

Psycho-social correlates of prosocial-productivity in a sample of entrepreneurs in Peru

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Abstract

This study examines a dual-path structural model suggesting that similar prosocial-productivity outcomes may emerge from psychologically distinct configurations. prosocial-productivity is conceptualized as entrepreneurial behavior that deliberately integrates social and economic value creation. A cross-sectional survey of 506 entrepreneurs operating in Peru employed validated measures of personality traits, personal values, empathic concern, appreciation for sustainable practices, and prosocial-productivity. Correlational and path analyses identified two differentiated structural routes. The "genuine" pathway is associated with compassion, self-transcendence values, empathic concern, and sustainability orientation, reflecting a coherent prosocial psychological configuration. In contrast, the "dark shortcut" pathway links prosocial-productivity to narcissism and self-enhancement values, suggesting an instrumental configuration in which socially oriented outcomes may align with self-promotional tendencies. Although both pathways converge behaviorally, they diverge in their underlying psychological structure, revealing an ethical tension. Interpreted within a Latin American context marked by inequality and institutional fragility, these findings underscore the situated nature of prosocial-productivity and provide correlational evidence of heterogeneous psychological configurations underlying value integrative entrepreneurship.

Keywords: personality; values; compassion; prosocial-productivity.

Correlatos psicosociales de la productividad prosocial en una muestra de emprendedores en Perú

Resumen

Este estudio examina un modelo estructural de doble trayectoria que sugiere que resultados de productividad prosocial similares pueden emerger de configuraciones psicológicas diferenciadas. La productividad prosocial se conceptualiza como un comportamiento emprendedor que integra deliberadamente la creación de valor social y económico. Se aplicó una encuesta transversal a 506 emprendedores que operan en Perú, utilizando medidas validadas de rasgos de personalidad, valores personales, preocupación empática, apreciación de prácticas sostenibles y productividad prosocial. Los análisis correlacionales y de sendero identificaron dos rutas estructurales diferenciadas. La trayectoria "genuina" se asocia con la compasión, los valores de autotranscendencia, la preocupación empática y la orientación hacia la sostenibilidad. En contraste, la trayectoria del "atajo oscuro" vincula la productividad prosocial con el narcisismo y los valores de autopromoción, sugiriendo una configuración instrumental. Aunque ambas trayectorias convergen conductualmente, divergen en su estructura psicológica subyacente, revelando una tensión ética. Interpretados en un contexto latinoamericano caracterizado por desigualdad y fragilidad institucional, estos hallazgos subrayan el carácter situado de la productividad prosocial y aportan evidencia correlacional sobre su heterogeneidad psicológica.

Palabras clave: personalidad; valores; compasión; productividad prosocial.

Correlatos psicossociais da produtividade pró-social entre empreendedores peruanos

Resumo

O presente estudo examina um modelo estrutural de dupla trajetória, segundo o qual resultados semelhantes de produtividade pró-social podem emergir de configurações psicológicas distintas. A produtividade pró-social é conceituada como um comportamento empreendedor que integra deliberadamente a criação de valor social e econômico. Foi realizado um levantamento transversal com 506 empreendedores atuantes no Peru, utilizando medidas validadas de traços de personalidade, valores pessoais, preocupação empática, valorização de práticas sustentáveis e produtividade pró-social. As análises de correlação e de trajetória identificaram duas rotas estruturais distintas. A trajetória "genuína" está associada à compaixão, aos valores de autotranscendência, à preocupação empática e à orientação para a sustentabilidade. Em contraste, a trajetória do "atalho sombrio" relaciona a produtividade pró-social ao narcisismo e aos valores de autopromoção, sugerindo uma configuração instrumental. Embora ambas as trajetórias converjam em termos comportamentais, divergem em sua estrutura psicológica subjacente, revelando uma tensão ética. Interpretados no contexto latino-americano, caracterizado por desigualdade e fragilidade institucional, esses achados ressaltam o caráter situado da produtividade pró-social e fornecem evidências correlacionais sobre sua heterogeneidade psicológica.

