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AN EXAMINATION OF A FEW ANTECEDENTS OF GREEN CREATIVITY USING STRUCTURAL EQUATION MODELING

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Abstract. Green creativity is developing original and practical ideas that could result in green products and services. Moreover, as stakeholders favour environmentally responsible policies and practices, organizations are shifting towards green business models and initiatives. Though there is extensive literature on various green behaviours, there is a lack of a clear understanding of what motivates green creativity. The present study bridges this research gap by identifying employee green behaviour, green shared vision, and green value as antecedents of green creativity. The study used structural equation modeling, based on data from 384 respondents, to analyze the relationship between the variables. The findings revealed significant positive relationships between the variables, supporting the model developed for the study. The study's findings can help organizational leaders to enhance green creativity and consequent innovations by encouraging and facilitating employee green behaviour, green shared vision, and green value.

Keywords: green behaviour, green creativity, green shared vision, green value, structural equation modeling.

Introduction

Studies have identified that business organizations are responsible for global warming and climate change as they continue emitting carbon dioxide and multiple other toxic materials polluting the environment (Robertson & Barling, 2017). Consequently, growing stakeholder interest in environmentally responsible policies and practices has made organizations shift to green business models and initiatives (Boiral et al., 2018). There is also a general trend toward environmentalism, which has prompted policy-makers and management experts to implement green practices for achieving environmental sustainability (Hameed et al., 2022; Mousa & Othman, 2020). Further, intensified environmental awareness among various stakeholders has put business organizations under considerable pressure to take drastic steps to meet market demands by following various international treaties and accords (Chang et al., 2019).

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With the world facing enormous environmental challenges, proper green behaviour is the only remedy, as pro-environmental attitudes and behaviours are essential to deal with the adverse effects of environmental pollution and the consequent degradation. This is all the more important in the most populous parts of the world, particularly Asia (Water Environmental Partnership in Asia et al., 2018). Explosive economic growth in Asian countries, particularly the Middle East region, has induced substantially high pollution levels. Identifying environmental issues and suggesting solutions can be accomplished by examining the potential behavioural factors of organizational members that could prompt practical green attitudes. Green values, behaviours, and creativity are a few factors that could effectively deal with environmental issues (Hameed et al., 2022). These factors could positively influence employees' attitudes and behaviours and potentially guide them to have a proactive role in environmental management. Further, green management enhances organizational effectiveness and favours green consumers (Alt & Spitzeck, 2016).

The present study highlights how certain green behaviours could impact green creativity, which is essential for positive environmental performance in organizations. Green creativity is central to developing innovative green ideas that could help green and clean production (Mittal & Dhar, 2016). Though a few factors like green passion, green organizational identity (Mittal & Dhar, 2016), and green motivation (Li et al., 2020) are found to influence green creativity, its psychological antecedents are under-researched. The study, therefore, identifies the indispensability of green creativity and presents empirical evidence on certain antecedents of green creativity, which is critical for dealing with and solving environmental issues in organizations. The antecedents, which are examined in the study, include employee green behaviour, green shared vision, and green value.

The study's importance also lies in the fact that although there is extensive literature on various green behaviours, there is a lack of a clear understanding of what motivates green creativity. In addition, existing literature suggests a lack of studies identifying the antecedents of green creativity. Furthermore, the present study is conducted in Saudi Arabia (SA), where no previous examination has been undertaken in this exciting area. Therefore, the present study proposes a framework with four new constructs: employee green behaviour, green shared vision, value, and green creativity. The study is thus expected to contribute to green behaviour literature by delineating some of the mechanisms that explain the psychology of green creativity among the SA population. Furthermore, the study explores the interlinkage between various green behaviours that could contribute to positive social changes.

1. Review of literature

This section reviews the theoretical and empirical literature accumulated in the relevant fields. The first section presents the theoretical underpinnings, followed by the empirical evidence about the identified variables.

1.1. Theoretical underpinnings

This study derives theoretical backing from the componential theory of creativity (CTC) and innovation (Amabile, 1997, 2013) and the stakeholder theory (ST) (Clarkson, 1995). The CTC

is a comprehensive model that identifies the various social and psychological factors that influence an individual's ability to generate creativity. The theory has its edifice on defining creativity as the generation of novel and appropriate ideas or outcomes for a specific goal. Further, the creativity theory postulates that social and work climatic conditions influence employee creativity (Amabile & Pratt, 2016). Based on the theory, the researchers propose that green creativity channels employee attitudes toward green innovation (Amabile & Pratt, 2016).

