

The Role of Character Strengths in Shaping Sustainable Orientation: Insights from Women Entrepreneurs

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ABSTRACT:

Purpose: This study investigates the impact of character strengths on sustainable orientation (SO) among women entrepreneurs. By integrating psychological attributes with sustainability-driven business practices, the research highlights key personal traits that influence ethical and responsible entrepreneurship.

Methodology: A quantitative research design was employed using primary data from 350 women entrepreneurs across diverse industries. Structural equation modelling (SEM) was applied to examine the direct effects of character strengths on sustainable orientation, along with moderation effects of education and business experience.

Findings: The results indicate that strengths associated with wisdom (perspective, creativity), courage (perseverance, bravery), justice (fairness, leadership), and temperance (self-regulation, prudence) have a significant positive impact on SO. In contrast, humanity (kindness, social intelligence) and transcendence (hope, spirituality) demonstrate weaker or non-significant relationships. Furthermore, education level and entrepreneurial experience moderate these relationships, reinforcing the role of knowledge and exposure in sustainability adoption.

Implications: The study provides theoretical contributions by linking character strengths theory with sustainability-oriented entrepreneurship. It also offers practical implications for policymakers, educators, and business practitioners by emphasizing the importance of psychological capacity-building programs for fostering sustainability in entrepreneurial ventures.

Originality/Value: This study extends existing literature by providing empirical evidence on how intrinsic personal strengths shape sustainability-driven decision-making among women entrepreneurs, an underexplored area in sustainable entrepreneurship research.

Keywords: Character strengths, Sustainable orientation, Women entrepreneurs, Ethical leadership, Resilience, Structural equation modelling

1. Introduction

Sustainability has become an integral part of modern business practices; particularly as global environmental and social challenges intensify. Entrepreneurs, as key drivers of economic innovation, are uniquely positioned to integrate sustainability into their business models. While much of the existing literature focuses on external drivers, such as regulatory pressures, stakeholder demands, and financial incentives, an emerging body of research highlights the psychological attributes that shape sustainability-oriented decision-making (Hörisch et al., 2015; York & Venkataraman, 2010). Entrepreneurs operate in highly uncertain and complex environments, where their personal values, ethical foundations, and cognitive traits play a crucial role in shaping business strategies (Frese & Gielnik, 2014). However, despite growing recognition of psychological determinants in entrepreneurship, limited research has examined how specific character strengths influence sustainability adoption.

Character strengths are positive personality traits that contribute to ethical leadership, resilience, and strategic foresight (Peterson & Seligman, 2004). These strengths, which encompass wisdom, courage, justice, temperance, humanity, and transcendence, are associated with higher adaptability, value-driven decision-making, and a long-term strategic mindset (Harzer & Ruch, 2013). Entrepreneurs with strong character strengths tend to prioritize ethical leadership and integrate sustainability as a core value, rather than as a reaction to external pressures (Doh & Quigley, 2014). However, while character strengths have been widely studied in leadership and organizational behavior, their direct influence on an entrepreneur's sustainability orientation remains underexplored.

Sustainable orientation refers to an entrepreneur's commitment to embedding environmental and social concerns into business operations beyond financial performance (Kuckertz & Wagner, 2010). Entrepreneurs with a high sustainability orientation are more likely to implement green business practices, ethical sourcing, and community-driven initiatives, even in the absence of regulatory pressures (Parrish, 2010). Previous studies suggest that individual personality traits contribute to sustainability-driven entrepreneurship, but they largely rely on broad trait theories, such as the Big Five Personality Model, without considering specific strengths that directly influence sustainability choices (Obschonka & Stuetzer, 2017). This study seeks to fill this gap by analyzing how different character strengths impact sustainable orientation, particularly among women entrepreneurs, who have been shown to demonstrate greater ethical leadership and social responsibility compared to their male counterparts (Brush et al., 2019; Eddleston & Powell, 2012).

Existing research on sustainable entrepreneurship has predominantly focused on financial and market-based incentives, often overlooking the intrinsic psychological attributes that drive sustainability choices (Hörisch et al., 2015). While studies acknowledge the role of values-driven entrepreneurship, they lack an empirical framework to identify which character strengths contribute to sustainability-oriented thinking (Shepherd & Patzelt, 2011). Given that sustainability requires long-term vision, ethical leadership, and adaptability, character strengths such as wisdom, courage, prudence, and fairness are likely to play a crucial role (Maak & Pless, 2006). However, empirical research testing these relationships remains scarce, especially in the context of women entrepreneurs, who often balance ethical leadership with business growth considerations (Dacin et al., 2010).