Palavras-chave: Personalidade; valores; compaixão; produtividade pró-social.

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1. Introduction

Entrepreneurship is widely recognized as a key driver of economic and social progress, as it fosters innovation and generates opportunities across sectors. Entrepreneurs are often described as action-oriented decision makers who create ventures shaped by the interaction among personality traits, acquired skills, and contextual factors (Brandstätter, 2011; Estrin et al., 2016; Zhao et al., 2010). Beyond profit-driven models, social entrepreneurship has emerged to address socioeconomic inequalities through sustainable initiatives that integrate commercial and social value while prioritizing long-term social impact (BlancoJiménez et al., 2024).

Latin America provides a particularly relevant context for examining this phenomenon due to its persistent challenges of poverty, instability, and social exclusion. Social entrepreneurs in the region increasingly leverage community knowledge to develop innovative responses to local sociopolitical needs (Darden, 2022). Their efforts contribute to reducing structural inequality and strengthening community resilience (Ilie & Dumitriu, 2014), thereby expanding entrepreneurship beyond financial objectives to encompass social responsibility and collective wellbeing (BlancoJiménez et al., 2024).

Within this evolving paradigm, it becomes necessary to examine the beneficial dimension of entrepreneurial productivity by linking it to the psychological construct of prosociality, in order to characterize behaviors that balance social and economic value creation. Prosociality encompasses voluntary behaviors intended to benefit others, often involving the recognition of moral responsibility and the willingness to incur personal costs (Auné et al., 2014; Caprara et al., 2012; Darley & Batson, 1973). Similar processes have been described in the phenomenon of social entrepreneurship, where individuals identify unjust and unmet conditions, recognize opportunities for intervention, and take action to establish new equilibria (Martin & Osberg, 2007).

In this sense, prosociality supports the integration of social value into productive economic activity, in line with productive entrepreneurship theory (Baumol, 1990), which conceives value creation not only as an economic outcome but also as a mechanism for social and environmental improvement (Acs et al., 2013; Aeeni et al., 2018; Hmieleski & Lerner, 2016). Conceptually integrating prosocial-productivity (Vera & Espinosa, 2020) entails the deliberate incorporation of social and economic value creation within entrepreneurial activity, regardless of whether a venture is formally classified as social, in order to delimit an entrepreneurial behavioral dimension characterized by the conscious and inherent integration of collective wellbeing into productive processes. Hence, it is relevant to examine the psychosocial mechanisms underlying entrepreneurial behaviors of prosocial-productivity, which remain insufficiently theorized.

Although previous research has examined prosocial traits in business contexts (Bacq & Alt, 2018), a critical

gap persists in explaining how distinct psychological configurations may produce similar prosocial-productivity outcomes. In particular, little is known about whether behaviors that appear to transcend the self may also emerge from more instrumental psychological patterns. Addressing this gap is essential for advancing the theoretical understanding of the ethical and motivational complexity underlying value-integrative entrepreneurship.

To contribute to this debate, the present study examines four psychological constructs as potential predictors of prosocial-productivity: personality traits, personal values, empathic concern, and appreciation for sustainable practices. While previous research demonstrates that psychological dispositions influence entrepreneurial motivation (Zhao & Seibert, 2006; Hossain et al., 2021), relatively few studies have analyzed how these variables jointly relate to prosocial value integration within productive entrepreneurial behavior. Furthermore, although sustainability-oriented and ethical practices have been widely discussed in social entrepreneurship (Peredo et al., 2017; Bacq & Alt, 2018), the construct of prosocial-productivity provides a more integrated framework for examining the articulation of social and economic value creation. While prior research has examined prosocial behavior in entrepreneurship through isolated lenses, such as personality traits, values, or dark traits, this study advances the field by integrating these dimensions into a unified structural model that captures multiple motivational pathways.

Building on this rationale, this study aims to examine a structural model organizing the relationships among key psychological variables associated with prosocial-productivity and to assess whether similar behavioral outcomes may emerge from distinct psychological configurations. Additionally, the study evaluates the psychometric performance of the prosocial-productivity scale within an entrepreneurial sample. By doing so, the research seeks to clarify the heterogeneous psychological structures associated with value-integrative entrepreneurship in a Latin American context.

