

# The Influence of Ethical Leadership on Employee Creative and Innovative Behaviour: A Higher-Order Constructs Modelling in PLS-SEM

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## Abstract

The study is aimed at investigating the curvilinear relationship between ethical leadership and employee creative and innovative behaviour in a South African State Owned Enterprise. The central argument of this paper is that ethical leadership can influence employee creative and innovative behaviour in the workplace. One hypothesis was posited and to empirically test the hypothesis, a sample data set of 160 was used. The data from 160 respondents comprising managers and employees was collected using predeveloped questionnaires and analysed through structural equation modelling and multiple regression techniques conducted with the Smart-PLS statistical software. The hypothesis was found to be significant and supported. Drawing from the study findings, managerial implications are discussed, and limitations and future research directions are suggested. Overall, this study provides tentative empirical support that employee creative and innovative behaviour can be influenced by ethical leadership in South Africa: a context that is often less researched.

## Keywords

Ethical Leadership, Employee Creative and Innovative Behaviour, High-Order Constructs Modelling, South Africa

## 1. Introduction

Employee creativeness and innovativeness are one of the most important characteristics to measure a company's human capital, particularly in know-

ledge-intensive companies (Zhang & Bartol, 2010). Furthermore, a plethora of studies has found an association between a company's human capital performance and its overall performance or profitability (Walumbwa et al., 2011). Moreover, employee creative and innovative behaviour is observed to sustain, develop, and breed innovation that eventually leads to a firm's competitive advantage (Ye et al., 2022). For that reason, the subject of employee creative and innovative behaviour has become paramount to both business practitioners and academics alike. Employee creative behaviour has been defined as the development of product ideas and services, practices or procedures which are unique and useful with immeasurable value to the organisation (Elidemir et al., 2020). Thus, employee creative and innovative behaviour has been noted to be an enabler of strength that facilitates organisational success (Setyaningrum & Muafi 2022). Furthermore, according to Zhu et al. (2016), employees' creative and innovative behaviour is perceived as precious capital within organisations which encourage variety, change and adaptation.

While the benefits of employee creative and innovative behaviour are well documented in the extant literature, there remains some void on the antecedents of employee creative and innovative behaviour, particularly related to organisational leadership. Some research on predictors of employee creative behaviour focused on include moral leadership (Gu et al., 2015); knowledge sharing (De Clercq & Belausteguigoitia, 2019); and self-efficacy and psychological empowerment (Huang et al., 2016). However, one of the leadership constructs that have been a centre of focus by research as a predictor of employee creative and innovative behaviour is ethical leadership. Scholars such as (Cheng et al., 2019; Chughtai, 2016; Elqassaby, 2018) are among some of the researchers who have extensively researched ethical leadership as a precursor to employees' creative and innovative behaviour.

Despite a concerted interest by researchers in ethical leadership and its effects on employee creative and innovative behaviour, most of these studies investigated these two constructs as unidimensional constructs. Besides, cross-examination of the spate of literature indicates a paucity of studies that interrogates the influence of ethical leadership on employee creative and innovative behaviour as high-order constructs in the empirical literature. The current study is an attempt to fill in this lacuna. Thus, drawing from this identified research gap, this study's purpose is to explore the influence of ethical leadership dimensions on employee creative and innovative behaviour dimensions, as second-order constructs. From this line of thought, the causal relationship between ethical leadership and employees' creative and innovative behaviour is distinctively and succinctly examined.

Nonetheless, the current study is expected to generate new insights and knowledge in the organisational behaviour literature, particularly, the influence of ethical leadership dimensions on employees' creative and innovative behaviour dimensions as high-order constructs. In addition to that, the findings of

this study have practical implications for managers in the corporate world and perhaps in the public sector environment, too.

The rest of the article is organized as follows. A review of the theoretical and empirical literature is presented first. This is followed by a discussion on the methodology used in the current study, following which the analysis and conclusions are outlined. Finally, implications, limitations and future research directions are given.

## 2. Literature

### 2.1. Social Learning Theory

Research has found support for the notion that perceived ethical leadership supports employee creative behaviour through the social learning phenomenon in the development of the self-concept and role identity. For example, in studying social exchange relationships and creativity, [Huang et al. \(2016\)](#) found that high-quality interactions with leaders serve to increase employees' self-efficacy through social (vicarious) learning and social persuasion. Hence, observing and learning from leaders' behaviours during social interactions can be an important and salient source of a subordinate's role identity development ([Koseoglu et al., 2017](#)). Employees' mental images of their leaders are effective in activating different aspects of the employees' self-concepts ([Jha & Singh, 2019](#)). For example, taking a social learning perspective on ethical leadership, [Jin et al. \(2022\)](#) suggested that followers should observe their leaders' ethical behaviours, which shape their ethical conduct.