Further, according to Song and Yu (2018), green innovation can be considered a function of green creativity and other green behaviours, skills, and expertise. Thus, green innovativeness depends on the influence of green creativity, expertise, and task motivation (Song & Yu, 2018). The study proposes that value, shared vision, and behaviour provide factual knowledge, ability, and talents to drive green initiatives and creativity across green task domains. Studies have, however, overlooked the significant roles multiple green variables play in advancing it (Mittal & Dhar, 2016).

Despite the hue and cry for the need to bring in environmental sustainability, organizations are slow to respond. This discrepancy brings a yawning gap between profits and environmental sustainability, which needs to be bridged. Organizations can bridge this gap by adopting the ST (Freeman et al., 2018), which promotes a positive interface between stakeholders and the broader environment. ST emphasizes the need for organizations to concentrate on profits with due importance to the environment (Barney & Harrison, 2020). This thought pattern calls for innovative thought processes, motivations toward green creativity, and the assignment of adequate organizational resources to facilitate profit maximization. Thus, ST facilitates assurance of profit maximization through a green shared vision and alignment of organizational objectives with environmental sustainability (Ogbeibu et al., 2020).

An appropriate organizational climate can stimulate employees' creative behaviour, if they have the relevant skills and are motivated appropriately (Li et al., 2020). Green task motivation also helps accomplish organizational green-oriented goals (Song & Yu, 2018). Further, the generation of green shared values is contingent on the organization's interest in meeting members' expectations and values and recognizing positive behaviours. The study can also draw inputs from the role behaviour theory proposed by Katz and Kahn (1978). This theory applies to green behaviour from a behavioural perspective. Based on the theory, MacKenzie et al. (2001) proposed that job performance could involve two behavioural types: in-role and extra-role. While in-role behaviour refers to organizational outputs required formally, extra-role is beyond job requirements. With extra-role behaviour, achieving organizational goals involves a willingness and shared vision to initiate and execute purposeful and valuable tasks (like green behaviour), beyond standard job requirements. Based on the above relevant theories, it is ideal to have a multidimensional view to promote green behaviour (Jackson, 2005).

1.2. Green creativity

Green creativity is the development of unique and valuable green ideas about green products, practices, or services, contingent on various organizational and individual antecedents. Ogbeibu et al. (2020) identified it as identifying and developing environmentally sustainable and innovative concepts. It includes green task motivation, creativity skills, and expertise. Further, green creativity is also considered the extra-role behaviour that involves developing novel

and suitable green products (Chen & Chang, 2013). Cultivating green creativity facilitates organizations to thrive in the long run against the backdrop of an ever-changing market and environmental conditions (Ogbeibu et al., 2020).

Employee flexibility and freedom facilitate green creative ways and unleash green innovation. But unfortunately, only scant empirical evidence exists about how behavioural skills influence green creativity (Mittal & Dhar, 2016). Moreover, when examining green creative behaviour within organizations, there is a need to consider multiple behavioural constructs from a sustainability context (Hameed et al., 2022). However, the possible influence of multiple other green attitudes and behaviours on green creativity seems to be ignored (Ali et al., 2019). Therefore, the present study examines the distinct roles of a few green variables on green creativity and how they facilitate organizations to bolster green innovation and achieve sustainability.

1.3. Employee green behaviour

Protecting the environment and minimizing ecologically harmful activities is green behaviour (Steg & Vlek, 2009). It includes all behaviours friendly towards the environment. Unsworth et al. (2013) defined it as employee behaviour that has a positive impact on environment. Ones and Dilchert (2012) presented a simple but comprehensive definition where they elaborated on scalable behaviours of employees associated with environmental sustainability. As employee green behaviour is a "scalable" action, its frequency or level of proficiency can vary depending on the individual employee. This scalability enables the quantification of each employee's contribution toward employee green behaviour. European Environment Agency (2005) considers it as the shared responsibility of individuals, public authorities, and industry; through it, organizations and members operate with the least possible detrimental effect on the environment. Zhang et al. (2019) identified it as employee behaviour that supports organizational environmental initiatives. Providing the due focus and the importance of green initiatives could accelerate the efficient fostering of environmental sustainability. Employee green behaviour can generate a "feel-good" effect and a sense of moral self-image (van Doorn & Kurz, 2021).