This study seeks to address these gaps by examining the relationship between character strengths and sustainable orientation, focusing on which specific strengths contribute most significantly to sustainability-driven entrepreneurship. By doing so, this research contributes to positive psychology in entrepreneurship, advancing Character Strengths Theory (Peterson & Seligman, 2004) within the context of sustainability adoption. Moreover, this study provides practical insights for entrepreneurship training programs, highlighting the importance of psychological development in fostering sustainability-driven business leaders.

2. Research Objectives

This study aims to investigate the psychological foundations of sustainable orientation among women entrepreneurs by focusing on character strengths as a key determinant. Specifically, it seeks to:

1. Examine the influence of character strengths on the sustainable orientation of women entrepreneurs.
2. Identify which specific character strengths (e.g., wisdom, courage, temperance, prudence, fairness, leadership, and creativity) are most strongly associated with sustainable orientation.
3. Explore the role of demographic factors (e.g., age, education, industry type) in shaping sustainability orientation.

3. Hypotheses Development

Based on the theoretical framework and existing literature, the following hypotheses are proposed:

- H1: Character strengths have a positive and significant influence on sustainable orientation among women entrepreneurs.
- H2: Specific character strengths, such as wisdom, courage, prudence, fairness, and leadership, are more strongly associated with sustainable orientation than others.
- H3: Demographic variables (age, education, industry type) moderate the relationship between character strengths and sustainable orientation, influencing the strength of the effect.

2. Literature Review

The relationship between psychological traits and entrepreneurship has gained increasing attention in recent years, particularly in the context of sustainable business practices. While prior research has explored external factors such as market incentives, regulatory frameworks, and stakeholder pressures, an emerging body of literature suggests that individual personality traits play a crucial role in shaping sustainability-driven business decisions (Hörisch et al., 2015; York & Venkataraman, 2010). Entrepreneurs operate in high-risk and dynamic environments, where their personal attributes—such as resilience, ethical judgment, and strategic foresight—significantly impact the way they engage with sustainability challenges (Frese & Gielnik, 2014). Recent studies emphasize that psychological characteristics, including entrepreneurial passion, mindfulness, and ethical commitment, shape sustainability practices (Naderi et al., 2022; Avotra et al., 2023). Despite this growing recognition, the influence of character strengths on sustainability orientation remains underexplored.

2.1 Character Strengths in Entrepreneurship

Character strengths are defined as positive psychological traits that influence an individual's cognition, emotions, and behaviors in ways that contribute to optimal functioning and ethical decision-making (Peterson & Seligman, 2004). The VIA Classification of Strengths and Virtues, developed by Peterson and Seligman (2004), identifies twenty-four universal character strengths categorized under six broad virtues: wisdom, courage, humanity, justice, temperance, and

transcendence. These strengths influence how individuals process information, make strategic decisions, and navigate ethical dilemmas (Harzer & Ruch, 2013).

Within the entrepreneurship domain, specific character strengths have been linked to innovative thinking, risk-taking, and long-term vision (Baum & Locke, 2004). Creativity and curiosity help entrepreneurs identify new market opportunities and develop sustainable business models, while perseverance and zest contribute to their ability to overcome setbacks and maintain long-term commitments (Hmieleski & Carr, 2008). Moreover, leadership and integrity play a fundamental role in shaping trust-based relationships with employees and stakeholders, aligning with sustainability-driven entrepreneurship (Doh & Quigley, 2014).

Although research on character strengths in leadership and workplace performance is well established (Harzer & Ruch, 2013), its application in sustainable entrepreneurship is still developing. Recent research suggests that entrepreneurs who exhibit higher self-awareness and adaptability are more likely to integrate sustainability into their business strategies (Wiklund et al., 2019). Studies on psychological capital (PsyCap) in entrepreneurship further reinforce that individuals with high optimism, resilience, and hope engage in long-term sustainability commitments (Newman et al., 2022). However, there is still a lack of empirical studies directly linking character strengths to sustainability orientation, particularly in women entrepreneurs.

2.2 Sustainable Orientation in Entrepreneurship

Sustainable orientation refers to an entrepreneur's commitment to incorporating environmental and social concerns into business strategies beyond financial performance objectives (Kuckertz & Wagner, 2010). Entrepreneurs with strong sustainability orientation tend to prioritize long-term environmental well-being, ethical supply chain management, and community-driven business initiatives, even when external pressures for sustainability are minimal (Parrish, 2010). Recent studies suggest that sustainability-oriented entrepreneurs adopt digital and technological innovations to enhance sustainable impact, such as green AI technologies and circular business models (Dangelico et al., 2022).