Furthermore, ethical leaders are seen as role models, and observing and learning from them leads to the development of the followers' moral identity ([Sharif & Scandura, 2013](#)). [Yuan et al. \(2018\)](#) suggested that followers model their authentic leader behaviours, which triggers self-awareness and the development of authentic followership. Thus, interacting with a creative leader can influence how strongly employees behave creatively ([Koseoglu et al., 2017](#)).

According to the social learning theory, vicarious learning can also take place by observing the consequences of one's actions ([Zhu et al., 2016](#)). Supervisors are critical in socializing employees into their work-related behaviours and rewarding them for how well they fulfil these behaviours. Expectations are verified and internalized when employees are rewarded for their creative and innovative behaviours and receive creativity-infused instructions, demonstrations, and feedback from their supervisors ([Koziol-Nadolna, 2020](#)).

Effective enactment of this role identity not only confirms and validates a leader's status as a role occupant, but also reflects positively on their self-evaluation ([Koseoglu et al., 2017](#)). Hence, a strong creative role identity influences employees' creativity since performing role-related activity confirms the role identity held ([Wen et al., 2017](#)). As a motivational force, creative role identity drives individuals to perform creatively because they would like to see themselves, and

want to be seen by others, as creative performers (Koseoglu et al., 2017). Leaders with a creative role identity would find creative process engagement to be compatible with their own goals and values so they would be more likely to participate in such behaviours that are likely to lead to creative outcomes (Cheng et al., 2019). In addition, a leader's creative role identity would boost employees' confidence in their ability to influence others to be creative (Chen & Hou, 2016).

Perceiving a leader that is supportive of creativity and innovation can play a facilitating role in helping to transfer employees' creative role identity into them performing creatively. Leadership support for creativity is defined as the "employees' perception of the extent to which their leader encourages, recognizes, respects, and rewards their creativity" (Hughes et al., 2018: p. 4). It is expected that perceived leadership support for creativity enhances the relationship between an employee's creative and innovative behaviour through increased identity salience and commitment. That is, employees who experience leadership support for creativity are likely to place creative role identity at a higher position in their identity hierarchy and be more committed to such an identity (Koseoglu et al., 2017). To then satisfy this highly ranked role identity, employees are expected to control more resources and exhibit more relevant behaviours, such as being proactive in searching for new information and trying new methods to solve a problem (Wu & Parker, 2012). In addition, individuals generally place more value on socially desirable roles (Inamizu, 2018). When leaders support creativity, the recognition, rewards, and respect given to these behaviours can highlight the social desirability of the role of being creative, thus enhancing the effects of a creative role identity on employee creativity (Koseoglu et al., 2017). The tolerance of risk, protection from distractions, and provision of adequate time and resources enacted by a supportive organizational context should reduce the perceived riskiness of trying to be creative, and potentially be beneficial for the realization of creative goals (Zhou & Hoever, 2014). Therefore, in this situation, employees should be motivated to engage in behaviours that fulfil their creative role identity, while when the organizational context is less supportive of their creative role identity this may remain as a behavioural intention rather than be enacted and lead to creativity-related behaviours (Hughes et al., 2018). As such, it is expected that ethical leadership support for creativity would enhance the effect of subordinates' creative role identity on engagement in creativity-facilitating behaviours, resulting in a stronger relationship with employee creativity (Metwally et al., 2019).

According to the social cognitive theory (Bandura, 1986), leaders provide employees with great opportunities for social learning and modelling, which is a critical way of forming one's self-concept such as self-efficacy and self-identity (Bai et al., 2019). It has been argued that leaders are important primers of employees' wisdom, moral behaviours, intelligence, creativity and innovation, and they can exert substantial control over the activation of their subordinates' self-concepts (Koseoglu et al., 2017). Hence, the need to critically evaluate eth-

ical leaders as role models that can impact creativity and innovation in followers.

## 2.2. Employee Creative and Innovative Behaviour

Huang et al. (2016: p. 49) define employee creative behaviour as “an initiative from employees concerning the introduction of new markets, new products, new processes or a combination of such into an organisation”. Employee creative behaviour occurs in bottom-up settings where creative ideas are generated to improve existing processes or products or initiate new ones (Fontana & Musa, 2017). The ideas generated are new, novel, original, useful, or applicable to the organisation context produced through the engagement of a series of problem-solving processes (Amabile, 1983). However, according to Naqvi et al. (2017), creativity is not the ability to create out of nothing but the capability to create new ideas by combining, changing or re-adjusting existing ideas. While some creative ideas are amazing and bright, others are just straightforward, good practical ideas that no one has yet thought of (Amabile & Pratt, 2016).

Within an state-owned enterprise (SOE) setting, this can be initiated by frontline or middle managers when they face internal problems and try to find solutions. The drive for such creative behaviours can be initiated through personality and motivation factors (Zacher & Rosing, 2015). Every firm has specific standardised norms, regulations, and rules that every worker is expected to follow. However, creative behaviour is unique, where a worker gets to challenge existing processes well beyond their formal job description (Chughtai, 2016). It is important to note that the generation of new ideas does not always yield guaranteed success or positive results; some situations lead to ethical conflict or idea implementation (Tu & Lu, 2013). Nevertheless, ethical leaders are duty-bound to use an open communication approach to encourage useful workplace employee creative and innovative behaviours.