Organizations attach value to green behaviours as they can facilitate the achievement of sustainable goals since employees get involved in citizenship roles and the resultant performance effectiveness (Sulphey, 2017; Sulphey & Faisal, 2021). Further, exhibiting green behaviours is contingent upon unique situations within the organization. Recent evidence suggests (for instance, Aboramadan et al., 2021; Al-Ghazali & Afsar, 2021) that employee green behaviour is related to creativity. The importance of green creativity stems from the fact that it could help businesses gain a competitive advantage and become more innovative (Chen, 2008).

1.4. Green value

Green value, which helps in sustainability, can influence organizational members' behaviour and translate into pro-environmental behaviours (Robertson & Barling, 2013). Green value could also lead to green trust and influence purchase intentions (Chen & Chang, 2013). Al-Ghazali and Afsar (2021) found that personal values influence individual green attitudes and behaviours. Therefore, environmental values could contribute to morality and help

develop ecological attitudes, habits, and behaviours. Green value could also have various emotional benefits besides deriving multiple environmental benefits. Furchheim et al. (2020) identified green value as the opposite of materialistic values, and those individuals having it tend to reduce, curtail, or reject avoidable consumption and lead a modest lifestyle.

Significant positive relationships have been found between environmental values and green behaviour, which would ultimately solve environmental and ecological issues. Li et al. (2020) identified commitment to the environment as likely to increase intrinsic motivation, leading to creativity and innovative green output (Wu et al., 2021). Green value also impacts market pricing, and any ignorance of it on the part of stakeholders could distort market pricing. In addition, Wu et al. (2021) identified a positive association between green values and creativity.

1.5. Green shared vision

As a cornerstone for innovative strategies, a shared vision has the potential to deliver competitive advantage and corporate success (Jansen et al., 2008). In addition, it can encourage organizational members to increase their disposition to exceed expectations. A shared vision is critical for business success as it is an effective catalyst. It is a powerful organizational tool and forms the core of all business strategies. Establishing a shared vision would help organizations gain competitive advantages and help create and enhance the transition from the current state to the desired final state (Boyatzis et al., 2015). In addition, a shared vision motivates and facilitates organizational members to accomplish tasks mindfully and exceed all expectations (Vogus & Sutcliffe, 2012). It also enables organizational members to view and approach their work performances through a broader canvas.

Green shared vision is a concept that originated at the turn of this century (Chen et al., 2014). The concept has its origins in the notions of environmental friendliness and shared vision. Chang et al. (2019) identified the green shared vision as a clear and consistent strategic direction for accomplishing organizational ecological objectives by staff members.

A shared vision motivates organizational members to enhance their disposition to perform their duties creatively (Sosik et al., 1998). Thus, it is likely to cultivate green creativity when applied to the green shared vision. Therefore, enterprises must implement a shared vision to facilitate green organizational identity and psychological ownership (Chang, 2021). Furthermore, the green shared value could also lead to better pro-environmental bahaviour and higher performance (Chen et al., 2020). Consistent with these findings, Chang (2020) found that when employees genuinely own green shared value, their aspirations harmoniously blend with their organization's and are likely to bring in quality, green creative performance. Further, Chen et al. (2015) identified green shared vision as an antecedent of green creativity. These observations point to the capability of green shared vision to lead to green creativity. Based on the reviewed literature, it is hypothesized that:

H1: There is a significant positive relationship between green value and employee green behaviour;

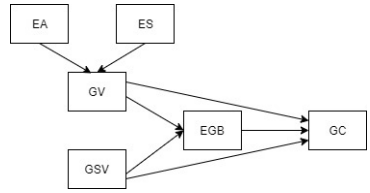
H2: There is a significant positive relationship between green shared vision and employee green behaviour;

H3: There is a significant positive relationship between green value and green creativity;

H4: There is a significant positive relationship between green shared value and green creativity;

H5: There is a significant positive relationship between employee green behaviour and green creativity.

The following research model (Figure 1) is suggested based on the above hypothesis.



Note: GV – green value; GSV – green shared vision; EGB – employee green behaviour; GC – green creativity.