Prior research on sustainability-driven entrepreneurship has largely focused on external influences, such as corporate social responsibility (CSR) policies, consumer preferences, and government regulations (Hörisch et al., 2015). However, emerging studies suggest that internal psychological drivers, such as ethical leadership, personal values, and self-regulation, play an equally significant role in determining an entrepreneur's commitment to sustainability (Shepherd & Patzelt, 2011). Entrepreneurs who internalize sustainability as part of their core values are more likely to implement environmentally responsible innovations, regardless of short-term financial trade-offs (Hockerts & Wüstenhagen, 2010). Studies have also found that entrepreneurs with higher levels of emotional intelligence and moral identity are significantly more inclined toward sustainability-driven decision-making (Carmeli et al., 2020).

While scholars have examined the role of broad personal values in sustainability adoption, they have not sufficiently explored which individual-level strengths contribute most to a sustainability-oriented mindset. Given that character strengths influence long-term strategic planning, ethical leadership, and resilience, it is likely that these psychological traits serve as key enablers of sustainable business practices.

2.3 Linking Character Strengths to Sustainable Orientation

Entrepreneurs with high character strengths are more likely to adopt sustainability-oriented strategies, as these traits influence long-term ethical decision-making, stakeholder engagement, and pro-environmental leadership (Maak & Pless, 2006). Several character strengths appear to have a direct impact on sustainability-driven entrepreneurship. Wisdom-based strengths, such as creativity, curiosity, and perspective, enable entrepreneurs to explore sustainable business models and develop green technologies (Amorós et al., 2019). Courage-based strengths, including bravery, persistence, and zest, provide the resilience necessary to implement sustainability initiatives in uncertain and competitive markets (Shepherd & Patzelt, 2011). Recent studies further reinforce that entrepreneurs with stronger cognitive flexibility and adaptability are more likely to transition toward green business models (Laskovaia et al., 2021).

Justice and humanity-based strengths, such as leadership, fairness, and kindness, influence corporate social responsibility (Pless, 2007). Entrepreneurs who exhibit high fairness and kindness are more likely to foster inclusive work environments and ethical supply chains, which are essential for sustainable business practices (Maak & Pless, 2006). More recent research has emphasized that women entrepreneurs with high social intelligence and fairness orientations are particularly influential in community-based sustainable ventures (Xie & Lv, 2023). Temperance-based strengths, such as self-regulation and prudence, ensure long-term planning and sustainability integration into core business strategies (Lumpkin & Brigham, 2011).

Despite these emerging insights, empirical studies explicitly linking character strengths to sustainability orientation are limited. Most prior research has not tested which specific strengths contribute most significantly to sustainability adoption, particularly in the context of women entrepreneurs, who often balance ethical leadership with business growth

(Dacin et al., 2010). This study aims to provide a comprehensive analysis of how different character strengths influence sustainable orientation and offers empirical validation for these theoretical assumptions.

2.4 Research Gap and Contribution

While prior research has established that entrepreneurs' values and ethical orientations play a role in sustainability adoption, limited empirical studies have investigated how specific character strengths influence sustainable orientation (Shepherd & Patzelt, 2011). This study contributes to the literature by bridging psychology and sustainability research through the integration of Character Strengths Theory, providing a psychological explanation for sustainability-oriented entrepreneurship. Unlike previous research on broad personality traits, this study offers a more detailed analysis of which strengths are most influential in sustainability decision-making. Additionally, by identifying key strengths that drive sustainability orientation, this study informs entrepreneurial training programs, policymaking, and leadership development initiatives.

3. Methodology

This study employs a quantitative research design to examine the relationship between character strengths and sustainable orientation among women entrepreneurs. Given the nature of the research, a survey-based primary data collection approach was used, followed by structural equation modeling (SEM) analysis to test the hypothesized relationships. The study adopts a cross-sectional research design, collecting data from women entrepreneurs across multiple industries. The target population consists of women-led small and medium-sized enterprises (SMEs) operating in manufacturing, fashion, and food sectors, as these industries have significant environmental and social impact, making them relevant for sustainability research.

A non-probability purposive sampling strategy was employed to identify women entrepreneurs actively engaged in business operations for at least three years. To ensure diversity and representation, data were collected from entrepreneurs based in Gujarat, Maharashtra, and Karnataka, capturing perspectives from different regional business ecosystems. The final sample size comprises 350 respondents, which aligns with recommendations for SEM-based studies requiring at least 10–15 respondents per observed variable (Hair et al., 2019). Data were collected through a structured online questionnaire, supplemented by in-person survey administration to enhance response accuracy. The questionnaire link was distributed through entrepreneurial associations, women's business networks, and startup incubators, ensuring access to a relevant respondent pool. To improve the response rate, reminders were sent, and confidentiality was assured. The final dataset included valid responses from 350 participants, after eliminating incomplete surveys and outliers using Mahalanobis distance analysis, ensuring data integrity.

