

## Article

# Examining the Relationship between Green Mindfulness, Spiritual Intelligence, and Environmental Self Identity: Unveiling the Path to Green Entrepreneurial Intention

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**Abstract:** As inculcating green intention and behaviour among individuals, particularly potential entrepreneurs (students), has recently become a hot topic of discussion, it is essential to contribute to this debate by offering empirical evidence. Accordingly, the objective of this study is to examine how green mindfulness (GM) and spiritual intelligence (SPI) enhance environmental self-identity (ESI). This study also examined the role of GM and SPI in developing green entrepreneurial intention (GEI). The study investigated whether ESI could mediate the relationship between GM, SPI, and GEI. The study gathered information from 202 students at King Faisal University's Business Administration and Applied Colleges in Saudi Arabia using a self-administered questionnaire for these objectives. The study employed partial least-squares structural equation modeling to analyse the data. The study revealed some interesting findings. It was discovered that GM has a direct and significant positive association with ESI and GEI. Furthermore, it was also reported that SPI has a positive and significant connection with ESI, but no positive relationship with GEI. ESI revealed the existence of a meaningful positive relationship with GEI. Finally, when examining the mediating role played by the ESI, the study reported the inability of the ESI to mediate the relationship between GM and GEI. At the same time, it was able to fully mediate between SPI and GEI. The study provides a set of recommendations for policymakers and other stakeholders. The study is considered one of few studies investigating the key factors influencing GEI among students.

**Keywords:** students; values; mindfulness; green business; intention



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## 1. Introduction

The concept of “greening” has drawn the attention of many businesses in response to the national and international agenda of sustainable development (Sobaih et al. 2022a). Hence, governments of most countries worldwide are working to encourage their investors to engage in green business (Sobaih et al. 2022b). Unsurprisingly, the government of the Kingdom of Saudi Arabia has encouraged current and new investors to become involved in green entrepreneurship as a response to *The Saudi Vision (2030)* and green initiatives of the Saudi Leadership, such as Green Saudi and the Green Middle East Initiatives (*The Saudi Green Initiative 2023; The Saudi Vision 2030; Alshebami and Ali Seraj 2022*). However, there is limited research on how to move from strategic greening directives of the government, such as the KSA, to stimulating green entrepreneurship successfully among new and current investors. Recent research (Aliedan et al. 2023) has shown a need for more research on

green investment in Saudi Arabia, wherein the country's leadership pays more attention to greening Saudi Arabia ([The Saudi Green Initiative 2023](#)). The current research is an attempt to understand the determinants of green entrepreneurship intention (GEI), especially the role of spiritual intelligence (SP), green mindfulness (GM), and environmental self-identity (ESI) in driving this intention.

Green entrepreneurship is defined as entrepreneurial operations that produce a product and service while adhering to a process that protects the environment and eliminates environmental hazards ([Blundel and Hampton 2021](#)). Green entrepreneurship aims to achieve business goals, e.g., customer satisfaction and profit maximization, while ensuring environmental sustainability ([Cai et al. 2023](#)). Hence, governments, industry administrators and scholars have become more interested in green entrepreneurship for economic prosperity while conserving nature. [Chapman and Hottenrott \(2022\)](#) argued that green entrepreneurship is not an option for contemporary businesses, as they have to respond to environmental concerns. Modern enterprises play a crucial role in green initiatives with support from the government for a thriving economy and a livable planet, as the role of green entrepreneurship in national and international ecosystems cannot be underestimated ([Cai et al. 2023](#)). However, it was argued that entrepreneurs are more concerned about the financial returns of their businesses than environmental consequences ([Thelken and de Jong 2023](#)). Nonetheless, recent research ([Yasir et al. 2023](#)) has shown that entrepreneurs with attitudes towards green entrepreneurship are interested in green entrepreneurship.

The current research has four main research objectives. First, the study tries to test the effect of green mindfulness (GM) on green entrepreneurship intention (GEI) among university students, who are more likely to be the entrepreneurs of tomorrow. GM refers to being aware and connected to the natural environment through understanding the context and having environmental knowledge ([Chen et al. 2015](#)). There has been little research on the effect of GM in developing university graduates' GEI, albeit [Cai et al. \(2023\)](#) have examined the impact of GM on GEI in Pakistan and called for further studies in different contexts; the current study is an attempt to undertake this task. GM could assist individuals to advance a deep connection with nature and cultivate green behaviours in their daily lives ([Cai et al. 2023](#)). Hence, we expected that the GM of students as a cognitive mechanism would predict their GEI. Second, the research tests the effect of students' spiritual intelligence (SPI) on their GEI. SPI refers to an individual's ability to connect with their inner self, others, and the broader world meaningfully and transcendently ([Zohar 2001](#)). SPI was found to guide individuals' attitudes towards specific behaviour and predict entrepreneurship intention ([Safari et al. 2018](#)). However, the role of SPI in stimulating green entrepreneurship has not yet been examined. The present research takes a fresh approach to exploring the influence of SPI on GEI among university students. Third, the study examines the effect of ESI on GEI. The research draws on self-determination theory (SDT) ([Deci and Ryan 1985](#)), which states that when individuals are motivated by a sense of obligation towards a cause, such as environmental protection, the individual SPI can encourage and promote green environmental intention, such as GEI. Fourth, the study investigates the indirect involvement of ESI in the connections among GM, SPI, and GEI, which, to the best of the researchers' knowledge, has not been investigated in previous research. The research aims to answer the following research questions based on these objectives. What are the role of GM, ESI, SPI in driving the GEI of higher education students? What is the mediating effect of ESI on the relationships between the GM, SPI and GEI of higher education students?