Figure 1. Proposed model (source: created by authors)

2. Data and methodology

The study used a quantitative, questionnaire-based survey technique to address definite research issues. The ethical requirements for the study were met by assuring the respondents of the anonymity of their responses. Therefore, no identifying questions were included in the questionnaire. Since both the variables were measured simultaneously, a few measures were adapted to avoid problems associated with common-method variance (CMV) (Podsakoff et al., 2012). The study data were collected in two lags with 30 days between them. The overall process of data collection process took over two months. Next, the items were shuffled, in addition to using a few dummy items. Finally, as Podsakoff et al. (2012) proposed, Harman's single-factor test was conducted. A single-factor accounted for 43.80% variance. This value is lesser than the stipulated 50% (Podsakoff et al., 2012). These aspects prove the nonexistence of CMV.

2.1. Scales used

The following standardized and validated scales were used to collect data for the study:

1. *Green value:* the study used the five-item questionnaire developed by Islam et al. (2021). The scale has two subscales – environmental attitude and environmental sustainability. The original questionnaire was developed by Brown et al. (2005), a nine-item scale. Three items were excluded by Islam et al. (2021) due to low loading. The present study used this scale, which had a reliability of 0.84;
2. *Green shared vision:* Chen et al. (2015) questionnaire measured green shared vision. The questionnaire, a modified version of Jansen et al. (2008), has four items on a five-point scale. The reliability of the questionnaire by Chen et al. (2015) was 0.90;
3. *Employee green behaviour:* it was measured using the six items questionnaire developed by Bissing-Olson et al. (2012). The questionnaire has been used in various other studies (de Roeck & Farooq, 2018) and reported a reliability alpha of over 0.90;

4. *Green creativity:* the six-item scale developed by Chen and Chang (2013) was used to measure green creativity. The scale reported a reliability of 0.82. Earlier studies (Hameed et al., 2022) have also used this scale;
5. *Control variables:* Since earlier studies (for instance, Hameed et al., 2022; Lamm et al., 2015) recommended that respondents' demographics like gender, age, type of occupation, experience (overall and current), and education level were associated with environmental performance, they were included as control variables.

All the scales had five points ranging between strongly agree and strongly disagree. The questionnaire (in English and in Arabic) was administered to the respondents over *Google Docs*. Members of various social media groups were invited to respond. This collection of data was used to ensure maximum reach among the respondents. This random data collection process yielded 453 responses over two months. As data collection was online, and responses to all items were obligatory, no response warranted rejection. The demographic profile is presented in Table 1.

2.2. Sampling adequacy

Krejcie and Morgan (1970) provided a table about the quantum of a representative sample against the overall population, which was revised by Bartlett et al. (2001). According to this table, a sample size of 384 is adequate for over one million population. It was further stipulated that with an increase in population, the sample size increase diminishes and is constant over 380. Further, Suskie (1996, p. 28) stipulates a minimum sample of 364 for a sampling error of 5%, which was also supported by Gill et al. (2010). Simon (2010) suggests this as a "golden standard". Various earlier studies have accepted this stipulation (Kahtani & Sulphey, 2022; Salim et al., 2020; Sandhya & Sulphey, 2019, 2021). Thus, the sample size of

Table 1. Demographics (source: created by authors)

Demographic details		Number	Per cent
Citizenship	Saudi	412	90.9
	Expatriate	41	9.1
Gender	Male	108	23.8
	Female	345	76.2
Qualification	High school	53	11.7
	Undergraduate	45	9.9
	Graduate	197	43.5
	Postgraduate	64	14.1
	Doctorate	94	20.8
Occupation sector	Government	52	11.5
	Education	173	38.2
	Manufacturing	204	45.0
	Others	25	5.3

Note: N = 453.

453 is adequate for the conduct of structural equation modeling (SEM). Further, the Kaiser–Meyer–Olkin test measure of sampling adequacy was 0.902, and Bartlett's test of sphericity was 5407.020 (degree of freedom of 153), which had a significance of 0.000. Thus, the sample of 453 is adequate.

The minimum age of the respondents was 19, and the maximum was 70 years. The average age of the sample was 42.76 years, with a standard deviation of 9.909. The experience ranged from less than a year to 46 years. The average experience was 16.91 years, with a standard deviation of 9.47. The mean experience in the present organization was 12.32 years.

3. Results

The correlation results and descriptive statistics are presented in Table 2. The R-value from the correlation analysis shows that all the variables exhibited significant positive relationships at 0.01 level. Therefore, these findings presented in Table 2 are in the expected lines.