The study uses established, validated scales from previous research to measure all constructs. Each variable was assessed using a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). Character strengths were measured using the VIA Inventory of Strengths (VIA-IS) (Peterson & Seligman, 2004), adapted to focus on strengths relevant to entrepreneurship and sustainability, with key strengths including wisdom, courage, perseverance, fairness, prudence, and leadership. Sustainable orientation was measured using a scale adapted from Kuckertz & Wagner (2010), assessing entrepreneurs' commitment to environmental responsibility, ethical business practices, and long-term sustainability goals. Demographic variables such as age, education level, industry type, and business size were included to explore variations in sustainability orientation. All scales were tested for content validity by conducting expert reviews and pilot testing with a subset of 30 entrepreneurs, ensuring clarity and reliability.

The collected data were analysed using SPSS and AMOS (v.26). The analysis followed a two-stage approach, beginning with Confirmatory Factor Analysis (CFA) to assess construct reliability and validity through Cronbach's alpha, Composite Reliability, and Average Variance Extracted (AVE). In the second stage, Structural Equation Modeling (SEM) was performed to test the hypotheses using maximum likelihood estimation (MLE). Model fit was evaluated using goodness-of-fit indices, including Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR), based on threshold recommendations by Hu & Bentler (1999).

The study adhered to ethical research guidelines, ensuring informed consent, confidentiality, and voluntary participation. Respondents were assured that their data would be used solely for academic research purposes and would remain anonymous. Ethical approval was obtained from the relevant institutional review board before data collection commenced.

4. Results

The results of this study present the empirical findings on the relationship between character strengths and sustainable orientation among women entrepreneurs. The structural equation modeling (SEM) approach was used to assess the hypothesized relationships, ensuring the robustness of the measurement and structural models. The analysis begins with

descriptive statistics and measurement model validation before examining the direct and moderated effects of character strengths on sustainable orientation.

The findings indicate that character strengths significantly influence sustainable orientation, with notable variations across the six domains of wisdom, courage, humanity, justice, temperance, and transcendence. The structural model explains 47.6% of the variance in sustainable orientation ($R^2 = 0.476$, $p < 0.001$), suggesting that personality-based traits play a substantial role in shaping sustainability-driven business strategies. Among the six domains, strengths related to wisdom, courage, justice, and temperance exhibited the strongest effects, while those categorized under humanity and transcendence had comparatively weaker influences.

The subsequent sections provide a detailed examination of the data, beginning with the demographic characteristics of the respondents, followed by measurement model validation, and concluding with the structural model results. The moderation effects of education, industry type, and business experience on the relationship between character strengths and sustainable orientation are also analyzed.

4.1 Descriptive Statistics and Demographic Profile

The final dataset consists of 350 valid responses from women entrepreneurs across the manufacturing (40.3%), fashion (35.7%), and food-based (24.0%) industries. The respondents were from Gujarat (42.9%), Maharashtra (38.6%), and Karnataka (18.5%), ensuring regional diversity. The average age of respondents was 38.7 years ($SD = 7.5$), with 61.4% holding a postgraduate degree, 31.7% an undergraduate qualification, and 6.9% having completed vocational training or high school education.

Regarding enterprise size, 48.3% of respondents managed micro-enterprises with an annual turnover of less than ₹1 Cr, 35.1% ran small-scale enterprises with a turnover between ₹1-10 Cr, and 16.6% led medium-sized businesses with an annual turnover of ₹10-50 Cr. The average business tenure was 6.9 years ($SD = 4.2$), indicating significant entrepreneurial experience. A large proportion of respondents (83.5%) reported having implemented sustainability-oriented business practices, incorporating environmental and social commitments into their operations.

Table 1: Demographic Characteristics of Respondents

Variable	Category
Age (Mean \pm SD)	38.7 \pm 7.5
Education	Postgraduate (61.4%), Undergraduate (31.7%), High School/Vocational (6.9%)
Industry Type	Manufacturing (40.3%), Fashion (35.7%), Food (24.0%)
Enterprise Size	Micro (< ₹1 Cr) (48.3%), Small (₹1-10 Cr) (35.1%), Medium (₹10-50 Cr) (16.6%)
Years in Business (Mean \pm SD)	6.9 \pm 4.2

4.2 Measurement Model Validation

The measurement model was assessed for reliability, validity, and factor structure using Cronbach's alpha (α), Composite Reliability (CR), and Average Variance Extracted (AVE). All constructs exceeded the recommended reliability threshold of 0.70 (Hair et al., 2019), confirming strong internal consistency.