This article is structured as follows. The theoretical framework is presented after the introduction, which shows previous studies in relation to the links between GM, SPI, ESI, and GEI (Section 2). The report then describes the study's research methodology, including data collecting and analysis methodologies (Section 3). The findings are then presented and debated (Section 4). Finally, the research implications and conclusions are offered (Sections 5 and 6).

## 2. Literature Review and Hypotheses' Development

### 2.1. Theoretical Background

Self-determination theory (SDT) is used as a theoretical framework in this study (Deci and Ryan 1985; Ryan and Deci 2000). SDT is a psychological theory that studies human motivation and well-being. SDT, first proposed in the 1980s by Edward L. Deci and Richard M. Ryan, holds that humans have fundamental psychological requirements for autonomy, competence, and relatedness, which drive motivation and impact behaviour (Al-Jubari et al. 2019).

Autonomy refers to the need for volition and self-endorsement in one's actions, competence refers to the need to feel effective and capable in one's activities, and relatedness refers to the need for connection, closeness, and meaningful relationships with others (Ryan and Deci 2000). According to SDT, when these psychological needs are satisfied, individuals are more likely to experience greater well-being, optimal development, and improved performance in various domains of life, including work, education, relationships, and health (Chiu and Chai 2020). SDT distinguishes between different types of motivation that individuals can experience, ranging from intrinsic motivation, which is driven by internal factors such as personal interest and enjoyment, to extrinsic motivation, which is caused by external factors such as rewards or social pressure (Deci and Ryan 2015). SDT suggests that intrinsic motivation is more autonomous and leads to better outcomes. In contrast, extrinsic motivation can vary in its degree of autonomy and adversely affect well-being if it is overly controlling. This theory's central notion proposes that intrinsic motivation or identified regulation, i.e., environmental self-identity, green mindfulness, and spiritual intelligence, meets individuals' basic needs (Ryan and Deci 2000; Deci and Ryan 2015) and drives their behaviours toward goal achievement, i.e., GEI. As a result, humans can aim their behaviours toward goal fulfilment, resulting in the satisfaction and enjoyment inherent in the work, i.e., GEI.

Furthermore, those with higher SI (spiritual intelligence) integrate societal values due to their view of social responsibility. They are self-motivated and energetic in performing actions, regardless of external rewards, seeking inner satisfaction and fulfilment, i.e., GEI. As a result, this study builds upon the SDT and hypothesizes that green mindfulness and spiritual intelligence can promote GEI directly, and also indirectly through environmental self-identity.

### 2.2. Hypotheses Building

#### 2.2.1. Green Mindfulness, Environmental Self-Identity, and GEI

Green mindfulness (GM) is a mindfulness practice that focuses on developing an awareness and connection with the natural environment (Brown and Kasser 2005). It entails paying attention to the current situation with a nonjudgmental and compassionate attitude toward nature, and creating a sense of oneness with the environment. (Brown and Ryan 2003). Green mindfulness has recently received more attention as a potential strategy for developing pro-environmental attitudes and behaviours (Creswell 2017). Green mindfulness has been shown in research to improve people's environmental self-identification [ESI], which is the degree to which they believe they have an ecological identity or a connection to nature (Wu and Mweemba 2010). Green mindfulness practices can increase individuals' awareness of the interconnectedness between themselves and the natural environment, fostering a sense of responsibility and care towards nature. It can also enhance individuals' emotional connection with nature, strengthening their identification with environmental values and beliefs (Glomb et al. 2011). Brown and Kasser (2005), for example, explored the impact of mindfulness on ecological self-identity. The researchers revealed that individuals who engaged in green mindfulness practices showed better identification with environmental values and pro-environmental behaviours compared to a control group. The researchers found that green mindfulness could help people establish a stronger environmental self-identity, which could lead to more pro-environmental attitudes and behaviours. Therefore, we can propose the following hypothesis:

### **H1.** *GM has a positive significant impact on ESI.*

Both GM and green entrepreneurship have gained attention as potential solutions to address environmental challenges, as they emphasize a proactive and holistic approach towards sustainability (Kroon et al. 2017; Neace et al. 2020; Ruffault et al. 2016; Liu et al. 2011; and Huang et al. 2021). GM can help individuals develop a deep connection with nature and cultivate sustainable behaviours in their everyday lives (Cai et al. 2023). Green entrepreneurship can drive innovation and create market solutions to environmental problems, contributing to a more sustainable economy (Kalyar et al. 2021). Consequently, individuals who practice green mindfulness are more likely to develop pro-environmental attitudes and behaviours and are more inclined towards engaging in environmentally sustainable entrepreneurship. Additionally, to promote green behaviour, individuals are encouraged to utilize their unique resources, such as their GM, which is the foundation of sustainable actions (Soomro et al. 2020). Drawing on SDT, individuals can engage in SDT-based interventions, which involve equipping themselves with cognitive resources (Brown and Ryan 2003), such as GM, which enable them to discover and understand environmental challenges, seek information, and generate innovative solutions for addressing pro-environmental issues. Hence, the following hypothesis can be suggested.