2. Theoretical framework

In business contexts, productivity has often been interpreted as the mere monetization of resources, primarily financial ones. Reframing productivity from the perspective of *productive entrepreneurship* (Baumol, 1990), and from a conscious psychosocial and behavioral approach, makes it possible to reveal its intrinsically prosocial dimension, highlighting the ethical and creative value embedded in productive activity. Deliberately linking prosocial behavior to productive entrepreneurial action entails recognizing the complex and beneficial actions that entrepreneurs can undertake by catalyzing synergies between social and economic value (Aeeni et al., 2018; Vera & Espinosa, 2020). Thus, from a psychological approach, the concept of prosocial-productivity denotes the deliberate enactment of behaviors that integrate social and economic value within entrepreneurial activity, promoting financial success and profitability in balance with

a strong commitment to social impact (Mair & Noboa, 2006; Mendoza-Abarca & Mellema, 2015).

Prosociality, defined as voluntary behavior intended to benefit others, when integrated into productive entrepreneurial action, promotes sustainability and entails the assumption of ethical responsibility (Bacq & Alt, 2018; Graddy-Reed, 2018; Peredo, Haugh, & McLean, 2017; Vera & Espinosa, 2020). Beyond altruism, prosocial motivation enhances innovation and resilience when responding to complex social challenges (Cheah et al., 2023). Entrepreneurs driven by prosocial values tend to develop adaptive solutions, positioning prosociality as a strategic driver rather than merely an outcome of social entrepreneurship (Stanlie, Lestari, & Kurniasari, 2023).

Prosocialproductivity behaviors contribute to the development of socioeconomic hybridity, as the integration of social and economic value strengthens organizational resilience, customer loyalty, and ethical competitiveness (Graddy-Reed, 2018; Humbert & Roomi, 2018). Hybrid models grounded in community participation and shared value creation mitigate market risks and support longterm viability (McMullen & Bergman, 2017; Peredo et al., 2017). Although prosocial-productivity is prominent among social entrepreneurs (Abhi, 2017), it also applies to conventional forprofit entrepreneurs who adopt ethical labor practices, contribute to employment generation, or pursue innovation for social benefit (Baumol, 1990; Young, 2006). Whereas social entrepreneurship typically refers to initiatives explicitly created with the primary objective of addressing social problems, prosocial-productivity refers to a behavioral dimension of individual entrepreneurs, characterized by the active capacity to create and integrate social value within productive economic activity, regardless of whether the initiative is formally classified as social.

This framework is particularly relevant in regions marked by inequality and institutional voids, such as Latin America, where entrepreneurship often addresses structural gaps. In this context, socially responsible entrepreneurship becomes a necessary model for balancing profit with public value. A deeper understanding of the psychosocial components linked to prosocialproductivity behaviors may promote the development and strengthening of this type of entrepreneurial practice. Moreover, research highlights the role of social support networks in reinforcing prosocial behavior, underscoring the importance of community ecosystems that enable and sustain impactful initiatives (Wang et al., 2024).

3. Literature review

3.1 Personality traits and their influence on prosocial-productivity

Personality traits play a central role in shaping entrepreneurial decisionmaking, risk tolerance, and responsiveness to socioeconomic challenges (Luca, 2017; Zhao & Seibert, 2006). Social entrepreneurs are often characterized by high levels of openness to experience,

conscientiousness, and agreeableness, which support sustained prosocial engagement (Hossain et al., 2021; Mgueraman & Abboubi, 2024). The Big Five (B5) model remains a primary framework for understanding entrepreneurial personality profiles, with evidence showing that entrepreneurs typically score high on extraversion, conscientiousness, and openness, and low on neuroticism (Brandstätter, 2011; Zhao & Seibert, 2006). Within the prosocialproductivity framework, three traits—openness to experience, neuroticism, and agreeableness—appear most relevant, as they influence how entrepreneurs integrate social and commercial value creation (DeYoung et al., 2007; Leon et al., 2017).