Table 2. Correlation results (source: created by authors)

	Green value	Employee green behaviour	Green shared vision	Green value	Mean	Standard deviation	Cronbach's alpha
Green value	1	.580*	.254*	.434*	20.96	2.81	0.846
Employee green behaviour		1	.587*	.639*	19.71	3.18	0.973
Green shared vision			1	.585*	14.08	3.02	0.894
Green creativity				1	15.68	2.66	0.845

Note: * significant 0.01 level.

Cronbach's alpha assessed the reliability of the measures. Table 2 shows that all the alpha values of the measures exceed the stipulated 0.70, proposed by Nunnally (1978), signifying good reliability.

In addition, structural SEM was also performed. As a pre-requisite for SEM, the reliability and validity analyses were done, which are presented in the following sections.

3.1. Reliability and validity

Exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) was conducted to validate the effectiveness of the measurement model and test the hypothesis. EFA is a tool that evaluates content validity, as the extracted factors represent the dimensions they measure (Floyd & Widaman, 1995). CFA determines whether a theoretical model of relationships is supported by a set of data (Brown, 2006). All items had standardized factor loadings over 0.5, and the average factor loadings were greater than 0.7 (Kline, 2016). The factor loadings, item-total correlation, and reliability scores are provided in Table 3. The values are above the thumb rules proposed by Kline (2016).

Table 3. Reliability measures and factor loadings (source: created by authors)

Indicators			Item-total correlation	EFA	CFA	Reliability
EA1	→	EA	0.987	0.778	0.811	0.864
EA2	→		0.879	0.885	0.976	
EA3	→		0.811	0.965	0.897	
EA4	→		0.876	0.744	0.833	
ES1	→	ES	0.884	0.713	0.826	0.811
ES2	→		0.825	0.744	0.857	
ES3	→		0.855	0.987	0.873	
ES4	→		0.835	0.944	0.836	
ES5	→		0.844	0.913	0.877	
ES6	→		0.768	0.877	0.835	
GV1	→	GV	0.774	0.863	0.774	0.846
GV2	→		0.758	0.768	0.873	
GV3	→		0.885	0.735	0.843	
GV4	→		0.872	0.976	0.814	
GV5	→		0.865	0.764	0.811	
GSV1	→	GSV	0.781	0.904	0.903	0.973
GSV2	→		0.876	0.816	0.805	
GSV3	→		0.879	0.804	0.885	
GSV4	→		0.908	0.866	0.883	
EGB1	→	EGB	0.935	0.914	0.833	0.894
EGB2	→		0.874	0.874	0.761	
EGB3	→		0.825	0.815	0.885	
EGB4	→		0.813	0.843	0.815	
EGB5	→		0.878	0.885	0.889	
GC1	→	GC	0.865	0.805	0.981	0.845
GC2	→		0.822	0.754	0.885	
GC3	→		0.813	0.911	0.917	
GC4	→		0.884	0.855	0.774	

Note: EFA – exploratory factor analysis; CFA – confirmatory factor analysis; EA – environmental attitude; ES – environmental sustainability; GV – green value; GSV – green shared vision; EGB – employee green behaviour; GC – green creativity.

3.2. Construct validity

Construct validity is "the degree to which a test measures what it claims, or purports, to be measuring" (Brown, 1996, p. 231). Thus it refers to how the scale measures a particular construct or psychological concept (Aiken, 1980). Examination of construct validity is a complex process, and it assesses the extent of the respondent's view of the construct (Hoyt et al., 2006).

Construct validity could be demonstrated with content analysis, correlation coefficients, and factor analysis. Two tests are considered to measure the same construct if a significant correlation exists between them. Construct validity could further include convergent and discriminant validities. While convergent validity involves "independent measurement procedures" that reflect the same or similar constructs (Campbell & Fiske, 1959, p. 81), discriminant validity requires that conceptually unrelated constructs are substantially less correlated with other constructs. It requires the contrast or variance of relationships to other constructs in the same conceptual domain or model (Hulland, 1999).

3.3. Convergent validity

Convergent validity is explained with the help of construct reliability and average variance extracted (AVE). This consistency metric reveals the mean percentage of the explained variance between a construct's items. Hair Jr. et al. (2010) state that convergent validity is assumed if the construct reliability value is higher than the AVE, which should, in turn, be over 0.50. The AVE and construct reliability, presented in Table 4, meet al. the stipulations of Hair Jr. et al. (2010). They also stipulated that the AVE must be above 0.70. Since all the stipulations are met, the internal consistency is confirmed.