### **H2.** *GM has a positive significant impact on GEI.*

#### 2.2.2. Spiritual Intelligence, Environmental Self-Identity, and GEI

Spiritual intelligence is a notion that has gained more traction in recent years as a distinct type of intelligence that incorporates a person's ability to connect meaningfully and transcendently with their inner self, others, and the larger world (Zohar 2001). Spiritual intelligence entails thoroughly understanding one's values, beliefs, and life purpose, and how these relate to the more significant framework of existence (Fesharaki 2019). The expression "SPI" integrates spirituality and intelligence into a single concept (Ramachandaran et al. 2017). According to King and DeCicco (2009), SI comprises four key aspects: critical existential thinking, which entails having the capacity to consider carefully metaphysical and existential concerns such as the reality and essence of the universe, time, life, and death; personal meaning production, which entails the capacity to generate particular intentions, intent, and guidance in all mental experiences, including determining and carrying out the purpose of life; transcendental awareness, which involves understanding and appreciating the more significant and intangible dimensions of oneself, others, and the world in waking life and awareness; and conscious state expansion, which entails being able to enter and exit greater degrees of spiritual and beyond-consciousness states of mind at will. Spiritual intelligence and ESI are closely related, as they involve a person's relationship with the environment and their understanding of their role in protecting and preserving it (Khalajani and Farhangi 2017). Spiritually intelligent individuals tend to have a broader and more interconnected perspective, seeing themselves as part of a larger ecosystem and recognizing the interdependence between humans and nature (Zohar 2001). They often have a deep appreciation for the natural world and a sense of responsibility towards its preservation (Severino-González et al. 2022). Hence, we can suggest the following hypothesis:

### **H3.** *SI has a positive significant impact on ESI.*

Environmental self-identity is directly related to an individual's personal environmental values, beliefs, and behaviours (Qasim et al. 2019). It entails identifying environmental issues and being willing to take action to safeguard and conserve the natural environment (Chen et al. 2015). Individuals with higher levels of SPI are more able to see a meaningful purpose in their lives (Fesharaki 2019). They know they are responsible for their behaviours and environment (van der Werff et al. 2021). Individuals with strong self-identity are more likely to have a strong sense of responsibility for environmental protection in the setting of green entrepreneurship (Jiang et al. 2020). This is because they recognize that their actions must be ecologically responsible and tailored to the demands of society, which motivates

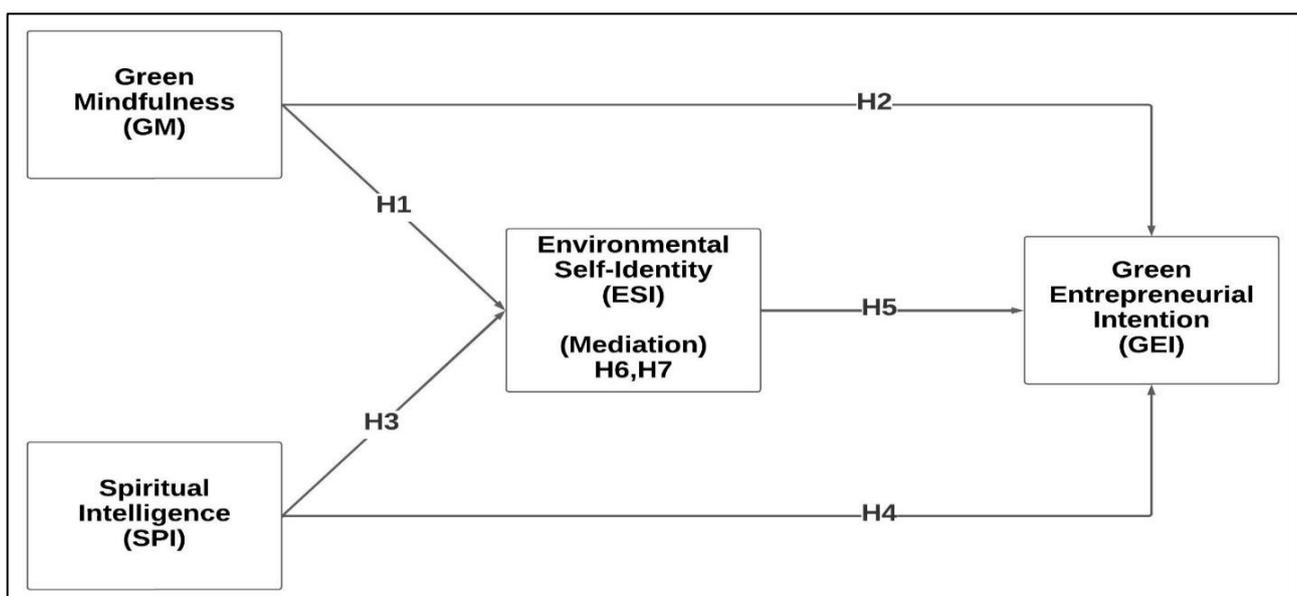
them to participate in environmental activities actively (Chen et al. 2015). SPI also enables people to see their work in a broader and more aware framework, allowing them to see intrinsic value in their efforts (Mayer 2000). This is in line with SDT (Deci and Ryan 1985; Ryan and Deci 2000), which suggests that when individuals are motivated by a sense of obligation towards a cause, such as environmental protection, SPI enhances satisfaction and pleasure derived from the activity and promotes pro-environmental intention and behaviour, i.e., GEI. Thus,

**H4.** *SPI has a positive significant impact on GEI.*

### 2.2.3. Environmental Self-Identity and GEI

In environmental psychology and sustainable business, the connection between environmental self-identity and green entrepreneurial aim has been extensively researched (Chu et al. 2021; Jiang et al. 2020; Patel et al. 2020; Kumar et al. 2023; and Lopes et al. 2023a). Environmental self-identity refers to individuals' perception of themselves as environmentally responsible or conscious (Deci and Ryan 2015). On the other hand, GEI pertains to an individual's inclination or desire to engage in entrepreneurial activities that align with environmental sustainability (Yi 2021; and Lopes et al. 2023b). Research has shown a positive association between environmental self-identity and GEI. When individuals strongly identify as environmentally responsible, they are more likely to prefer engaging in green entrepreneurial activities (Tung et al. 2017; Obschonka et al. 2015). This is because environmental self-identity reflects an individual's values, beliefs, and concerns about the environment (Fesharaki 2019), which in turn may drive their entrepreneurial intentions towards pursuing environmentally sustainable business ventures (Yi 2021; Shabeeb Ali et al. 2023). We assume that individuals with a strong sense of environmental self-identity are more motivated to engage in green tasks, leading to a higher Green Engagement Index (GEI). In other words, individuals who lack concern for environmental self-identity are less likely to achieve the desired outcomes in promoting GEI (Deci and Ryan 2015; Lopes et al. 2023a). Therefore, as depicted in Figure 1, we can propose that:

**H5.** *ESI has a positive significant impact on GEI.*



**Figure 1.** Depiction of the study's framework.

#### 2.2.4. The Mediating Role of Environmental Self-Identity

ESI can mediate the interaction between GM and GEI by providing individuals with a feeling of purpose and motivation to undertake green initiatives (Cai et al. 2023). Environmental self-identity can help individuals to recognize their potential to make a positive impact on the environment and take action towards creating a more sustainable future (Dermody et al. 2015). By connecting individuals with their environmental values, environmental self-identity can motivate them to engage in green entrepreneurship, such as starting a business that focuses on sustainability or investing in green technology (Daniel et al. 2023; Lopes et al. 2023a). Additionally, environmental self-identity can help individuals understand how their actions impact the environment, increasing their green mindfulness and encouraging them to pursue more sustainable practices (Cai et al. 2023). We believe that people with higher levels of green mindfulness are inclined to build a more solid environmental self-identity, impacting their intentions to engage in green entrepreneurship. As a result, we can present the following hypothesis:

**H6.** *ESI positively mediates the relationship between GM and GEI.*

Furthermore, ESI can mediate the connection between SPI and GEI, since it assists in helping people comprehend their place in the world and the effects of their actions on the environment (Jiang et al. 2020). By understanding their own environmental identity, individuals may be more likely to develop a strong sense of spiritual intelligence (Emmons 2000), increasing GEI (Cai et al. 2023). For example, individuals with a robust environmental self-identity may be more likely to appreciate the need for sustainability and take steps to limit their environmental effects (Cai et al. 2023). This could make them more aware of their spiritual intelligence, motivating them to pursue green entrepreneurial opportunities (Hendijani Fard et al. 2018). We assume that ESI may mediate, as individuals with higher SPI may develop a stronger ESI, leading to more positive intention towards green entrepreneurship. Consequently, we can introduce the following hypothesis:

**H7.** *ESI positively mediates the relationship between SPI and GEI.*

### 3. Research Methodology

#### 3.1. Data Collection and Participants

The persistent growth in unemployment in different regions of the world, especially emerging countries, necessitates an emphasis on promoting entrepreneurship and the small business sector. Accordingly, support for the establishment of small enterprises must go to those small green businesses that contribute to environmental protection and the sustainability of resources. There is growing pressure on youth and students to start small businesses in developing countries. University students, mainly being unemployed, tend to focus on creating small businesses that are environmentally friendly (Cai et al. 2023). Saudi Arabia has made a significant effort to establish a lively society, a prosperous economy, and an ambitious nation under the Saudi 2030 vision. This may also be achieved via developing entrepreneurship and entrepreneurial minds, particularly among potential entrepreneurs (students). Students are considered potential entrepreneurs because it is very challenging to find jobs; starting income-generating activities will be their best option. Accordingly, it has become essential to identify the key aspects contributing to encouraging these potential entrepreneurs and directing their intention and behaviour toward creating small green businesses. To this end, this study aims to investigate how green mindfulness (GM) and spiritual intelligence (SPI) enhance environmental self-identity (ESI). It also examines the role of GM and SPI in developing green entrepreneurial intention (GEI). The study further investigates whether ESI could mediate the relationship between GM, SPI, and GEI. Therefore, this study achieves the Saudi vision by identifying the critical personal factors, such as green mindfulness and spiritual intelligence, that influence potential students' values and environmental self-identity, and their effect on entrepreneurial intention.

The study is deductive and quantitative. It collects a sample of the students enrolled in various business programs (finance, information technology, human resource management, and accounting) in applied and business administration colleges affiliated with King Faisal University. The total enrolled number of students is around 1500. King Faisal University is considered one of the most prominent universities in Saudi Arabia, particularly in the eastern province; hence, the sample was selected from there. The students enrolled in these two colleges continuously receive information, training and support related to entrepreneurship and business administration; therefore, they were chosen for the study. We applied convenience sampling to select the sample of the students. Convenience sampling is an affordable way of collecting data; it provides results quickly and is easy to use. The study collected a sample of 202 respondents enrolled in various programs mentioned earlier. This sample is considered suitable according to the ten times rule for sample selection (Hair et al. 2011). The data were analyzed with the help of partial least-squares structural equation modeling (PLS-SEM), which is one of the best tools for analyzing complex models, and can also deal with small sample sizes (Hair et al. 2011).

The data were collected by employing an online survey sent via email to the respondents from January to February 2023. As the primary respondents of the study were non-English speakers, the original questionnaire and measures adopted were translated into Arabic to allow respondents to read them. A pilot study with a sample of 15 was undertaken to assess the quality of the questionnaire. The researchers discovered no issues. As a result, the link to the questionnaire was delivered to the respondents.

### 3.2. Measures of the Study

After carefully analysing the relevant literature, in this study, we utilized various indicators borrowed from prior studies. For example, in this study, we adopted measures for green mindfulness from (Cai et al. 2023). A sample statement from the green mindfulness concept is "I feel free to discuss environmental issues and problems". Further, the concept of spiritual intelligence was adopted from (King and DeCicco 2009) and an example of its measures is "I am able to define a purpose or reason for my life". The concept of environmental self-identity was also adopted from van der Werff et al. (2013), and a sample statement of the measures used is "I am the type of person who acts environmentally friendly". Finally, the construct of entrepreneurial intention measures was adopted from (Cai et al. 2023), and a sample of the statements used is "I have the firm intention to start a green venture someday". Furthermore, we have attached the questionnaire used in the study in the Appendix A.