Openness to experience fosters creativity, cognitive flexibility, and intellectual curiosity, enabling entrepreneurs to generate innovative responses to complex social problems (Antoncic et al., 2013; Hossain et al., 2021; Zhao & Seibert, 2006). Neuroticism, often associated with anxiety and impulsivity, typically correlates negatively with financial risktaking (Brandstätter, 2011; Kuhnen et al., 2013), yet under volatile economic conditions, moderate neuroticism may enhance resilience and longterm viability (Caballero et al., 2014; Nga et al., 2018).

Agreeableness, encompassing compassion, trust, and politeness, is particularly relevant in social entrepreneurship, where ventures emphasize stakeholder wellbeing, ethical decisionmaking, and cooperation over competition (DeYoung et al., 2007; Liang et al., 2015; Mair & Noboa, 2006). While less predictive in traditional entrepreneurial success (Zhao & Seibert, 2006), agreeableness is a defining characteristic in socially driven ventures (Caballero et al., 2014; Wood, 2012).

Importantly, personality does not operate in isolation. Sociocultural and educational factors moderate their influence, particularly through entrepreneurial education, which cultivates empathy, collaboration, and critical thinking—skills essential for social innovation (Jadmiko et al., 2023; Hossain et al., 2021). In addition, social support networks reinforce the alignment between individual traits and prosocial entrepreneurial engagement (Dong et al., 2022; Shan & Tian, 2022).

3.2 The Dark Triad and its relationship to prosocial-productivity

The Dark Triad comprises three socially aversive personality traits—Machiavellianism, narcissism, and psychopathy—that influence entrepreneurial behavior (Paulhus & Williams, 2002). These traits are associated with manipulative tendencies, riskprone decisionmaking, and selfenhancement, characteristics that often contradict the ethical and collaborative nature of productive prosocial entrepreneurship (Furtner et al., 2011; Myung & Choi, 2017).

Machiavellianism is marked by strategic manipulation aimed at maximizing personal gain, often prioritizing profit over ethical norms (Jones & Paulhus, 2013; Akhtar et al., 2013). Entrepreneurs high in Machiavellianism may adopt prosocial narratives instrumentally to boost legitimacy, yet their actions are misaligned with the cooperative values underpinning prosocialproductivity (Hmieleski & Lerner,

2016; Wisse et al., 2024). Narcissism reflects a need for admiration, status, and dominance (Brunell et al., 2018). While moderate narcissism may support entrepreneurial resilience and innovation (Do & Dadvari, 2016), excessive narcissism impairs collaboration and ethical leadership (Rapp-Ricciardi et al., 2018). Narcissistic entrepreneurs might engage in prosocial actions primarily when such behavior enhances their public image (Morf & Rhodewalt, 2001), thereby limiting the authenticity and sustainability of their contributions (Miller et al., 2017). Psychopathy, characterized by impulsiveness, emotional detachment, and lack of empathy, is linked to opportunistic behaviors and disregard for longterm or ethical outcomes (Crysel et al., 2013; Akhtar et al., 2013). Although traits such as fearlessness may be advantageous in volatile markets, they typically undermine sustained prosocial engagement (Wu et al., 2020). While the Dark Triad traits can contribute to entrepreneurial adaptability and ambition, they remain largely incompatible with prosocial-productivity, as they tend to prioritize short-term gains over collective benefit (Morf & Rhodewalt, 2001; Wisse et al., 2024). However, evidence suggests that ethical leadership training and self-awareness development in entrepreneurship education may mitigate these traits' adverse impacts, encouraging more responsible and sustainable business behavior (Wu et al., 2020).

3.3 The role of values in prosocial entrepreneurship

According to Schwartz's (2010) framework, values act as core principles that guide behavior, reflecting what individuals consider important and desirable. Shaped by cultural, educational, and life experiences, they influence cognition and adaptation in entrepreneurial decisionmaking (Anglim et al., 2017; Anýžová, 2017; Caprara et al., 2011; McCrae & Costa, 2008; ParksLeduc et al., 2015). In entrepreneurship, values not only shape ethical judgments but also underpin motivational drivers for launching socially oriented ventures (Rietveld & Hoogendoorn, 2021).