Table 4. Convergent validity (source: created by authors)

Indicators			Estimate	Item reliability	Delta = 1-item reliability	AVE	Sum of estimate	Sum of error (delta)	CR
EA1	→	EA	0.811	0.658	0.342	0.777	3.517	0.891	0.933
EA2	→	EA	0.976	0.953	0.047				
EA3	→	EA	0.897	0.805	0.195				
EA4	→	EA	0.833	0.694	0.306				
ES1	→	ES	0.826	0.682	0.318	0.724	5.104	1.656	0.940
ES2	→	ES	0.857	0.734	0.266				
ES3	→	ES	0.873	0.762	0.238				
ES4	→	ES	0.836	0.699	0.301				
ES5	→	ES	0.877	0.769	0.231				
ES6	→	ES	0.835	0.697	0.303				
GV1	→	GV	0.774	0.599	0.401	0.678	4.115	1.608	0.913
GV2	→	GV	0.873	0.762	0.238				
GV3	→	GV	0.843	0.711	0.289				
GV4	→	GV	0.814	0.663	0.337				
GV5	→	GV	0.811	0.658	0.342				
GSV1	→	GSV	0.903	0.815	0.185	0.757	3.476	0.974	0.925
GSV2	→	GSV	0.805	0.648	0.352				
GSV3	→	GSV	0.885	0.783	0.217				
GSV4	→	GSV	0.883	0.780	0.220				

End of Table 4

Indicators			Estimate	Item reliability	Delta = 1-item reliability	AVE	Sum of estimate	Sum of error (delta)	CR
EGB1	→	EGB	0.833	0.694	0.306	0.702	4.183	1.489	0.922
EGB2	→	EGB	0.761	0.579	0.421				
EGB3	→	EGB	0.885	0.783	0.217				
EGB4	→	EGB	0.815	0.664	0.336				
EGB5	→	EGB	0.889	0.790	0.210				
GC1	→	GC	0.981	0.962	0.038	0.796	3.557	0.814	0.940
GC2	→	GC	0.885	0.783	0.217				
GC3	→	GC	0.917	0.841	0.159				
GC4	→	GC	0.774	0.599	0.401				

Note: CR – construct reliability; EA – environmental attitude; ES – environmental sustainability; GV – green value; GSV – green shared vision; EGB – employee green behaviour; GC – green creativity.

AVE and item loadings are used to examine convergent validity. The AVE value must be greater than 0.50 (Hair et al., 2013). Composite reliability examines the overall reliability. The AVE ranged between 0.678 and 0.796, and the composite reliability value between 0.913 and 0.940. Hair Jr. et al. (2013) and Hair Jr. et al. (2017) recommend a minimum composite reliability of 0.70. From Table 4, all the AVE and composite relivalues are over the specified ranges. Therefore, the scales can be considered valid and reliable.

3.4. Discriminant validity

Discriminant validity is the degree to which a measure does not correlate with other measures from which it is assumed to diverge (Sanchez, 1999). The details of discriminant validity are presented in Table 5. Discriminant validity involves the constructs' variances and uniqueness (Hair et al., 2013). Therefore, discriminant validity should have a relatively low correlation (Bagozzi & Kimmel, 1995). Table 5 shows that no R-value exceeds 0.70 (Anderson & Gerbing, 1988). Furthermore, all the R-values are less than the AVE's square roots (presented in the diagonal in the matrix), as proposed in the Fornell and Larcker (1981) criterion.

Table 5. Discriminant validity (source: created by authors)

Factors	EA	ES	GV	GSV	EGB	GC
EA	0.81					
ES	0.16	0.78				
GV	0.35	0.23	0.91			
GSV	0.26	0.11	0.42	0.86		
EGB	0.37	0.27	0.25	0.15	0.77	
GC	0.16	0.35	0.32	0.16	0.24	0.84

Note: EA – environmental attitude; ES – environmental sustainability; GV – green value; GSV – green shared vision; EGB – employee green behaviour; GC – green creativity.

3.5. Fit index

The details of the fit index are presented in Table 6. The fit index assesses the degree of overall fit. A robust fit echoes that the proposed model is plausible and parsimonious.