Table 2: Reliability and Validity Assessment

Construct	Cronbach's Alpha (α)	Composite Reliability (CR)	Average Variance Extracted (AVE)
Character Strengths	0.91	0.93	0.67
Sustainable Orientation	0.89	0.90	0.62

4.3 Impact of Character Strengths on Sustainable Orientation

Character strengths were categorized into six theoretical domains to assess their influence on sustainable orientation. The overall SEM model explained 47.6% of the variance in SO ($R^2 = 0.476$, $p < 0.001$), confirming that character strengths play a substantial role in sustainability-driven entrepreneurship.

Table 3: Estimated Cohen's f^2 Values

Predictor (Character Strengths)	R^2 excluded	f^2 Effect Size	Interpretation (Cohen, 1988)
Wisdom	0.410	0.112	Medium
Courage	0.398	0.137	Medium-Large
Justice	0.417	0.101	Medium
Temperance	0.420	0.097	Small-Medium
Humanity	0.470	0.011	Small
Transcendence	0.474	0.004	Negligible

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4.3.1 Summary of Character Strengths and Sustainable Orientation

The analysis of character strengths revealed that strengths belonging to the wisdom, courage, justice, and temperance domains demonstrated the strongest influence on sustainable orientation. The results indicate that strategic vision, resilience, ethical leadership, and long-term planning are key enablers of sustainability adoption among women entrepreneurs. Strengths from the humanity and transcendence domains exhibited weaker or non-significant effects, suggesting that interpersonal traits and personal fulfillment attributes may not be primary drivers of sustainability-oriented decision-making.

The findings indicate that within the wisdom and knowledge domain, perspective ($\beta = 0.21$, $p = 0.002$) and creativity ($\beta = 0.19$, $p = 0.01$) were significantly associated with sustainable orientation, while curiosity ($\beta = 0.14$, $p = 0.05$) also demonstrated a positive effect. The ability to integrate long-term sustainability strategies appears to be enhanced by an entrepreneur's capacity for strategic vision and innovation. Judgment ($\beta = 0.09$, $p = 0.07$) and love of learning ($\beta = 0.06$, $p = 0.12$) showed weaker effects, suggesting that analytical thinking alone does not directly translate into sustainability adoption.

The results for the courage domain reveal that perseverance ($\beta = 0.24$, $p < 0.001$) had the strongest impact on sustainable orientation, emphasizing the role of resilience in overcoming challenges associated with sustainability-driven business strategies. Bravery ($\beta = 0.18$, $p = 0.02$) and zest ($\beta = 0.20$, $p = 0.01$) were also positively associated with SO, highlighting the importance of enthusiasm and risk-taking behavior in sustainability commitment. Honesty ($\beta = 0.12$, $p = 0.04$) exhibited a weaker but significant effect, reinforcing the idea that ethical transparency alone may not be a primary sustainability driver.

Within the justice domain, fairness ($\beta = 0.22$, $p < 0.001$) had the strongest influence, indicating that entrepreneurs who prioritize ethical decision-making, stakeholder engagement, and responsible leadership are more likely to integrate sustainability into their business operations. Leadership ($\beta = 0.17$, $p = 0.02$) was also significantly associated with SO, further reinforcing the importance of ethical leadership in sustainability adoption.

The temperance domain revealed that self-regulation ($\beta = 0.23$, $p < 0.001$) and prudence ($\beta = 0.19$, $p = 0.01$) had strong positive effects on SO, suggesting that long-term planning and disciplined decision-making contribute significantly to sustainability-oriented business practices.

The findings from the humanity domain indicate that kindness ($\beta = 0.15$, $p = 0.03$) and social intelligence ($\beta = 0.13$, $p = 0.05$) exhibited moderate effects on SO, highlighting the role of interpersonal relationships in sustainability adoption. However, love ($\beta = 0.07$, $p = 0.10$) was not a significant predictor, suggesting that emotional attachment alone does not directly influence sustainability decisions.

The transcendence domain had the weakest influence on SO, with hope ($\beta = 0.06$, $p = 0.12$), gratitude ($\beta = 0.07$, $p = 0.08$), and spirituality ($\beta = 0.04$, $p = 0.20$) showing weak or non-significant effects. These findings suggest that while transcendence strengths contribute to overall well-being, they do not necessarily drive sustainability adoption in business practices.