Empirical studies using Schwartz's model show that conventional entrepreneurs typically prioritize selfenhancement and openness to change values—such as achievement, power, and selfdirection (García & Valencia de Lara, 2009; Ormeño, 2014). In contrast, social entrepreneurs tend to be driven by selftranscendence values, particularly benevolence and universalism, which reflect a stronger commitment to collective welfare and align with prosocial productivity (Bardi & Schwartz, 2003; Lönnqvist et al., 2013; Abhi, 2017; Lukeš & Feldmann, 2024).

Contextual factors moderate how values manifest in entrepreneurial behavior. Economic instability, for instance, can enhance the salience of selftranscendence values, as entrepreneurship becomes a strategy to address community needs (Lukeš & Feldmann, 2024). Similarly, cultural orientations toward egalitarianism and mastery promote prosocial motivations, encouraging business

models that emphasize collective over individual benefit (Morales et al., 2018; Liñán et al., 2020).

Gender differences further illustrate the role of values: women's entrepreneurial intentions are more frequently guided by benevolence and conformity, reinforcing their alignment with social entrepreneurship (Hormiga & Jaén, 2021). Meanwhile, sustainabilitydriven entrepreneurs often prioritize conservation values, illustrating the extended relevance of values beyond the social sphere (Gunawan et al., 2020).

Incorporating Schwartz's framework deepens understanding of how values influence both the ethical foundation and longterm sustainability of social ventures. A comprehensive view of how values intersect with personality, socioeconomic context, and entrepreneurial motivation is critical to understanding productive prosocial entrepreneurship.

3.4 The role of empathic concern in prosocial-productivity

A third cognitiveemotional dimension associated with prosocial behavior is empathic concern, which plays a central role in entrepreneurs' ability to identify and respond to the needs of others (Penner et al., 2004). Empathic concern is understood as a specific facet of empathy, involving compassion and an intention to alleviate others' suffering through purposeful action (Decety & Jackson, 2006). In the context of social entrepreneurship, it enables emotional connection with marginalized communities and supports a sustained commitment to addressing social inequalities (Batson, 1998; Goetz et al., 2010; Weng et al., 2018).

Research suggests that entrepreneurs who endorse selftranscendent values, particularly universalism and benevolence, are more likely to express empathic concern, leading to a stronger inclination toward productive prosocial engagement (Miller et al., 2012; Schwartz, 2010; Schwartz & Butenko, 2014; Tamir et al., 2016). This highlights empathy not only as an emotional disposition but also as a cognitiveaffective mechanism that shapes ethical decisionmaking in entrepreneurship (Singer & Klimecki, 2014). Through this lens, empathic concern becomes integral to how entrepreneurs evaluate and respond to the social consequences of their actions.

Moreover, empathic concern fosters intrinsic motivation and resilience, supporting sustained involvement in social ventures even in the face of external pressures (Baron-Cohen, 2011). Entrepreneurs who exhibit high levels of empathy tend to cultivate deeper, trustbased relationships with stakeholders, which contributes to the durability and ethical consistency of their ventures (Mair & Noboa, 2006). This dynamic illustrates the foundational role of empathy in productive prosocial entrepreneurship, where it informs ethical leadership and enables the development of inclusive, socially embedded business models (Liang et al., 2015; Nga & Shamuganathan, 2010).

3.5 Appreciation for Sustainable Practices (APS) and prosocial-productivity

A final component of prosocial-productivity is Appreciation for Sustainable Practices (APS), a construct that captures entrepreneurs' commitment to embedding sustainability within their business strategies (Cartwright & Craig, 2006; Nga & Shamuganathan, 2010; İrengün & Arikboğa, 2015; Vera et al., 2019). APS encourages ethically grounded decisionmaking that integrates social and environmental considerations alongside economic objectives, supporting the development of business models that are both responsible and resilient (Martin & Osberg, 2007; Singer & Ricard, 2015).