Table 6. Fit indices (source: created by authors)

Fit index	Model value	Recommended value	Reference
Goodness of fit index	0.917	> 0.900	Hair et al., 2013
Root mean square error of approximation	0.0421	< 0.050	Diamantopoulos and Siguaw, 2006
Root mean square residual	0.0441	< 0.080	Hu and Bentler, 1999
Comparative fit index	0.916	> 0.900	Hu and Bentler, 1999
Incremental fit index	0.904	≥ 0.900	Bollen, 1989
Tucker–Lewis index	0.922	≥ 0.900	Tucker and Lewis, 1973

From the Table 6, it can be observed that all stipulations for a robust model fit are met. For instance, the rule of thumb for a robust model fit should have root mean square error of approximation less than 0.08, comparative fit index, Tucker–Lewis index, and goodness of fit index scores above 0.90 (Hair et al., 2010), and root mean square residual below 0.80 (Hu & Bentler, 1999). The results presented in Table 7 show that all values are in acceptable ranges, as recommended by Hair Jr. et al. (2010), thus exhibiting robust fit. Furthermore, the fit enjoyed by the model indicates the ideality for conducting SEM.

3.6. Structural equation modeling results

SEM was carried out using *Python* software after the measurement model had been validated using statistical approaches such as EFA and CFA. SEM was used since it stipulates the causal links between the latent variables. It also defines the effects (direct and indirect) and allocates explained and unexplained variance of dependent variables. The details can be found in Table 7 and Figure 2.

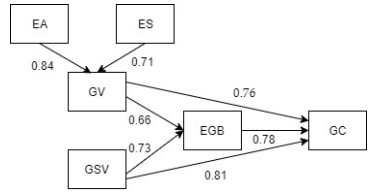
SEM was chosen as an analysis technique for this study because it can test all the hypothesized multiple relationships simultaneously and comprehensively (Hair et al., 2013). It can also assess the proposed models for predictive validity (Becker et al., 2013). Since this study encompasses multiple variables and their relationships, the ideal analysis would be SEM. The hypotheses were tested using the path analysis procedure, and the indirect effects of the constructs were tested using percentile bootstrap analysis. The *PROCESS macro* with 3800 bootstrap samples was used to estimate the indirect effects. Table 7 shows the results and the direct and indirect relationship coefficients between the constructs.

Table 7 supports all the proposed hypotheses at a 0.01 level (Hair et al., 2017). Comparison of the Beta-values helped determine the path coefficient for latent variables. A high Beta-value indicates that the predictor variable significantly impacts the dependent variable (Lleras, 2005). The robust T-values thus confirm the strength of the significance level of Beta-values (Hair et al., 2017) and the relationship between the variables. Further, the proposed model was also accepted.

Table 7. Structural equation modeling results (source: created by authors)

H1	GV	→	EGB	0.871*	3.11	Supported
H2	GSV	→	EGB	0.844*	2.76	Supported
H3	GV	→	GC	0.826*	2.78	Supported
H4	GSV	→	GC	0.837*	2.03	Supported
H5	EGB	→	GC	0.811*	2.81	Supported

Note: GV – green value; GSV – green shared vision; EGB – employee green behaviour; GC – green creativity; * p is 0.01.



Note: GV – green value; GSV – green shared vision; EGB – employee green behaviour; GC – green creativity.

Figure 2. Measurement model (source: created by authors)

The study has thus expanded the literature on green creativity and provided extranuances on understanding green behaviours. The results are discussed in the following sections.

Discussion

Organizations are now pursuing a green agenda, as they can enhance corporate image and market share. In addition, organizations that initiate green creativity and innovation could have the advantage of a resource-efficient production process. which can enhance their corporate image and market position (Chen & Chang, 2013). Further, the growing importance of environmental concerns and green creativity in organizations has drawn the attention of researchers. Organizations can achieve sustainability by implementing environmentally friendly initiatives and establishing policies, procedures, and practices that reduce their negative environmental impact. With the increasing uncertainty arising from global warming, business organizations must cultivate and reinforce their creativity to be sustainable. Further, to identify the green problems, organizational members need to be creative and provide innovative and practical green solutions.