Surprisingly, leadership has not generally been seen as a particularly important influence on creativity and innovation, despite the likely impact of leader behaviour on the perceived work environment and the demonstrated impact of the perceived work environment on creativity and innovation (Ruppel et al., 2016). However, each of the three major theories of organizational creativity and innovation namely: the componential theory of Amabile (1988), the interactionist theory of Woodman et al. (1993) and the multiple social domains theory of Ford (Desselle & Semsick, 2016), includes the work environment as an influence on employee creativity and innovation. These theories focus only on the impact of individual and organisational factors on the employees’ creative and innovative outcomes (Alblooshi et al., 2020). Hence, the need to explore more on the conditions, such as leadership influence, that lead to useful and valuable employee creative and innovative behaviour.

Of the three theories, the componential theory of creativity features the work environment most prominently (Alblooshi et al., 2020). Moreover, it is the only

theory of organizational creativity that specifies broad features of leader behaviour both from immediate supervisors and from high-level managers that contribute to the perceived work environment for creativity (Anderson & Costa, 2010). Although the theory presents seven other features of the organizational work environment, including the behaviour of top management, the availability of resources, and cross-organizational cooperation, it proposes perceived leader support as the feature that is under the most direct control of the immediate supervisor. Therefore, exploring this aspect of the work environment for creativity and innovation is of interest in this study for both theoretical and managerial reasons.

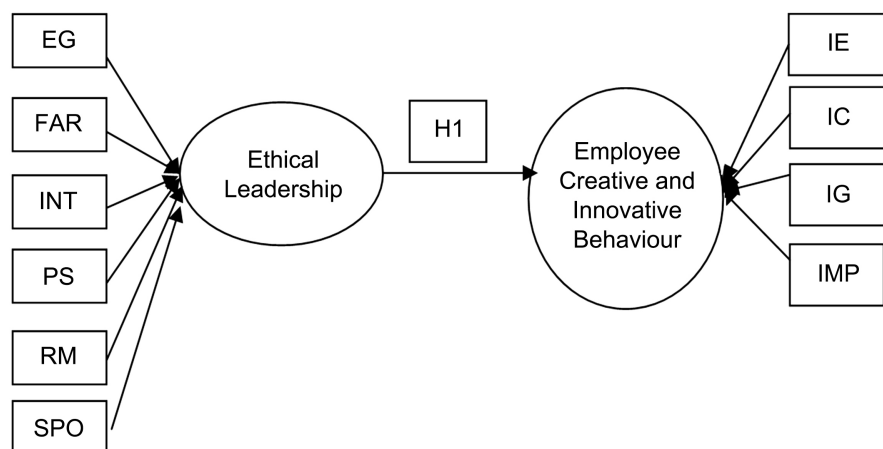
### 3. Conceptual Model and Hypothesis Statement

Drawing from the empirical literature, a conceptual model is developed. Figure 1 illustrates the formative conceptualized model. In this model, ethical leadership is the predictor variable with six dimensions and employee creative and innovative behaviour is the outcome variable with four dimensions. The study proposes and makes an assumption that ethical leadership has effects on employees' creative and innovative behaviour.

### 4. Hypothesis Development

#### Ethical Leadership and Employee Creative and Innovative Behaviour

The framework effectively shows the independent variable (IV) of ethical leadership and the dependent variable (DV), employee creative and innovative behaviour, with its four dimensions—idea exploration, idea generation, idea championing and idea implementation. The proposed conceptual framework



**Figure 1.** Conceptual model. Source: Developed by the Researcher. Key: EL = Ethical Leadership; EG = Ethical Guidance; FAR = Fairness; INT = Integrity; PS = Power Sharing; RM = Role Modelling; SPO = Support and People Orientation; ECB = Employee Creative and Innovative Behaviour; IE = Idea exploration; IC = Idea championing; IG = Idea generation; IMP = Idea implementation.

shows that ethical leadership has a significant impact on employee creative and innovative behaviour. To a large extent, a climate that encourages creativity and innovation is credited to individual leadership styles (Hughes et al., 2018). Leaders within organisations have social power and can influence and motivate followers toward certain actions (Koziol-Nadolna, 2020). The behaviours that ethical leaders exhibit have been shown to have positive relationships with follower trust and perceived organizational effectiveness (Engelbrecht et al., 2013).

A slowly expanding body of literature over the past 30 years has documented the importance of perceived leader support for subordinate creativity and innovation (Asif et al., 2020). At the level of teams, some studies have demonstrated that team members' collective views of support from their leader are associated with the team's success in creative and innovative endeavours (Gadirajurrett et al., 2018; Yuan et al., 2018; Zacher & Rosing, 2015). At the level of individuals, there is some evidence of a connection between subordinates' general perceptions of their leader and the individual creativity of those subordinates (Hammond et al., 2011). A few studies on individual creativity have investigated areas of leader support, such as the team leader's tendency to provide both clear strategic direction and procedural autonomy in carrying out the work (Koziol-Nadolna, 2020) or supportive, non-controlling supervision (Halbusi et al., 2020). Taken together, these studies suggest that subordinates will be more creative and innovative when they perceive their immediate supervisors as being supportive of them and their work.

