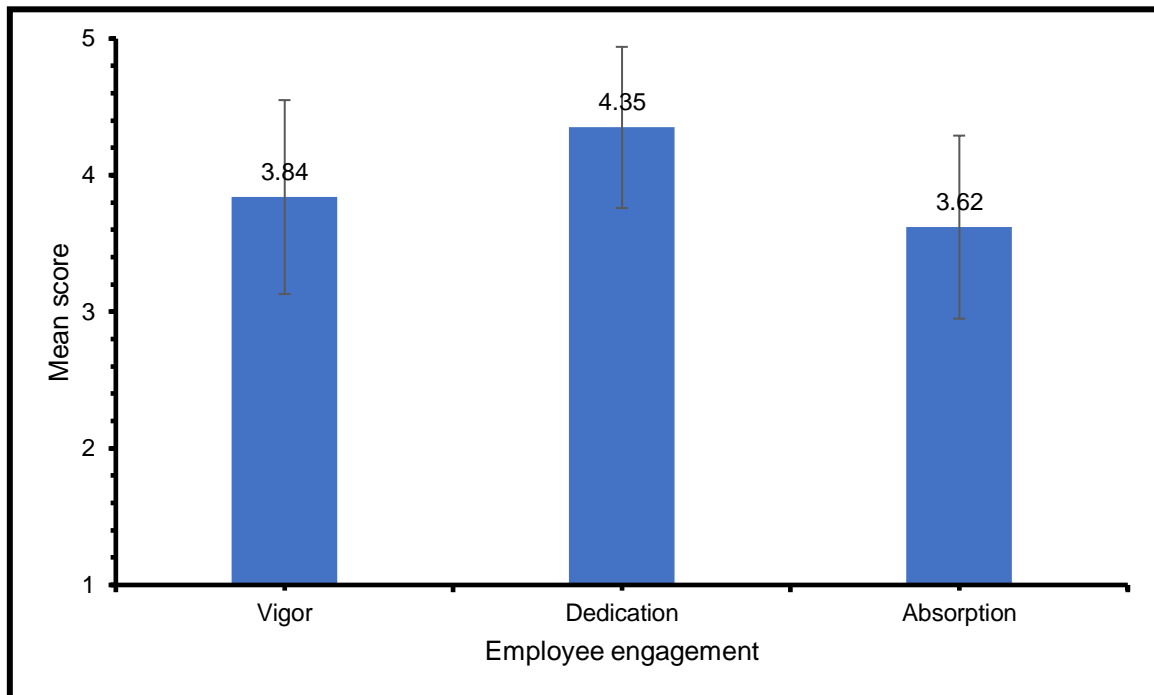
Factor	Construct	Items included	Variance extracted
1	Assessing the effectiveness of organisation commitment (AEOC)	AEOC2-AEOC7	30.414
2	Continuance Commitment (CC)	CC1-CC5	9.938
3	Normative Commitment (NC)	NC1-NC5	5.361
4	Dedication (D)	D1, D3, and D5	4.667
5	Vigour (V)	V3, V4, V5	3.870
6	Assessing the Effectiveness of Employee Engagement (AEEE)	AEEE1-AEEE3	3.431
7	(A)	A1-A2	3.081
8	(A)	A3-A4	2.838

In summary, the data presents multiple factors or constructs, each comprising specific items related to various dimensions of commitment, engagement and assessing the effect that engagement and commitment has on the organisation. The variance extracted values indicate the proportion of variance explained by each factor in relation to the included items respectively.

4.2.2 A COMPOSITE ANALYSIS OF EMPLOYEE ENGAGEMENT

The mean comparison for each of the dimensions measuring employee engagement in the organisation is shown in Figure 2. These values suggest that, on average, respondents report a significant level of ‘vigour’ (M=3.84), ‘dedication’ (M=4.35), and ‘absorption’ (M=3.62) in their work. The standard deviation measures suggest relatively low variability in responses, implying a high level of agreement amongst respondents regarding their dedication to their work. For vigour and absorption, there is some variability in responses, indicating that whilst most respondents report moderate levels of vigour and absorption, there are variations in their experiences of these dimensions of work engagement.