## 4. Results

### 4.1. Demographic Information

The total number of study respondents was 202 students enrolled in business administration and applied colleges studying various business programs. While male respondents comprised about 59% of the total, female respondents comprised about 41%. Concerning the marital status of the respondents, it is to be noted that the majority of respondents (90%) identified themselves as single. In comparison, 9% were married, and 1% were unmarried or single. Further, about 94% of respondents were aged 18–24 years, 5% were 25–31 years old, and around 1% were 32–38 years old.

### 4.2. Evaluation of PLS-SEM Findings

The study used partial least-squares structural equation modelling (PLS-SEM) for data analysis and hypothesis testing. PLS-SEM is regarded as a simple and effective method for investigating complex interactions between many constructs, and estimating and forecasting models. It is also an appealing strategy because it deals with a small sample size and has many other advantages (Hair et al. 2019). To deploy PLS-SEM successfully, two steps must be completed: structural and measurement modeling (Hair et al. 2011).

#### 4.3. Measurement Model

In a PLS-SEM modeling analysis, evaluation of the measurement model is considered the first step to be executed. The measurement model assessment uses different tests to examine the indicators and constructs loadings, reliability, and validity. The main tests that have to be executed in the measurement model include the Cronbach's alpha (CA), composite reliability (CR), average variance extracted (AVE), and variance inflation factor (VIF). When examining the indicators' loadings, it is recommended that indicators have loading values of 0.70 and above; this indicates the indicator's ability to explain about 50% of the variance, which means better reliability (Sarstedt et al. 2017). Despite the significance of recommending a 0.70 value as a threshold for the indicator's loading, it is still advised that values less than 0.70 should not be removed unless their removal guarantees an increase in the composite reliability level.

Furthermore, it is recommended that loading values remain between 0.40 and 0.70 (Fan et al. 2021; Fatoki 2022). The findings in Table 1 reveal good indicators of loading reliability. For the internal consistency and reliability of the constructs used in the study, the CR and CA values must be between 0.70 and 0.95 to ensure better reliability and validity (Hair et al. 2017). The findings shown in the table indicate that the desired threshold is achieved.

**Table 1.** Reliability, convergent validity and multicollinearity.

Items	Loadings	Cronbach's Alpha	Composite Reliability	Average Variance Extracted	Variance Inflation Factor
<b>Green Entrepreneurial Intention</b>		0.925	0.929	0.728	
GEI1	0.820				2.472
GEI2	0.812				3.121
GEI3	0.874				3.503
GEI4	0.896				3.634
GEI5	0.874				3.454
GEI6	0.841				3.000
<b>Environmental Self-Identity (ESI)</b>		0.876	0.879	0.801	
ESI1	0.868				2.190
ESI2	0.925				3.029
ESI3	0.892				2.359
<b>Green Mindfulness</b>		0.799	0.805	0.499	
GM1	0.702				1.818
GM2	0.713				1.808
GM3	0.749				1.593
GM4	0.625				1.360
GM5	0.692				1.490
GM6	0.752				1.666
<b>Spiritual Intelligence (SPI)</b>		0.942	0.943	0.504	
SP10	0.696				2.062
SP11	0.725				2.492
SP12	0.739				2.314
SP13	0.654				1.904
SP14	0.741				2.619
SP15	0.685				2.451
SP16	0.787				2.787

**Table 1.** *Cont.*

Items	Loadings	Cronbach's Alpha	Composite Reliability	Average Variance Extracted	Variance Inflation Factor
SP17	0.693				2.524
SP18	0.712				2.496
SP19	0.732				2.239
SP20	0.671				1.956
SP22	0.745				2.613
SP23	0.695				2.222
SP24	0.682				2.086
SP4	0.701				2.528
SP7	0.692				2.333
SP8	0.742				2.766
SP9	0.675				2.303

Source: Primary data.

Furthermore, the AVE test should be examined; it is used to examine the study's convergent validity. The suggested value for AVE is 0.50 or above (Sarstedt et al. 2017). As per the AVE reported in Table 1, the AVE values are accepted and meet the recommended threshold. Finally, the Multicollinearity is tested using the VIF test that discloses the correlation intensity among the study's exogenous variables. The study has no collinearity if the AVE values are less than 5 (Hair et al. 2019).

Examining variable uniqueness is also a crucial step. As a result, we applied the Fornell and Larcker (1981) test. Table 2 shows the findings of this study, which suggest sufficient discriminant validity.

**Table 2.** Fornell–Larcker Criterion.

	GEI	ESI	GM	SPI
GEI	0.853			
ESI	0.568	0.895		
GM	0.639	0.490	0.707	
SPI	0.556	0.626	0.535	0.710

Source: Primary data.

In addition, we looked at the extent to which a construct is empirically distinct from other constructs in the structural model using the Heterotrait–Monotrait Ratio (HTMT), a more accurate test (Hair et al. 2019), and our findings were acceptable; no values in Table 3 were greater than 0.90, meaning that no discriminate values occurred among the constructs of the research.

**Table 3.** Heterotrait–Monotrait Ratio (HTMT).

	GEI	ESI	GM	SPI
GEI				
ESI	0.628			
GM	0.727	0.582		
SPI	0.585	0.683	0.616	

Source: Primary data.

#### 4.4. Structural Model

The structural model was tested when the measurement model was completed. Table 3 displays the results of the correlations and hypotheses examined, and other significant tests.