Considering the above discussion and empirical evidence, the following hypothesis is, therefore, postulated in the context of SOEs in South Africa:

*H1: There is a positive relationship between ethical leadership and employee creative and innovative behaviour.*

## 5. Research Methodology

### 5.1. Sample and Data Collection Method

The sampling frame for this study is all middle and low-level management (supervisors) at the SOE-selected subsidiary with a staff complement totaling 55 000. The decision to select managerial employees is to exclude employees who do not have a direct interface with their managers and hence are unable to provide reliable responses. A list of all middle and low level management employees was obtained from the human resources department from which sample sizes were computed the Raosoft (2004) Sample Size Calculator, to participate in the survey for each level using stratified sampling totaling 399 employees. Individuals were then selected randomly from each stratum until 160 participants were realized made up of 109 low-level managerial employees and 51 middle-level managerial employees. A survey method was used to collect data and only employees who assumed a managerial position in SOEs were requested to address the questionnaire.

## 5.2. Measurement Instruments

Measures for all constructs, i.e., ethical leadership dimensions and employee creative and innovative behaviour dimensions were adopted from previous studies. They were adapted to fit with the study's context and purpose. To measure ethical leadership a 38-item scale with six main dimensions was used and adapted from [Kalshoven et al. \(2011\)](#). To measure employee creative and innovative behaviour a 10-item scale adopted from [de Jong and Den Hartog \(2010\)](#) was used in this study. A 5-point Likert scale was used where follower participants were asked to rate their leadership behaviour as well as to evaluate their followers' perceived abilities to generate and implement new ideas related to their jobs.

## 5.3. Data Analysis Method

The reliability of the research instrument was measured using Cronbach tests, and composite reliability. Validity was also confirmed using lower-order and higher-order construct validity tests. The model is designed on [Amabile's \(1988\)](#) componential theory, which proposes that work environments impact creativity by affecting components that contribute to creative behaviours and leaders are part of the managerial practices that affect employee creative behaviours ([Ahmad et al., 2021](#)). A structural equation modeling (SEM) approach, using Smart PLS statistical software ([Hair et al., 2011](#)), was undertaken to examine the study's data concerning its theoretical proposition. A mandatory two-stage procedure of second-order hierarchical SEM was carried out for analysis ([Anderson et al., 2014](#)). Firstly, measurement model assessment was performed to assess the reliability and validity of the measurement model at lower order constructs level. In the second stage, structural modelling was undertaken at second-order modelling where causal relationships were evaluated. Results from this two-staged procedure are discussed in detail below.

## 6. Results

### 6.1. Sample Description

Of the 399 questionnaires distributed, 160 questionnaires were usable, representing a response rate of 40%. Results on the profile of respondents are indicated as follows: Of the 160 respondents, 51 were middle-level managers (supervisors) and the remainder was low-level managers.

The next section presents the measurement model results, model fit results and structural modelling results. Thereafter, the discussion and implications of the research findings are provided.

### 6.2. Measurement Model Evaluation

The quality of the constructs in the study was assessed based on the evaluation of the measurement model. The assessment of the quality criteria starts with the evaluation of the factor loadings which is followed by establishing the construct



reliability and construct validity.

**Table 1** provides a summary of the descriptive statistics and the measurement model assessment statistics. The mean values provided below indicate that the majority of the respondents agreed with the measures asked (>3 - <5). The standard deviations were less than 2, therefore, indicating that the mean values are a correct reflection of the majority average perceptions. A detailed explanation of the measurement model statistics is provided under the reliability and validity assessment sections.

### 6.3. Reliability Analysis Assessment

According to Nunnally and Bernstein (1994) “Reliability is defined as the extent to which a measuring instrument is stable and consistent. The essence of reliability is repeatability. If an instrument is administered over and over again, will it yield the same results” (p. 285). The two most commonly used methods for establishing reliability include Cronbach Alpha and Composite Reliability (CR). The results for both Cronbach Alpha and Composite Reliability results are presented in **Table 1**. The Cronbach’s Alpha ranged from 0.525 to 0.934 whereas Composite Reliability statistics ranged from 0.661 to 0.952. Both indicators of reliability have reliability statistics over the minimum required threshold of .50 (Hair et al., 2016). Hence, construct reliability was established.