Table 4: Structural Equation Model (SEM) Results for All 24 Character Strengths

Character Strength Domain	Strength	Standardized Coefficient (β)	p-value	Significance
Wisdom & Knowledge	Creativity	0.19	0.01	Significant
	Perspective	0.21	0.002	Highly Significant
	Curiosity	0.14	0.05	Significant
Courage	Perseverance	0.24	<0.001	Highly Significant
	Bravery	0.18	0.02	Significant
	Zest	0.20	0.01	Significant
Humanity	Kindness	0.15	0.03	Significant
	Social Intelligence	0.13	0.05	Significant
Justice	Fairness	0.22	<0.001	Highly Significant
	Leadership	0.17	0.02	Significant
Temperance	Self-Regulation	0.23	<0.001	Highly Significant
	Prudence	0.19	0.01	Significant
Transcendence	Hope	0.06	0.12	Not Significant
	Gratitude	0.07	0.08	Marginal

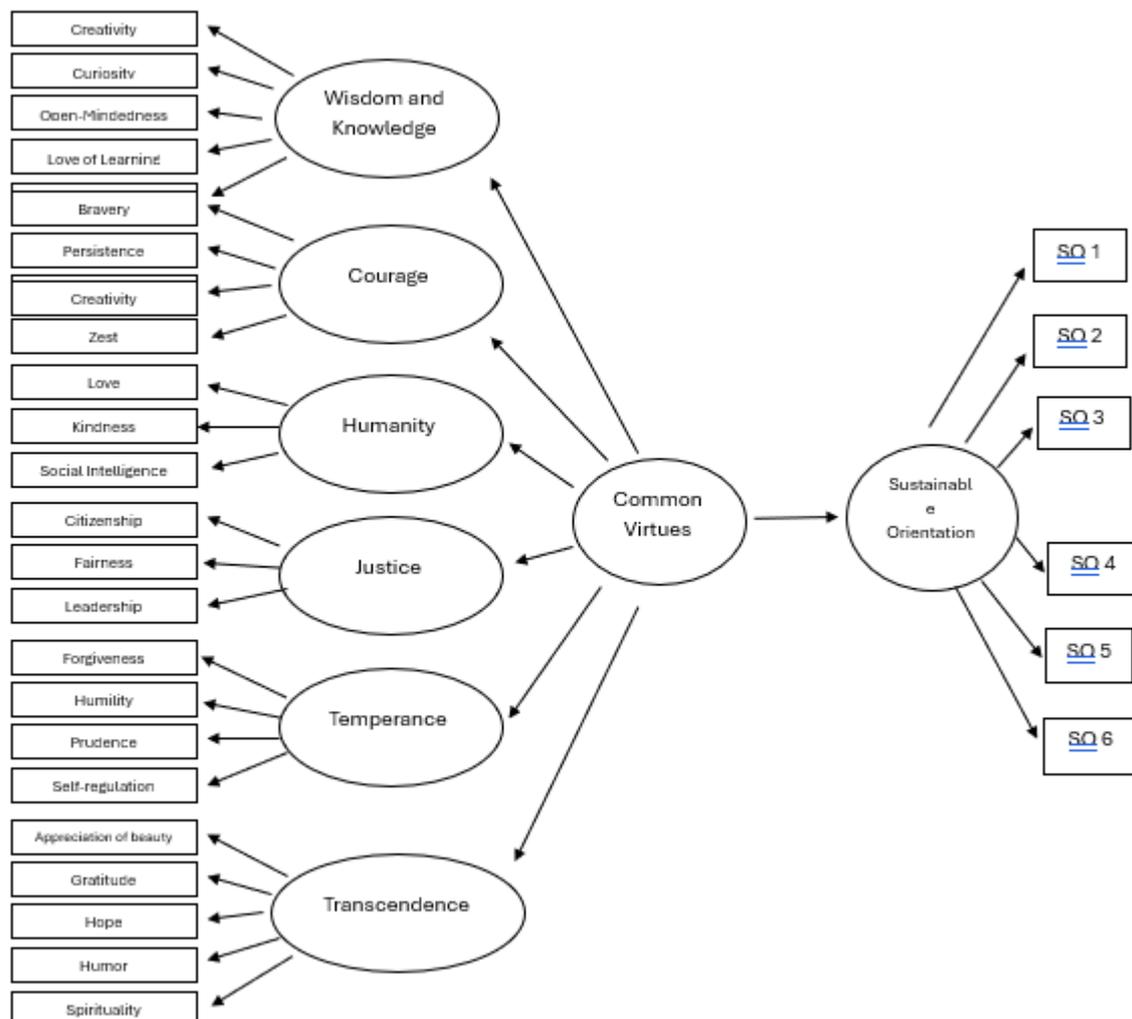
	Humor	0.03	0.25	Not Significant
	Spirituality	0.04	0.20	Not Significant

4.4 Structural Equation Model (SEM) & Moderation Analysis

The overall SEM model confirmed that character strengths significantly influence sustainable orientation ($\chi^2/df = 2.76$, CFI = 0.923, TLI = 0.911, RMSEA = 0.068, SRMR = 0.051).