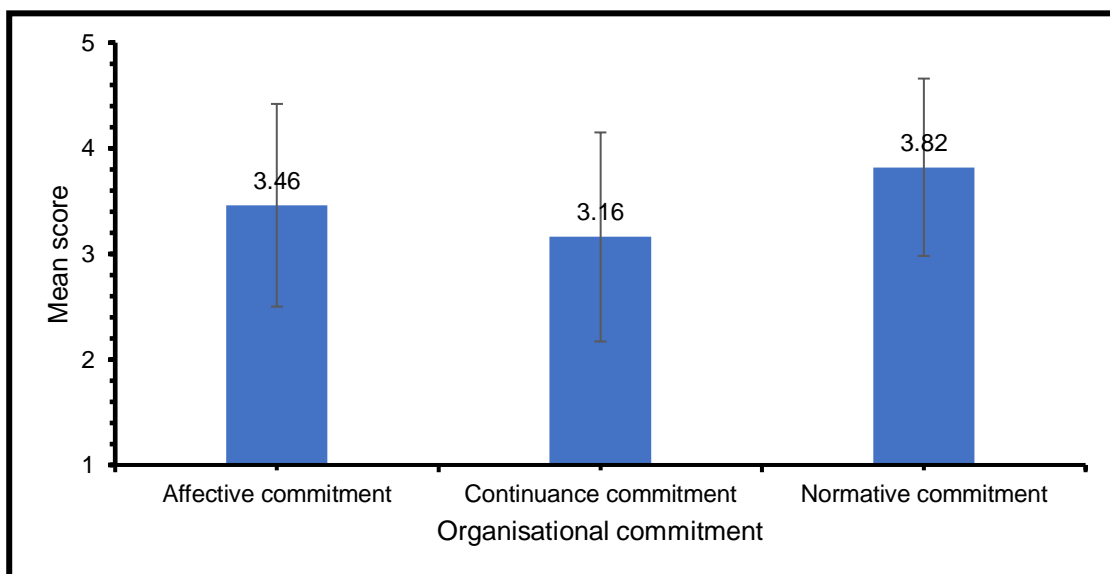
Fig 2. Mean Composite Analysis of Employee Engagement



4.2.3 A COMPOSITE ANALYSIS OF ORGANISATIONAL COMMITMENT

Figure 3 illustrates the mean comparison for each of the sub-components measuring organisational commitment. The mean value suggests that respondents exhibit moderate levels of Affective Commitment, which is emotional attachment, Normative Commitment that denotes moral and ethical obligation, as well as Continuance Commitment, which is perceived costs and barriers. For Affective Commitment and Continuance Commitment, there is variability in responses, suggesting that while most respondents have moderate levels, individual experiences can vary. For Normative Commitment, there is also variability in responses, but the mean score indicates a stronger sense of moral and ethical obligation and loyalty compared to the other dimensions.

Fig 3. Mean Composite Analysis of Organisational Commitment



4.3 THEORETICAL FINDINGS

4.3.1 FITNESS OF THE MODEL

The conceptual framework (Figure 1) proposed for this study was subjected to various tests in order to determine its fitness and significance to this study. The multiple fit criteria given in Table 3 below depicts the overall model fitness. The fitness indices are: chi-square = 170,679; document frequency df = 112; measurement of consistency $p < .001$; $\chi^2 / df = 112$; In line with Fagerland and Hosmer (2013), the measurement model has acceptable fitness according to the recommended criteria.