**Table 1.** Scale accuracy analysis.

Research construct	Scale item		Cronbach’s Alpha	CR	AVE	Factor Loadings	
	Mean	SD					
EG	EG1	4.05	0.872			0.872	
	EG2	4.119	0.824			0.847	
	EG3	4.35	0.957			0.773	
	EG4	4.062	0.764	0.897	0.920	0.622	0.847
	EG5	4.15	0.709				0.743
	EG6	3.812	0.903				0.730
	EG7	4.294	0.953				0.689
FAR	FAR1	2.269	1.077			0.817	
	FAR2	1.925	1.132			0.892	
	FAR3	1.900	1.152	0.934	0.950	0.792	0.917
	FAR4	1.750	1.037				0.920
	FAR5	1.725	0.974				0.899
IC	IC1	4.044	1.185	0.817	0.910	0.834	0.962
	IC2	3.894	1.028				0.862

## Continued

<b>IE</b>	IE1	3.831	1.114	0.525	0.661	0.500	0.700
	IE2	3.094	1.145				0.705
<b>IG</b>	IG1	3.862	0.932	0.829	0.897	0.744	0.854
	IG2	4.25	0.968				0.888
	IG3	3.862	0.945				0.846
<b>IMP</b>	IMP2	4.319	1.002	0.900	0.952	0.909	0.954
	IMP3	4.362	0.912				0.952
<b>INT</b>	INT1	4.125	0.827	0.877	0.915	0.730	0.878
	INT2	4.325	0.884				0.807
	INT3	4.181	0.790				0.859
	INT4	4.031	0.840				0.871
<b>PS</b>	PS1	3.856	0.843	0.787	0.853	0.540	0.609
	PS2	4.356	0.801				0.751
	PS3	3.862	0.825				0.822
	PS4	4.025	0.948				0.681
	PS5	3.938	0.796				0.793
<b>RM</b>	RM1	4.044	0.777	0.909	0.932	0.732	0.872
	RM2	4.062	0.764				0.882
	RM3	4.287	0.876				0.851
	RM4	4.112	0.783				0.829
	RM5	4.250	0.942				0.844
<b>SPO</b>	SPO1	4.144	0.828	0.867	0.895	0.550	0.817
	SPO2	3.688	0.963				0.688
	SPO3	3.825	0.884				0.798
	SPO4	3.775	0.887				0.724
	SPO5	3.763	0.952				0.677
	SPO6	4.275	0.829				0.708
	SPO7	4.050	0.812				0.769

Key: EG = Ethical Guidance; FAR = Fairness; INT = Integrity; PS = Power Sharing; RM = Role Modelling; SPO = Support and People Orientation; IE = Idea exploration; IC = Idea championing; IG = Idea generation; IMP = Idea implementation. SD = Standard Deviation; CR = Composite Reliability; AVE = Average Variance Extracted; \*Scores: 1-Strongly Disagree; 3-Moderately Agree; 5-Strongly Agree.

## 6.4. Construct Validity

### 6.4.1. Convergent Validity

Convergent validity is “the degree to which multiple attempts to measure the same concept are in agreement. The idea is that two or more measures of the same thing should covary highly if they are valid measures of concept” (Carlson & Herdman, 2012: p. 17). When the AVE value is greater than or equal to the recommended value of 0.50, items converge to measure the underlying construct and hence convergent validity is established (Fornell & Larcker, 1981; Said et al., 2011). Convergent validity results based on the AVE statistics in the current study show that all the constructs meet the expected threshold. Hence, convergent validity is not an issue. Table 1 shows the AVE value for each of the constructs.

### 6.4.2. Discriminant Validity

Discriminant validity is “the degree to which measures of different concepts are distinct. The notion is that if two or more concepts are unique, then valid measures of each should not correlate too highly” (Carlson & Herdman, 2012: p. 18). In this study, discriminant validity was assessed using the Fornell and Larcker Criterion.

According to Fornell & Larcker (1981) criterion, discriminant validity is established when the square root of AVE for a construct is greater than its correlation with all other constructs. In this study, the square root of AVE for a construct (In bold and Italics) was found greater than its correlation with another construct (Table 2).

**Table 2.** Discriminant validity-fornell and larcker criterion.

	EG	IE	FAR	IC	IG	IMP	INT	PS	RM	SPO
<b>EG</b>	<b><i>0.789</i></b>									
<b>IE</b>	0.211	<b><i>0.703</i></b>								
<b>FAR</b>	-0.409	-0.003	<b><i>0.890</i></b>							
<b>IC</b>	0.246	0.400	-0.242	<b><i>0.913</i></b>						
<b>IG</b>	0.372	0.360	-0.257	0.675	<b><i>0.862</i></b>					
<b>IMP</b>	0.384	0.342	-0.310	0.757	0.679	<b><i>0.953</i></b>				
<b>INT</b>	0.720	0.327	-0.387	0.272	0.239	0.359	<b><i>0.854</i></b>			
<b>PS</b>	0.645	0.173	-0.140	0.242	0.267	0.266	0.522	<b><i>0.679</i></b>		
<b>RM</b>	0.815	0.043	-0.386	0.204	0.318	0.316	0.620	0.618	<b><i>0.856</i></b>	
<b>SPO</b>	0.747	0.314	-0.350	0.282	0.287	0.319	0.750	0.723	0.611	<b><i>0.742</i></b>

Note: EG = Ethical Guidance; FAR = Fairness; INT = Integrity; PS = Power Sharing; RM = Role-modelling; SPO = Support and People Orientation; IE = Idea exploration; IC = Idea championing; IG = Idea generation; IMP = Idea implementation.