Entrepreneurial approaches to sustainability involve generating value that extends beyond financial performance, encompassing efficient resource use, social responsibility, and environmental stewardship (Kuckertz & Wagner, 2010; Savitz & Weber, 2006). Entrepreneurs with a strong APS orientation are more likely to design ventures that maintain financial viability while addressing community needs through longterm, systemic impact (Acs et al., 2013; Chu, 2010). This orientation serves as a critical driver of ethical innovation in social enterprises, where sustainable practices not only enhance organizational adaptability but also help cultivate trust within communities (Kuckertz & Wagner, 2010). APS further strengthens the legitimacy of social enterprises by reinforcing their alignment with broader societal and environmental goals, thereby improving their capacity to attract strategic partnerships, external funding, and policy support (Vera et al., 2019). As a component of prosocial-productivity, APS reflects the ethical imperative to balance growth with sustainability in entrepreneurial practice, particularly in contexts where economic disparities and ecological pressures converge.

Despite growing interest in prosocial entrepreneurship, limited attention has been given to whether similar prosocial-productivity outcomes may arise from structurally distinct psychological configurations. The present study addresses this gap by examining a dualpath structural model that differentiates a compassionbased configuration from a Dark Triad-associated configuration linked to prosocial-productivity. By integrating personality traits, values, empathic concern, and sustainability orientation within a unified analytical framework, this approach seeks to clarify the heterogeneous psychological patterns underlying valueintegrative entrepreneurial behavior in a Latin American context.

3.6 Hypotheses

Based on the literature reviewed, this study proposes a conceptual model that organizes the psychological variables influencing prosocial-productivity into two distinct explanatory patterns. One reflects an orientation grounded in compassion, selftranscendence values, empathic concern, and appreciation for sustainable practices

(APS), suggesting a stable disposition toward prosocial engagement. The other represents a more instrumental configuration, where productive-prosocial behavior may be shaped by traits such as narcissism and selfenhancement values, and oriented toward personal recognition or gain.

The model examines the predictive relationships among personality traits, value orientations, emotional dispositions, and sustainability-related attitudes. The following hypotheses are proposed:

- **H1:** Compassion is positively associated with selftranscendence values and negatively associated with selfenhancement values.
- **H2:** Narcissism is positively associated with selfenhancement values.
- **H3:** Compassion and selftranscendence values are positively associated with empathic concern.
- **H4:** Compassion and empathic concern are positively associated with APS.
- **H5:** Compassion, empathic concern, APS, and selftranscendence values are positively associated with prosocial-productivity.
- **H6:** Machiavellianism and psychopathy are negatively associated with empathic concern.
- **H7:** Narcissism and selfenhancement values will be positively associated with prosocial-productivity, reflecting an instrumental value orientation.

These hypotheses structure the empirical analysis of the model and offer a framework to distinguish between different psychological mechanisms underlying prosocial behavior in entrepreneurial settings.

4. Method

4.1 Participants

The study included 506 participants who met two inclusion criteria: (1) they were founding members, partners, or leaders of a venture, and (2) their ventures were operating in Peru. Sample adequacy was evaluated using complementary criteria. First, following established guidelines for multivariate models (Hair et al., 2010), we considered the maximum number of predictors pointing to a single endogenous construct in the structural model, indicating that the available sample size was sufficient for stable parameter estimation. Second, an a priori power analysis conducted in G*Power 3.1 (Faul et al., 2009) for multiple regression with $\alpha = .05$, statistical power of .80, and an anticipated small to medium effect size ($f^2 = 0.10$) indicated that the minimum required sample size was substantially below the final $N = 506$. Thus, the achieved sample size was considered adequate for the proposed analyses.

Participants ranged in age from 20 to 76 years ($M = 42.5$, $SD = 12.27$). The sample comprised 237 women (46.8%) and 269 men (53.2%). The following demographic variables were assessed: educational attainment (primary = 1.19%, secondary = 8.3%, technical training = 19.37%, undergraduate = 40.32%, graduate = 26.09%, and other = 4.74%); selfreported

socioeconomic status (low = 1.78%, lowermiddle = 13.04%, middle = 61.46%, uppermiddle = 20.55%, and high = 3.16%); and whether the venture operated as a forprofit organization (78.46%) or a nonprofit organization (21.34%).