Table 4 discloses the findings of the tested hypothesis in the study. We begin with (H1), which reported a positive and significant connection between GM and ESI among the respondents of the study ( $\beta = 0.217, p < 0.05$ ). The table further reveals the effect size ( $F^2$ ) for the connection between GM and ESI is 0.059, indicating a small effect (Cohen 1988). The t-value for the GM and ESI relationship reveals that 2.187 of the variance in ESI can be explained by GM. Table 1 further shows the findings of (H2), which reported a positive and significant connection between GM and GEI among the respondents of the study ( $\beta = 0.423, p < 0.05$ ). The table further reveals the effect size ( $F^2$ ) of the connection between GM and GEI is 0.246, indicating a medium effect (Cohen 1988). The t-value for the GM and GEI relationship reveals that 5.531 of the variance in GEI can be explained by GM. The results of (H3) also revealed a positive and significant relationship between SPI and ESI among the study’s respondents ( $\beta = 0.510, p < 0.05$ ). The table further indicates the effect size ( $F^2$ ) for the connection between SPI and ESI as 0.324, confirming a significant effect (Cohen 1988). The t-value for the SPI and ESI relationship discloses that 4.706 of the variances in ESI can be explained by SPI. Concerning (H4), which examined the relationship between SPI and GEI, the results revealed that there was no positive relationship between the SPI and ESI ( $\beta = 0.170, p > 0.05$ ). The table further shows the effect size ( $F^2$ ) for the connection between SPI and GEI is 0.032, and confirms the presence of a small effect (Cohen 1988). The t-value for the SPI and ESI relationship reported a low value of 1.581, confirming the rejection of the alternative hypothesis.

Table 4. Hypothesis testing.

Hypotheses	Association	Coefficient ( $\beta$ )	t-Value	p-Value	Decision	R <sup>2</sup>	F <sup>2</sup>	Q <sup>2</sup>
H1	GM→ESI	0.217	2.187	0.029	Accepted		0.059	
H2	GM→GEI	0.423	5.531	0.000	Accepted		0.246	
H3	SPI→ESI	0.510	4.706	0.000	Accepted	ESI = 0.426 GEI = 0.509	0.324	GEI = 0.358 ESI = 0.324
H4	SPI→GEI	0.170	1.581	0.114	Rejected		0.032	
H5	ESI→GEI	0.254	2.329	0.020	Accepted		0.076	
<b>Mediation Analysis</b>								
H6	GM→ESI→GEI	0.055	1.324	0.186		No mediation		
H7	SPI→ESI→GEI	0.130	2.484	0.013		Full mediation		

Source: Primary data.

(H5) was investigated to examine the relationship between ESI and GEI. The findings showed that there was a positive and significant relationship between ESI and GEI ( $\beta = 0.254, p < 0.05$ ). The table further reveals the effect size ( $F^2$ ) of the connection between ESI GEI to be 0.076, and confirms the presence of a small effect (Cohen 1988). The t-value for the ESI and GEI relationship showed that 2.329 of the variance in the GEI can be explained by ESI. (H6) was investigated to examine if ESI can mediate the relationship between GM and GEI. It was found that ESI does not mediate the connection between the previously mentioned constructs ( $\beta = 0.055, p > 0.05$ ). Furthermore, hypothesis (H7) was investigated to check if SPI and GEI can be mediated by ESI, and the result found was interesting. The findings of (H7) revealed the ability of ESI to fully mediate the relationship between SPI and GEI ( $\beta = 0.130, p < 0.05$ ). Concerning the R<sup>2</sup>, which is the coefficient of determination, it was observed that GM and SPI could predict 0.426 of the variance in the ESI. Additionally, GM, SPI, and ESI could predict 0.509 of the variance in GEI, which is considered substantial prediction. Lastly, the Q<sup>2</sup> was provided, and shows the predictive relevance of the model of the study. Table 2 shows that the Q<sup>2</sup> values are all above zero, showing that the model of the study has enough predictive relevance (Hair et al. 2019; Alshebami 2023).

We also examined common method bias (CBM) using a Harman’s single-factor test, and found that the CMB value was 39%, which is less than 50%, indicating the absence of

any common method bias (Podsakoff et al. 2003; Al Shammre et al. 2023). Figure 2 shows the study's path coefficients, loadings, and other values.