Table 3. Model Fitness Indices for the Extracted Factors

Fit Indices	Fit values	Criteria
χ^2 / df (p-value)	1.566 (<.001)	<5
IFI	0.948	>.9
CFI	0.947	>.95
TLI	0.933	>.95
RMSEA	0.065	<.08

source: Self-generated

4.3.2 MEASUREMENT MODEL: SCALE RELIABILITY AND CONSTRUCT VALIDITY

A Confirmatory factor analysis (CFA) was run to test for convergent and discriminant validity of the extracted factors. Table 4 below presents the convergent and discriminant validity as well as composite reliability of the constructs as extracted. Hair et al. (2014) states that convergent validity is the convergence of specific construct indicators that share high common variance proportions, whereas discriminant validity is the representation of a construct and its indicators that are distinct from other constructs within the same model. For this study, the criteria employed for the assessment of convergent validity included standardised loadings, composite reliability (CR) and the average variance extracted (AVE). According to Malik (2023), composite reliability (CR) measures internal consistency and reliability of constructs in a factor analysis. It indicates how well the items correlate within each construct and for the CR value to be acceptable, it should range between 0.60 and 0.70. The CR values for this study ranged from 0.754 to 0.905, which are generally considered acceptable. Higher CR values indicate greater internal consistency. Kang and Busser (2018) state that AVE is the measurement of how much variance is captured by the construct compared to the variance due to measurement error. It assesses convergent validity, indicating how well the items within each construct measure the same/similar underlying concept. The recommended value for AVE is 0.5. In this study, the AVE ranges from 0.512 to 0.615, which is acceptable as recommended, suggesting that the constructs explain a substantial portion of the variance in their respective items.

According to Ampofo and Karatepe (2021), Maximum Shared Variance (MSV) represents the maximum amount of shared variance between a construct and another in the analysis. It assesses discriminant validity, indicating that each construct is distinct from others. For this study, the MSV values were lower than the AVE values for each construct, indicating good discriminant validity. Additionally, the constructs are relatively distinct from each other. MaxR(H) measures the maximum redundancy between a construct and other constructs. It assesses the extent to which items within one construct correlate more with items from other constructs than with their own (Ampofo & Karatepe, 2021). For this study, the MaxR(H) values are relatively low, indicating that the constructs are not highly redundant with each other.

Table 4 below provides an assessment of construct reliability (CR), convergent validity (AVE), discriminant validity (MSV and MaxR(H)), and the correlations between constructs (D, CC, AEOC, V). Overall, the measures suggest that the constructs in the factor analysis exhibit good reliability, convergent validity, and discriminant validity, with relatively low redundancy and distinctiveness between constructs.

Table 4. Discriminant, Convergent and Composite Validity of the Extracted Factors

	CR	AVE	MSV	MaxR(H)	D	CC	AEOC	V
D	0.754	0.512	0.325	0.802	0.715			
CC	0.878	0.593	0.202	0.892	,218	0.770		
AEOC	0.905	0.615	0.325	0.919	,570	,213	0.785	
V	0.760	0.515	0.202	0.767	,286	,449	,288	0.717

Additionally, the internal consistency reliability category was applied to the research instrument using Cronbach’s alpha test. A coefficient alpha score = 0.70 or above is acceptable as per Taber (2018), whereas 0.80 or above indicates an excellent reliability score. Table 5 below reflects the reliability scores of employee engagement and organisational commitment constructs. Additionally, the reliability scores of the effectiveness of employee’s engagement and organisational commitment are reflected. The internal reliability of the items in the questionnaire ranged between 0.687 to 0.912.

In summary, the Cronbach's alpha coefficient scores in Table 5 indicate the reliability of the items within each section and sub-section of the questionnaire, with higher values suggesting a greater internal consistency of the items. Therefore, the results reflect the quality and reliability of the data collection instrument and the dimensions it aims to measure.