Green behaviours, which can be either prescribed or voluntary, cause as much less environmental harm (Steg & Vlek, 2009). Examples of green behaviour involve minimizing energy consumption and reducing waste are two examples. Thus it is doing good for the environment while avoiding everything wrong (Cushman-Roisin, 2019). Furthermore, green shared vision provides organizational members with proper guidelines and ideal goals that facilitate them to overcome current challenges and successfully complete work-related tasks. Consistent with earlier empirical examinations, the present work confirms the relationship between green shared vision and green creativity and innovation (Chen et al., 2015). Furthermore,

green shared vision entails strategic planning to achieve an organization's collective environmental goals and aspirations that its employees have internalized (Chen et al., 2015).

Consistent with existing literature, the study's findings identified that green value, green shared vision, and green task motivation correlate with green creativity (Li et al., 2020). Furthering ST, the study proposes that members possessing green expertise would be encouraged to do green practices and positively influence green creativity skills, prompting them to foster green initiatives (Junsheng et al., 2020).

Implications

This work has the potential to provide both theoretical and practical implications. The following sections present a few such implications. This study contributes substantially to the literature on green beahviours by testing the relationship between environmental attitude, green vision, green shared vision, and green creativity. The findings shed further light on green behaviour in organizations, advancing the CTC (Amabile, 1997, 2013) and the ST (Clarkson, 1995). In addition, the positive association between green value, shared value, and green creativity advance the ST (Freeman et al., 2018). The study has also succeeded in having an integrated conceptual framework of the proposed theories. By demonstrating the positive relationship and the influence on green creativity of the three identified green behaviours, the study advances established and contemporary behavioural insights into industrial psychology and human and organizational behaviour.

The practical suggestions of the study are the realization that green attitudes are unique in the workplace context as it complements the environmental management systems, shared vision, environmental policies, and procedures. A shared vision inspires organizational members to increase their disposition and strive to exceed customer expectations. Such a shared vision is crucial for businesses to be successful. The study finding that green shared vision is related to creativity is of profound impact as inculcating shared vision in the employees would facilitate creativity and the resultant organizational innovation.

Limitations

Green creativity is relatively new and has not been adequately investigated empirically in SA. This study thus opens opportunities for future discussions on the concept. The current study, which focuses on advancing green creativity, was carried out at the individual level of analysis. As a result, implications at the team and organizational levels cannot be inferred. Therefore, by involving in the team and organizational level scrutiny, future researchers could broaden the scope and insights of this study. In addition, this investigation may become more plausible by looking into a wider range of variables connected to firm-level strategy, resources, and quality.

Future studies could control several variables that may impact firm-level creativity and innovation. Research scholars could also undertake qualitative and quantitative studies to understand how organizations could stimulate creativity. Further, the present study was based on a cross-sectional (with a time lag) design. Future studies could be undertaken using a longitudinal design, with samples from different nationalities or cultures. Future investigations could also consider investigating the effect of more variables like green expertise, task

motivation, environmental dynamism, and the like, which were not under the scope and purview of this study. The moderating influence of demographic factors is another plausible area of further investigation.

Furthermore, caution needs to be exercised while generalizing the study's outcomes. For example, data for this study was limited to samples from one country with a unique culture. Future research could expand the investigation's scope by including samples of different nationalities to draw a result that could be generalized across cultures.

Conclusions

According to the Kyoto Protocol, the Paris Agreement, and various other environmental accords, turning green is paramount and the best and only option for businesses to attain sustainability. This thought pattern calls for business organizations to innovate and focus on green and environment-friendly products and services. Further, organizations that transform green creativity into sustainable products and services can contribute to mitigating environmental degradation. Although previous studies have examined how green creativity affects work performance, its antecedents have generally gone unrecognized for a long time. By developing empirical insights into the distinct roles that green value, green shared vision, and employee green behaviour have in influencing green creativity, the current study aimed to fill this knowledge gap. In partial congruence with the extant literature (for example, Li et al., 2020), this study found that green value, green shared vision, and employee green behaviour are positively associated with green creativity. Most of the prior research has not examined these aspects.

The study's results and findings are based on the degrees of the individual effect sizes. These findings expand the assumptions of ST by showing the strong relationships that the identified variables have with green creativity. The findings can also help to bolster further green initiatives, which is consistent with the ST. The study supports specific antecedents and amplifies their varying relationships with green creativity, influencing the motivation for green tasks and improving green expertise, benefiting environmental dynamism. These findings challenge the conceptualization of the factors influencing green creativity, advancing the literature on green creativity. The study has thus challenged existing and conventional extrapolations and raised new issues for future empirical discussions. We encourage future research scholars and social scientists to expand further on this study.

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