The table shows square root of AVE for ethical guidance (0.789), idea exploration (0.703), fairness (0.890), idea championing (0.913), idea generation (0.862), idea implementation (0.953), integrity (0.854), power sharing (0.679), role modeling (0.856) and support and people orientation (0.742) is higher than each construct's correlation with other constructs.

The notion is that if two or more concepts are unique, then valid measures of each should not correlate too highly. AVE measures the level of variance captured by a construct versus the level due to measurement error (Alarcon & Sanchez, 2015). According to Zait and Berteau (2011) in an AVE analysis, the square root of every AVE value belonging to each latent construct is tested to see if it is much larger than any correlation among any pair of latent constructs. Hence, providing strong support for the establishment of discriminant validity. As provided in **Table 2**, the Furnell and Larcker Criterion conditions are met.

## 6.5. Model Fit Summary

This section presents the analysis of the study's model statistics generated by the Smart PLS statistical software. However, since the model fit statistics are regarded to be still in the development stage, the current study also uses the Global Fit Statistic Approach proposed by Tenenhaus et al. (2005), to augment the model fit statistics generated by Smart PLS.

### 6.5.1. Smart PLS Generated Model Fit Statistics

The indices examined are SMRM and the Normed Fit Index (NFI).

### 6.5.2. Model Fit

The final model provided the following results in **Table 3**: The Standardized Root Square Residual (SMRM) is 0.080, which is less than the 0.10 threshold as recommended by Cangur and Erchan (2015), hence confirming a good model fit. Furthermore, the Normed Fit Index (NFI) is 0.831 which is less than the threshold of 0.900 that as suggested by Cangur and Erchan (2015). Overall, these results indicate that by and large, the model fit indices can be deemed to marginally meet the acceptable thresholds recommended in the extant literature.

### 6.5.3. Global Fit Statistic for the Respecified Final Model

Overall,  $R^2$  for ECB in **Figure 2** indicates that the research model explains more than 21.7% of the variance in the endogenous variables respectively. Following the formulae provided by Tenenhaus et al. (2005), the global goodness-of-fit (GoF) statistic for the research model was calculated using the equation:

$$\text{GoF} = \sqrt{\text{AVE}} * R^2$$

The calculated global goodness of fit (GoF) is 0.367, which exceeds the threshold of  $\text{GoF} > 0.36$  suggested by Khojasteh and Lo (2015). Thus, this study concludes that the research model has a good overall fit.

By and large, the GoF and NFI provided in **Table 3** indicate a model fit of the

data to the proposed conceptual model. Based on this model fit, the researcher proceeded to test the proposed hypotheses.

## 6.6. Structural Model Results

The next step in structural equation modeling is an assessment of the hypothesized relationship to substantiate the proposed hypotheses.

### 6.6.1. Validating High-Order Constructs

Ethical Leadership was the higher-order construct in the study based on six lower-order dimensions (ethical guidance; fairness, integrity, power sharing, role modelling & support and people orientation) and four employee creative behaviour dimensions (idea exploration, idea championing, idea generation and idea implementation). To establish the highest order construct (HOC) validity, Outer Weights, Outer Loadings and VIF were tested. As reflected in **Table 4**, the outer weights were found significant (Hair et al., 2016). Furthermore, outer loadings were found to be greater than 0.50 for each of the lower-order constructs (Sarsstedt & Cheah 2019). Finally, VIF values were assessed to check collinearity, all VIFs are less than the recommended value of 5 (Hair et al., 2016). Since all criteria are met, the HOC validity was established.

**Table 3.** Model fit.

Model Fit Indices	Acceptable Threshold	Current Study Threshold	Decision: Acceptable/ Unacceptable
SRMR	>0.10	0.080	Acceptable
Normed Fit Index (NFI)	>0.900	0.831	Acceptable

**Table 4.** Higher order construct validity.

HOC	LOCs	Outer Weights	T Statistics	P Values	Outer Loadings	VIF
EL	EG	0.236	11.694	0.000	0.912	4.474
	FAR	-0.181	3.894	0.000	-0.543	1.326
	INT	0.232	6.559	0.000	0.849	2.748
	PS	0.180	6.261	0.000	0.755	2.576
	RM	0.185	8.841	0.000	0.840	3.271
	SPO	0.225	6.559	0.000	0.881	3.894

Note: EL = Ethical leadership; EG = Ethical Guidance; IE = Idea exploration; FAR = Fairness; IC = Idea championing; IG = Idea generation; IMP = Idea implementation; INT = Integrity; PS = Power Sharing; RM = Role Modelling; SPO = Support and People Orientation.