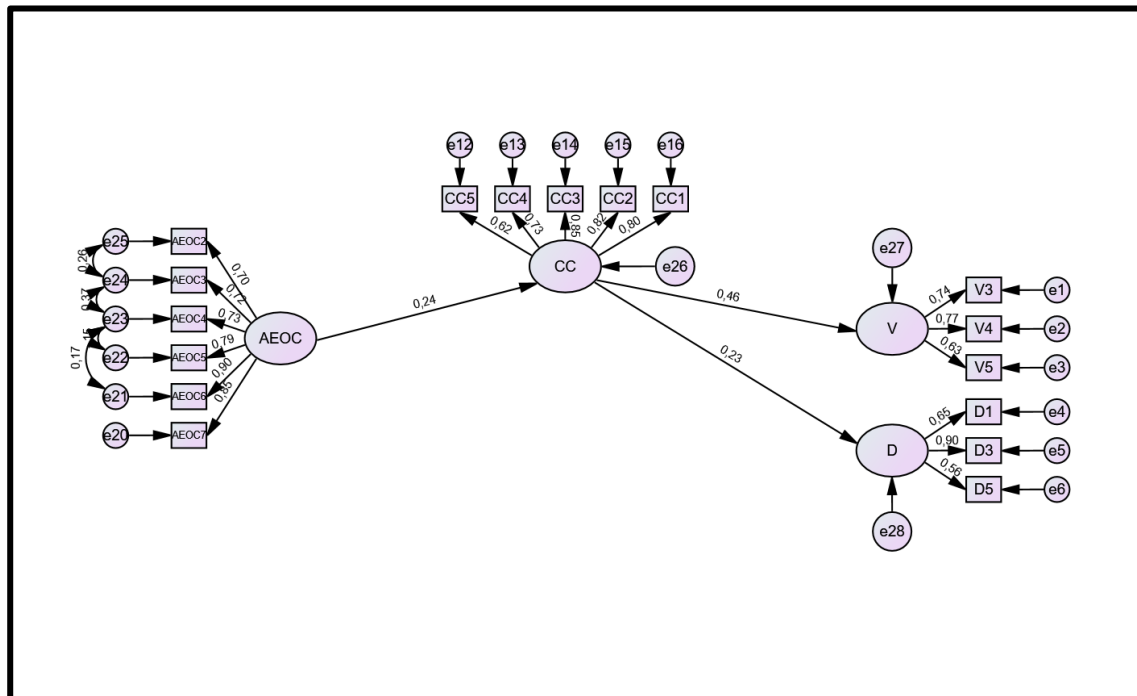
Table 5. Cronbach Coefficient Alpha Test Results

Section	Subsections	Number of items	Cronbach’s alpha
Employee Engagement	Vigour	5	0.795
	Dedication	5	0.777
	Absorption	5	0.687
	N	15	0.853
Organisational Commitment	Affective Commitment	5	0.862
	Continuance Commitment	5	0.875
	Normative Commitment	5	0.817
	N	15	0.912
Effectiveness of Employee Engagement		8	0.825
Effectiveness of Organisational Commitment		8	0.900

4.4 PATH ESTIMATE OF THE MODEL

The conversion of the measurement model into a path model reflects the correlation between the latent variables. A SEM was applied to test the link between latent variables and their dimensions. As a result, the SEM with estimated standardised relationships is provided in Figure 4. According to Guarnaccia et al. (2018), a model is adequate when the CFI is greater than or equal to 0.90 and the RMSEA is less than or equal to 0.80. It is noteworthy that some variable dimensions returned unusable values and were therefore dropped, resulting in the current model as illustrated in Figure 4 below.

Fig 4. SEM Model



Note: $\chi^2=207.395$, $df=112$, $cmindf=1.852$, $CFI=0.917$, $TLI=0.900$, $IFI=0.919$, $RMSEA=0.080$

According to the outcome of the study, the set objectives have generally been met. The study found that on average, employees at the company were engaged in the work and were committed to the company, although results reveal that engagement levels are higher than commitment levels. This was particularly noted through the length of service demographic, where the majority (53.3%) of the respondents have been with the company for five years or less. Furthermore, it was observed within the age group demographic that the workforce consists of older employees as opposed to younger employees, with the largest group falling within the 41 to 50-year-old category.

4.5 DISCUSSION

When the employee engagement levels were analysed, respondents reported higher levels of dedication to their work compared to absorption or vigour. These results align with the findings of Saks (2019), which revealed that dedication was the strongest predictor of the consequences of employee engagement when compared to vigour, which was moderately significant, and absorption, which was the least significant. A similar outcome was observed in Aktar and Pangil's (2018) study, where the employee engagement dedication dimension was higher amongst respondents compared to the vigour and absorption dimensions respectively.

The high levels of dedication imply that employees exhibit the emotional dimension of engagement more than the physical dimension, characterised by vigour, and the cognitive dimension, characterised by

absorption. This reflects a high involvement level in task execution but low levels of focus and a less resilient mental state, which may not yield the desired outcomes upon completion of the task.