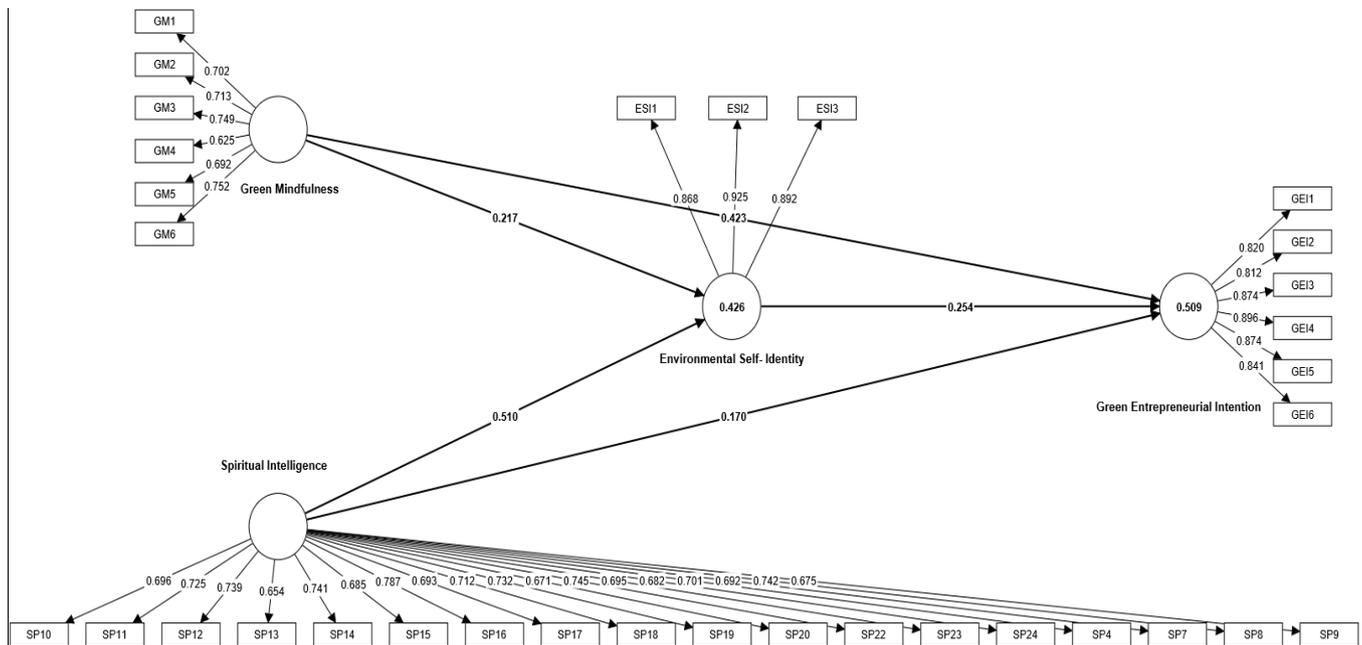


Figure 2. Path coefficients. Source: Primary data.

### 5. Discussion

Green entrepreneurship has increasingly drawn the attention of decision makers, business leaders and scholars since the initiation of the United Nations’ sustainable development goals (Aliedan et al. 2023). The importance of green entrepreneurship in promoting long-term economic development cannot be overstated (Kalyar et al. 2021). Understanding the drivers of GEI among higher education students who will be future entrepreneurs is therefore critical for fostering green entrepreneurship. This study investigates the direct influence of GM and SI on GEI, and the indirect effect via ESI. The results revealed that GM positively and significantly influenced ESI and GEI. These results confirm that students’ environmental knowledge, awareness, and connection to the natural environment contributed significantly to their ESI and GEI. These findings also demonstrate that GM can foster a sense of responsibility and care towards nature, enhance individuals’ emotional connection with nature, and develop a stronger identification with environmental values and beliefs (Glomb et al. 2011). The results support the work of Cai et al. (2023), who identified a direct influence of GM on GEI among university students in Pakistan.

The results showed that SPI has a significant positive effect on ESI. This finding means that the SPI of students is closely related to their ESI. When students connect with others meaningfully and transcendently (Zohar 2001), they recognize themselves as a part of the ecosystem, and understand the association between nature and the environment. They have a sense of responsibility towards the conservation of the environment. On the other hand, the results failed to confirm a significant positive relationship between ESI and GEI. Students’ current level of SPI has an effect on GEI, but this effect is not significant. This finding means that the students’ present spirituality and intelligence levels did not predict their GEI. There could be other factors needed to cause such an effect, e.g., ESI. Hence, the results showed that ESI fully mediates the relationship between SPI and GEI. SEI can help students develop an understanding of how their actions have an impact on the environment and enhance their SPI for promoting GEI. However, ESI was found to have no mediating role in the connection between GM and GEI. Despite there was direct effect of GM and ESI on GEI, the results of the mediation analysis did not confirm any mediating effect of ESI on the relationship between GM and GEI.

The results can be used to examine the new model of GEI determinants, including GE, SPI and ESI. The research examined these factors' direct effects on university students' GEI. Despite recent research (Cai et al. 2023) that has confirmed the direct impact of GM on GEI, the current research has examined the role of factors such as SPI and ESI in simulating the GEI of university students. Recent research (Cai et al. 2023; Yasir et al. 2023) has examined the mediating effects of green intrinsic motivation and green attitudes on behaviours exhibited to achieve green/sustainable entrepreneurship. Nonetheless, the role of ESI has not yet been examined, to the best of our knowledge; the current research confirmed the direct effect of ESI on GEI.

Additionally, ESI was found to have a fully mediating role in the link between SPI and GEI. Hence, ESI can control the relationship between SPI and GEI. ESI fully explains the relationship between SPI and GEI. This reflects the crucial role of ESI in the relationships mentioned above, which can be changed thanks to the existence of ESI. This also means that in order to stimulate the GEI of students, ESI must first exist to enhance the effect of SPI on GEI. Students with high-level ESI have a higher level of GEI, even if they do not exhibit SPI. On the other hand, the results did not confirm the mediating role of ESI in the link between GE and GEI. ESI failed to change the positive significant effect of GE on GEI.

## 6. Conclusions

Green businesses have become of the utmost importance globally among various stakeholders such as environmental agencies, governments, academicians, etc. Hence, it has become essential to inculcate the concept of greening among individuals, especially young people, and identify the required antecedents for developing green intentions and behaviours. Accordingly, this article aims to contribute to the development of green entrepreneurial intention by measuring how green mindfulness (GM) and spiritual intelligence (SPI) enhance environmental self-identity (ESI). It also examined the role of GM and SPI in developing green entrepreneurial intention (GEI). The study investigated whether ESI could mediate the relationship between GM, SPI, and GEI.

### 6.1. Main Results

As a result, exciting findings emerged. It was found that GM has an appositive relationship with ESI and with GEI. Furthermore, SPI was reported to have a positive relationship with ESI, while no association was reported with GEI. Additionally, ESI was reported to have a positive relationship with GEI. Furthermore, ESI could not mediate the relationship between GM and GEI, but could mediate the relationship between SPI and GEI.