### 6.6.2. Hypotheses Testing

Below is **Figure 2**, showing a structural model for this study representing the result for the first hypothesis (H1). In this Model, a higher-order model for ethical leadership (EL) effects on the higher-order model for employee creative and innovative behaviour (ECB) was tested. The first-order models for EL and ECB were run first to generate the second-order weights for the construct's dimensions respectively.

**Figure 2** shows a structural model for Model 1 representing the result for the first hypothesis (H1). In this Model, a higher-order model for ethical leadership (EL) effects on the higher-order model for employee creative behaviour (ECB) was tested. The first-order models for EL and ECB were run first to generate the second-order weights for the constructs' dimensions respectively. **Figure 2** reveals the outcome of H1, which stated as there is a positive impact of ethical leadership (EL) on employee creative behaviour (ECB). The results revealed that EL affects ECB ( $\beta = 0.465$ ,  $t = 2.152$ ,  $p = 032$ ). Hence, H1 was supported.

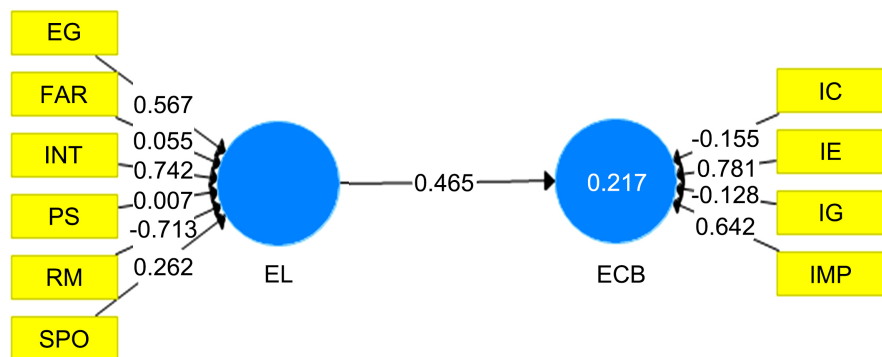
### 6.6.3. Bootstrapping Results

The bootstrapping results are summarized in **Figure 3**.

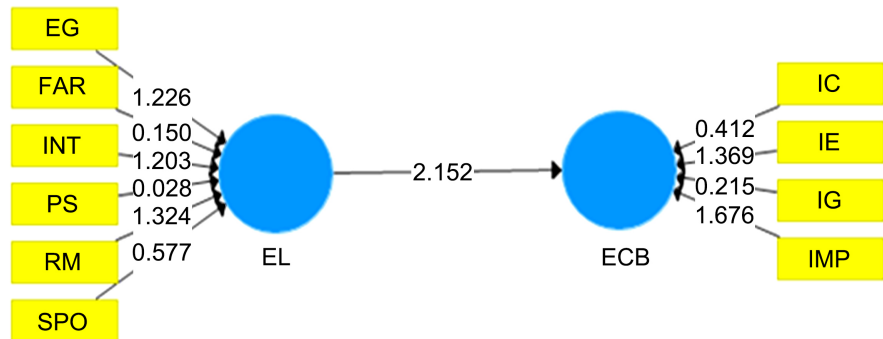
In this Model, a higher-order model for ethical leadership (EL) effects on the higher-order model for employee creative and innovative behaviour (ECB) was tested. The first-order models for EL and ECB were run first to generate the second-order weights for the constructs' dimensions respectively. **Figure 1** reveals the outcome of H1, which stated as there is a positive impact of ethical leadership (EL) on employee creative behaviour (ECB). The results revealed that EL affects ECB ( $\beta = 0.465$ ,  $t = 2.152$ ,  $p = 032$ ). Hence, H1 was supported.

### 6.6.4. Overall Results

**Table 5** reflects the hypothesised relationships, path coefficients, statistics, and p-values for the hypothesised relationships.



**Figure 2.** Structural model for EL-ECB relationship. Source: Developed by the Researcher from Survey Data. Key: EL = Ethical Leadership; EG = Ethical Guidance; FAR = Fairness; INT = Integrity; PS = Power Sharing; RM = Role Modelling; SPO = Support and People Orientation; ECB = Employee Creative and Innovative Behaviour; IE = Idea exploration; IC = Idea championing; IG = Idea generation; IMP= Idea implementation.



**Figure 3.** Structural model EL-ECB relationship. Source: Developed by the Researcher from Survey Data. Key: EL = Ethical Leadership; EG = Ethical Guidance; FAR = Fairness; INT = Integrity; PS = Power Sharing; RM = Role Modelling; SPO = Support and People Orientation; ECB = Employee Creative and Innovative Behaviour; IE = Idea exploration; IC = Idea championing; IG = Idea generation; IMP= Idea implementation.