Furthermore, findings revealed that temporary employees were less engaged compared to their permanently employed colleagues. According to Guarnaccia et al. (2018), this may be due to the job insecurity faced by temporary employees, making it difficult for them to immerse themselves in or be dedicated to projects when they are uncertain about their employment beyond the termination date of their fixed-term contract. This finding may have negative implications for project-based work where an employee is required for a fixed term to complete a project. The lack of engagement could be detrimental to the achievement of project objectives and could also have financial implications as the organisation could be expected to employ personnel for a longer period than required for a specific project, thereby driving up operating costs and negatively impacting project timeframes, which affects organisational performance as a whole.

Organisational commitment levels were also investigated, and findings revealed that respondents reported a higher level of agreement on normative commitment ($M=3.82$) compared to affective and continuance commitment, indicating that respondents remain with their current employer due to a sense of moral duty to the organisation, which denotes that employees feel that they owe the employer commitment in return for being provided with employment but they do not have affection towards the organisation. The outcome of the current study concurs with Nguyen et al. (2020), which examined the impact of organisational commitment on employee motivation and reported that employees exhibited a high level of normative commitment when there was transparency between the company and the employee, and when the company devised and communicated the employee's development plan early in their tenure.

4. CONCLUSION:

The present study aimed to assess the effectiveness of employee's engagement and organisational commitment at a selected chemical manufacturing organisation. A literature review underpinning the engagement and commitment constructs was presented. A quantitative design was employed for data collection. In addition, the study followed the positivist philosophy and deductive approach and adopted the exploratory purpose.

5.1 RECOMMENDATIONS

The following recommendations were made to the company:

- a) Management support is required to enhance engagement and commitment through career pathing for employees;
- b) Productivity goals or metrics must be set in order to increase engagement levels;
- c) Clear performance and productivity expectations should be communicated during task delegation to alleviate uncertainty and eliminate task ambiguity;
- d) A positive, motivating and conducive working environment needs to be created to allow employees to thrive and focus on tasks, instead of being concerned with their surroundings;
- e) Employees need to be properly trained to perform their tasks, and should be given access to the required tools and support;
- f) Management should ensure that employees feel valued and empowered by allowing them to participate in decision-making; and
- g) Management should promote gender equality in the workplace by putting plans in place to bridge the gap in the gender disparity.

The practical implementation of these recommendations could directly and indirectly positively influence organisational performance and contribute to profitability and the sustainability of the company's competitive advantage.

5.2 LIMITATIONS AND FUTURE STUDIES

The limitations that were encountered in this study are listed below.

- a) The study was limited to one company in the South African chemical manufacturing industry. It is therefore not advisable to generalise the findings to the whole chemical sector or industry.

- b) Some respondents were reluctant to participate in the study for fear of identification, although the researcher assured them that responses were anonymous.
- c) This study was quantitative. Therefore, the researcher had to rely on the responses as a true reflection of the respondent as the design does not allow for further probing or clarity.

As the present study was limited to a single chemical manufacturing company within the chemicals industry of South Africa, future studies could broaden their scope to encompass multiple companies within the same sector in order to compare data trends and patterns across various organisations.

Furthermore, the absence of inquiries aimed at assessing management's perceptions of the constructs under examination implies that a comparison between employee and managerial viewpoints was not possible. To address this gap, future research may consider incorporating seniority levels as a demographic variable, as well as including specific questionnaire items tailored towards managers.

5. AUTHOR CONTRIBUTIONS

Conceptualization: Precious Mkhize

Data curation: Precious Mkhize

Formal analysis: Precious Mkhize and Pauline Ngo-Henha

Investigation: Precious Mkhize

Methodology: Precious Mkhize

Project administration: Precious Mkhize

Supervision: Pauline Ngo-Henha

Writing – original draft: Precious Mkhize

Writing – review & editing: Precious Mkhize and Pauline Ngo-Henha

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8. CONFLICT OF INTEREST

There are no conflicts of interest to declare.

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