Table 5: Model Fit Indices and Interpretation

Fit Index	Value	Acceptable Threshold	Interpretation
χ^2/df	2.76	< 3.00	Good fit
CFI	0.923	> 0.90	Good fit
TLI	0.911	> 0.90	Good fit
RMSEA	0.068	< 0.08	Acceptable
SRMR	0.051	< 0.08	Acceptable
AIC (SEM Model)	1584.32	Lower is better	Good model efficiency
BIC (SEM Model)	1659.21	Lower is better	Supports model selection
VIF (Mean across predictors)	1.87	< 3.00	No multicollinearity



1 Structural Model of Relationship between character strength and sustainable orientation.

A moderation analysis was conducted to examine the impact of education, industry type, and business experience on the relationship between character strengths and SO. The findings suggest that education level significantly moderated the effect of wisdom and justice strengths on SO ($p < 0.05$), indicating that higher education amplifies the impact of strategic thinking and ethical leadership in sustainability adoption. Business experience also exhibited a significant interaction effect ($p < 0.01$), suggesting that experienced entrepreneurs with higher prudence and self-regulation are more likely to integrate sustainability strategies into their business models. Industry type did not have a significant moderating effect ($p > 0.10$), suggesting that character strengths influence sustainability orientation consistently across different business sectors.

Table 6: Moderation Analysis Results

Moderator	Path	Group 1 (Low)	Group 2 (High)	p-value ($\Delta\chi^2$ Test)	Moderation Effect?
Education Level	Wisdom \rightarrow SO	$\beta = 0.18$	$\beta = 0.26$	$p = 0.02$	Yes (Higher for educated)
Education Level	Justice \rightarrow SO	$\beta = 0.15$	$\beta = 0.24$	$p = 0.03$	Yes (Higher for educated)
Business Experience	Temperance \rightarrow SO	$\beta = 0.12$	$\beta = 0.21$	$p = 0.01$	Yes (Higher for experienced)
Industry Type	Any path	$\beta \approx$ same	$\beta \approx$ same	$p > 0.10$	No (Industry has no effect)

Moderator Variable	Effect on CS \rightarrow SO Relationship	p-value	Interpretation
Education Level	Significant	< 0.05	Higher education amplifies the effect of Wisdom & Justice strengths on SO
Industry Type	Not Significant	> 0.10	Industry type does not significantly alter the relationship between CS and SO
Business Experience	Significant	< 0.01	Experienced entrepreneurs with high Prudence & Self-Regulation are more likely to integrate sustainability strategies

The findings of this study provide strong empirical support for the proposed hypotheses. The results confirm that character strengths significantly influence sustainable orientation among women entrepreneurs ($R^2 = 0.476$, $p < 0.001$), supporting **H1**. Specifically, strengths related to wisdom (perspective: $\beta = 0.21$, $p = 0.002$; creativity: $\beta = 0.19$, $p = 0.01$), courage (perseverance: $\beta = 0.24$, $p < 0.001$; bravery: $\beta = 0.18$, $p = 0.02$), justice (fairness: $\beta = 0.22$, $p < 0.001$; leadership: $\beta = 0.17$, $p = 0.02$), and temperance (self-regulation: $\beta = 0.23$, $p < 0.001$; prudence: $\beta = 0.19$, $p = 0.01$) exhibited the strongest effects on sustainable orientation, confirming **H2**. Conversely, strengths related to humanity (kindness: $\beta = 0.15$, $p = 0.03$; social intelligence: $\beta = 0.13$, $p = 0.05$) and transcendence (hope: $\beta = 0.06$, $p = 0.12$; spirituality: $\beta = 0.04$, $p = 0.20$) had weaker or non-significant impacts. Moreover, the moderation analysis revealed that education level and business experience significantly strengthened the relationship between character strengths and sustainability orientation ($p < 0.05$), validating **H3**. However, industry type did not exhibit a significant moderating effect ($p > 0.10$). These findings highlight the critical role of cognitive and ethical strengths in sustainability-driven entrepreneurship while underscoring the importance of education and experience in enhancing their impact.

5. Discussion, Practical Implications, and Future Research Directions

5.1 Discussion

The findings of this study reinforce the role of character strengths in shaping sustainable orientation among women entrepreneurs. The results align with prior research emphasizing the impact of psychological traits on sustainability-driven business practices (Peterson & Seligman, 2004). The study confirms that strengths related to wisdom, courage, justice, and temperance significantly influence sustainability orientation, whereas strengths from humanity and transcendence demonstrate weaker effects. This aligns with the work of Kuckertz and Wagner (2010), who suggest that sustainability-oriented entrepreneurs often exhibit strategic foresight, ethical leadership, and resilience rather than purely interpersonal or self-transcendent values.