**Table 5.** Direct relationship results.

Hypothesised Relationship	Hypotheses	Path Co-efficient	T Statistics	P Values
EL → ECB	H1	0.465	2.152	0.032

Source: Developed by the Researcher from Survey Data. Key: EL = Ethical Leadership; ECB = Employee Creative and Innovative Behaviour. H1: There is a positive impact of ethical leadership (EL) on employee creative and innovative behaviour (ECB); H1 evaluates whether ethical leadership has a significant impact on the employee's creative and innovative behaviour. The results revealed that EL affects ECB ( $\beta = 0.465$ ,  $t = 2.152$ ,  $p = 0.032$ ). Hence H1 was supported.

## 7. Discussions

The purpose of this study was to investigate the influence of ethical leadership, on employee creative and innovative behaviour. In particular, one hypothesis was postulated. To test the proposed hypotheses, data were collected from South African government-registered SOEs. The empirical results supported that ethical leadership has a significant impact on employee creative and innovative behaviour. This means that the presence of ethical leadership in an organization promotes employee creative and innovative behaviour. Important to note about the study findings is the fact that ethical leadership has a strong influence on employee creative and innovative behaviour ( $\beta = 0.465$ ,  $t = 2.152$ ,  $p = 0.032$ ).

These results support the hypothesis postulate since there is a positive significant impact of ethical leadership on employee creative and innovative behaviour ( $\beta = 0.465$ ,  $t = 2.152$ ,  $p = 0.032$ ). This finding is similar to the findings of a study in China by Ko et al. (2017), which found that ethical leadership positively relates to employee creativity. Another study in China by Tu, & Lu, (2013) investigated the influence of ethical leadership on the innovative work behaviour of 302 employees working in the manufacturing and telecommunication industries of China and reported that perceived ethical leadership is positively related to

employee innovative work behaviour. The results show that within the South African SOE, ethical leaders influence employees towards behaving creatively and innovatively. Ethical leaders can communicate the importance of ethical and responsible behaviour and they set a good example for their followers (Nejati et al., 2019). Additionally, ethical leaders by demonstrating qualities of honesty, openness, collective motivation, altruism, trustworthiness, justice, and fair treatment, contribute at every stage of the creative and innovative work behaviour process (Tayyasar & Ajmal, 2017). Since followers of ethical leaders perceive themselves as being in a high-quality social exchange relationship with their leader, they reciprocate by exerting more effort and getting engaged in creative and innovative work behaviour (Tu & Lu, 2013). However, the findings of this study are contrary to Li et al. (2019) who emphasised transformational and transactional leadership as important leadership domains that impact employee creative and innovative behaviours. Thus, ethical leadership is also an important leadership domain that impacts employee creative and innovative behaviour.

## 8. Implications and Recommendations of the Study

Our findings offer some critical implications for practitioners. First, to institutionalize ethical leadership more effectively, it is recommended that organizations establish organizational procedures that emphasize ethical leadership (ethical guidance, fairness, integrity, power sharing, role modeling and support, and people orientation) by incorporating ethical leadership into organizational values and management decisions. In addition, managers should also analyse the contextual elements that may support the organization's use of ethical leadership to promote positive work results. For instance, integrity in an organization is beneficial for enhancing the motivation of ethical leadership personnel in the workplace, which may enhance the impacts of ethical leadership (Ahmad et al., 2017).

The findings of this research, which were evaluated in the context of South Africa, are particularly relevant for assisting managers in South African organizations to use ethical leadership more effectively to foster better employee outcomes. Specifically, it is recommended that managers in South Africa recognize and comprehend the curvilinear character of ethical leadership before adopting it with caution to limit its inhibiting effect on employee creativity and innovation (Javed et al., 2020). Managers should stress characteristics such as ethical guidance, fairness, integrity, power sharing, role modeling and support, people orientation, and two-way communication to promote positive work results through ethical leadership. In addition, organizations may adopt ethical leadership training programs to assist ethical leaders in communicating their openness and acceptance of employees' innovative ideas, recognising, and appreciating employees' creative and innovative behaviour, and avoiding the potential controlling effect of excessive ethical leadership on employee initiative and creativity.



Academically, this study makes a significant contribution to the literature on employee creative and innovative behaviour by systematically examining the impact of ethical leadership outcomes on employee creative and innovative behaviour in the context of South Africa, one of the newly developed countries on the African continent. In particular, the outcomes of this study lend limited support to the notion that ethical leadership should be acknowledged as precursors and tools that enhance employee creativity.

## 9. Conclusion, Limitations and Future Research

Although this study provides major contributions to both academics and practice, it was constrained in many respects; as a result, certain possibilities for further research are recommended. First, the data was collected from a registered SOE in South Africa, and the sample size of 160 is rather limited. Perhaps the results would be more enlightening if the sample size were larger, and data were collected from organizations that are not listed as SOEs.

Consequently, future research may utilize data from other private businesses in South Africa and consider expanding this research to other African nations, such as Zimbabwe, to compare the results. Future research may potentially extend the conceptual framework of the present study by investigating the effects of a larger collection of variables. In addition, this will significantly offer fresh insights to the current body of literature on ethical leadership and employee creative and innovative behaviour in the African environment in an understudied academic context.

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## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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