### 6.2. Theoretical Implications

This is one few studies focusing on the critical concepts of green mindfulness, green intention, environmental values, and spiritual intelligence. The current research contributes to the vital role of university graduates in promoting green entrepreneurship and ensuring sustainable economic development. The present study argues that university graduates are critical factors in green entrepreneurship, which is one of the primary keys to advancing national green initiatives such as Green Saudi. Hence, understanding the factors that affect their GEI is essential. The current research showed that to create GEI, university education systems, including university incubators (Aliedan et al. 2022; Ayad et al. 2022), must promote environmental information and knowledge among university students. Workshops and training sessions on environmental issues are encouraged, since they can enhance students' environmental knowledge and ESI. It is further noted that this research provides a new conceptual model that reports the main factors contributing to the development of green entrepreneurship among students or so-called potential entrepreneurs. This research offers the possibility of integrating theories and the literature from various disciplines, including psychology, environmental studies, and entrepreneurship, to completely clarify

the interplay between green mindfulness, entrepreneurial aims, environmental self-identity, and spiritual intelligence.

### 6.3. Practical Implications

As indicated earlier, this is considered one of few research papers focusing on developing green intention among potential entrepreneurs in a developing country such as Saudi Arabia. Accordingly, it provides a solid basis for educational institutions and Saudi policymakers to pay greater attention to ESI, since it directly affects the GEI of students and has a full mediating effect on the link between SPI and GEI. Furthermore, the study's findings will help to shape the development of support services such as training and a curriculum in order for aspiring students to become potential entrepreneurs. It can direct the creation of mentorship programs, networking opportunities, and access to resources specifically for green entrepreneurship. These agencies can advise and support students who want to create environmentally responsible enterprises. Accordingly, this article is considered an important outcome as it provides policymakers with new exciting findings that can help them make the right decisions about developing a green mentality among students, and can also provide the necessary entrepreneurial ecosystem for them. This article contributes to the available literature by offering practical and theoretical insights into the role of critical personal assets, namely green mindfulness and spiritual intelligence, in enhancing individuals' self-identity, ultimately leading to developing green entrepreneurial intention. Linking green mindfulness and spiritual intelligence with students' environmental self-identity can profoundly impact their entrepreneurial intention. In other words, by cultivating awareness and connection to the natural world, students can better understand the importance of sustainability and environmental stewardship. This can lead to a greater sense of purpose, and to motivation to create businesses that prioritize eco-friendly practices and contribute positively to the planet.

Additionally, incorporating spiritual intelligence into this equation can help students tap into their inner wisdom and intuition, allowing them to make more conscious decisions that align with their values and beliefs. By integrating these elements into their education, students can develop a strong sense of identity as environmentally conscious entrepreneurs committed to positively impacting the world. This benefits the planet and creates opportunities for innovative business ventures prioritizing sustainability and social responsibility. Ultimately, linking green mindfulness, spiritual intelligence, and environmental self-identity can inspire students to become change-makers dedicated to creating a more sustainable future for all.

### 6.4. Limitations and Future Lines of Investigation

Despite providing a novel, unique model with fascinating results discovered in a developing country with few previous investigations, the study has some drawbacks. For example, the study employs a limited sample size, which may restrict the generalizability of the findings. It also focuses on a single university and employs a cross-sectional strategy. As a result, future studies should use moderators such as country culture and institutional support. It is also advised that the sample size be enlarged and the findings be compared to those of other countries. Future studies could rely on another type of probability sampling to ensure less bias in the results.

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**Conflicts of Interest:** The authors declare that they have no conflict of interest.

## Appendix A. Questionnaire

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Gender:

Male

Female

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Marital Status:

Married

Single

Divorced

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Age:

18–24

25–31

32–38

Above 38

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### Green mindfulness (GM)

I feel free to discuss environmental issues and problems.

I am encouraged to express different views concerning environmental issues and problems.

I pay attention to what is happening if unexpected environmental issues and problems arise.

I am inclined to report environmental information and knowledge that have significant consequences.

I am rewarded if I share and announce new environmental information and knowledge.

I know what is readily available for consultation if unexpected environmental issues and problems arise.

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### Green entrepreneurial intentions (GEI)

I am ready to do anything to be an entrepreneur who promotes environmentalism.

My professional goal is to be a green entrepreneur.

I will make every effort to start and run my own venture that promotes environmentalism.

I am very determined to create a venture that promotes environmentalism in the future.

I have very seriously thought of starting a firm that promotes environmentalism in some way.

I have the firm intention to start a green venture someday.

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### Environmental Self-Identity (ESI)

I am the type of person who acts environmentally friendly.

Acting environmentally friendly is an important part of who I am.

I see myself as an environmentally friendly person.

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### Spiritual intelligence (SI)

I have often questioned or pondered the nature of reality.

I recognize aspects of myself that are deeper than my physical body.

I have spent time contemplating the purpose or reason for my existence.

I am able to enter higher states of consciousness or awareness.

I am able to deeply contemplate what happens after death.

It is difficult for me to sense anything other than the physical and material. (R)

My ability to find meaning and purpose in life helps me adapt to stressful situations.

I can control when I enter higher states of consciousness or awareness.

I have developed my own theories about such things as life, death, reality, and existence.

I am aware of a deeper connection between myself and other people.

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I am able to define a purpose or reason for my life.  
 I am able to move freely between levels of consciousness or awareness.  
 I frequently contemplate the meaning of events in my life.  
 I define myself by my deeper, non-physical self.  
 When I experience a failure I am still able to find meaning in it.  
 I often see issues and choices more clearly while in higher states of consciousness/awareness.  
 I have often contemplated the relationship between human beings and the rest of the universe.  
 I am highly aware of the nonmaterial aspects of life.  
 I am able to make decisions according to my purpose in life.  
 I recognize qualities in people which are more meaningful than their body, personality, or emotions.  
 I have deeply contemplated whether or not there is some greater power or force (e.g., god, goddess, divine being, higher energy, etc.).  
 Recognizing the nonmaterial aspects of life helps me feel centered.  
 I am able to find meaning and purpose in my everyday experiences.  
 I have developed my own techniques for entering higher states of consciousness or awareness.

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