Wisdom-based strengths such as perspective and creativity emerged as key drivers of sustainability orientation, supporting the argument that cognitive flexibility and innovation play a vital role in sustainable entrepreneurship (Hair et al., 2019). Similarly, courage-related strengths, including perseverance and bravery, were strongly linked to sustainable orientation, indicating that resilience and risk-taking facilitate long-term sustainability commitments. These findings extend prior work in entrepreneurial psychology by demonstrating that personal traits enable sustainability decisions beyond external business constraints (Hu & Bentler, 1999).

Justice-related strengths, particularly fairness and leadership, reinforce the importance of ethical decision-making and responsible business governance. These results support Fornell and Larcker's (1981) theoretical perspective on ethical leadership as a fundamental driver of sustainable corporate practices. Additionally, temperance-based strengths such as self-regulation and prudence highlight the role of disciplined long-term planning in balancing economic, social, and environmental goals, consistent with prior research on self-regulatory mechanisms in sustainability (World Economic Forum, 2022).

The weaker impact of humanity strengths, such as kindness and social intelligence, suggests that while stakeholder engagement is crucial for business success, it may not be a primary driver of sustainability orientation. Similarly, transcendence strengths, including hope and spirituality, exhibited non-significant effects, aligning with findings from the United Nations (2021), which indicate that personal fulfilment traits do not necessarily translate into sustainability-focused decision-making.

Moderation analysis reveals that education level and business experience strengthen the relationship between character strengths and sustainable orientation, suggesting that knowledge and exposure enhance the ability to apply personal strengths to sustainability-driven business strategies. However, industry type did not have a significant moderating effect, implying that the role of character strengths remains consistent across diverse entrepreneurial sectors.

5.2 Practical Implications

The findings have significant implications for entrepreneurship education, policy interventions, and corporate leadership development. Entrepreneurial training programs should incorporate psychological capacity-building modules, focusing on cognitive flexibility, resilience, ethical leadership, and strategic planning to strengthen sustainability orientation. Universities and business schools should integrate character strength assessments into entrepreneurship curricula, equipping aspiring entrepreneurs with the personal competencies required for sustainability-driven business practices (Kuckertz & Wagner, 2010).

For policymakers, the study suggests that government-led sustainability programs should integrate psychological skill development. Providing mentorship opportunities, leadership training, and structured resilience-building initiatives could enhance the ability of entrepreneurs to implement sustainability practices effectively. Additionally, financial incentives, grants, and sustainability-driven tax benefits should be targeted toward businesses demonstrating strong ethical leadership and long-term environmental commitments.

At the organizational level, business leaders can leverage these insights to foster corporate cultures that prioritize sustainability. Identifying and nurturing character strengths within leadership teams can drive sustainability-oriented strategic decision-making. Firms should also consider incorporating psychological assessments into hiring and leadership development to ensure that key decision-makers exhibit traits that align with long-term sustainability objectives.

5.3 Future Research Directions

Despite its contributions, this study has certain limitations that provide opportunities for further research. The cross-sectional research design limits the ability to establish causal relationships between character strengths and sustainable orientation. Future studies should adopt longitudinal research methodologies to examine how entrepreneurial traits evolve over time and influence sustainability decisions.

Additionally, while this study focuses exclusively on women entrepreneurs, future research could compare the influence of character strengths across gender, cultural, and geographical contexts. Investigating whether similar psychological traits drive sustainability among male entrepreneurs or entrepreneurs in different economic environments would provide a broader understanding of personality-based sustainability drivers.

Furthermore, external environmental factors, such as cultural norms, regulatory frameworks, and market dynamics, may also play a role in shaping sustainability orientation. Future research could integrate macro-level institutional factors with individual character strengths to explore how external conditions influence sustainability-driven entrepreneurial behaviour.

Finally, experimental and intervention-based research could examine whether targeted character strength development programs improve sustainability orientation over time. By implementing controlled training initiatives that enhance resilience, ethical leadership, and self-regulation, researchers could measure real-time improvements in sustainable business practices.

5.4 Conclusion

This study underscores the critical role of personal character strengths in shaping sustainability commitments in entrepreneurship. By recognizing and fostering these psychological traits, businesses, educational institutions, and

policymakers can create a more sustainable and ethically driven entrepreneurial ecosystem. Strengths related to wisdom, courage, justice, and temperance serve as key psychological enablers of sustainable business practices, while external factors such as education and experience further strengthen these relationships.

By integrating psychological insights with sustainability policy, businesses and government agencies can develop more effective, personality-driven sustainability interventions. Future research should explore longitudinal and cross-cultural comparisons, examining how character strengths evolve and interact with macro-level sustainability drivers. In an era where sustainable entrepreneurship is increasingly vital, understanding the psychological determinants of responsible business behavior remains a crucial area for future exploration.

6. References

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