4.2 Measures

Most measures used a Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree), except for the Schwartz Personal Values Questionnaire, which used a 1 to 6 scale. While most items were adapted from previous research, the Prosocialproductivity Scale was developed based on a prior qualitative study and a review of existing instruments (Vera & Espinosa, 2020).

Personality traits were assessed using the Big Five Aspect Scales (BFAS; DeYoung, Quilty, & Peterson, 2007), validated in Peru by León et al. (2017). The full instrument comprises 100 items covering five broad domains, each divided into two specific aspects: Volatility and Withdrawal (Neuroticism), Compassion and Politeness (Agreeableness), Industriousness and Orderliness (Conscientiousness), Enthusiasm and Assertiveness (Extraversion), and Intellect and Openness (Openness to Experience). The Peruvian validation by León et al. (2017), conducted with 711 participants enrolled in executive extension programs at a private university in Lima, reported Cronbach's alpha coefficients ranging from .61 to .81 across dimensions.

For the present study, three domains were administered (60 items): Neuroticism, Agreeableness, and Openness to Experience. Reliability coefficients in the current sample were adequate: Neuroticism (Volatility $\alpha = .67$; Withdrawal $\alpha = .65$), Agreeableness (Compassion $\alpha = .79$; Politeness $\alpha = .60$), and Openness (Openness to Experience $\alpha = .66$; Intellect $\alpha = .78$).

Although the Big Five model comprises five higherorder traits, this study focused on Neuroticism, Agreeableness, and Openness because of their theoretical relevance to the proposed model. Agreeableness is directly linked to compassion, interpersonal concern, and moral orientation; Openness is associated with cognitive flexibility and innovation in complex social contexts; and Neuroticism captures emotional regulation processes that may influence ethical decisionmaking under uncertainty. These domains were therefore theoretically aligned with the hypothesized psychological pathways underlying prosocial-productivity.

Schwartz Personal Values Questionnaire (PVQ). The 21item version, validated in different contexts (Schwartz, 1992, 2007), assesses the importance of 10 value types (power, achievement, hedonism, stimulation, selfdirection, universalism, benevolence, tradition, conformity, security) organized into four dimensions: selftranscendence, selfpromotion, conservation, and openness to change. The PVQ does not yield a global score; instead, the importance of each value is calculated as the average response to its corresponding items. Higher scores indicate greater personal relevance. Participants responded on a 1 to 6 scale indicating how much each

description resembled them, from 1 ("does not resemble me") to 6 ("resembles me very much"). The present study reported adequate reliability for Selftranscendence ($\alpha = .91$), Selfenhancement ($\alpha = .74$), Conservation ($\alpha = .75$), and Openness to Change ($\alpha = .82$).

Empathic Concern Scale. Taken from the Interpersonal Reactivity Index (IRI; Davis, 1980; Mestre et al., 2004), this scale measures cognitiveemotional empathic tendencies, specifically compassion, affection, and concern for others. It consists of 7 items rated on a 1 to 5 scale, from 1 = "does not describe me at all" to 5 = "describes me very well." In the present research, the scale reported a Cronbach's alpha of $\alpha = .66$.

Appreciation for Sustainable Practices Scale (APS). Developed by Vera, Espinosa, and Priale (2021), this instrument includes 21 items rated on a 1 to 5 scale, where 1 = "Strongly Disagree" and 5 = "Strongly Agree," assessing organizational and leadership attitudes toward sustainability. The APS scale has demonstrated high reliability, with Cronbach's alpha = .96 in Peruvian samples of social and commercial entrepreneurs (Vera et al., 2021). In the present study, the scale also reported $\alpha = .96$.

Prosocialproductivity Scale. This scale was developed from a previous qualitative study with social entrepreneurs, along with a review of productive/destructive entrepreneurship scales (Hmieleski & Lerner, 2016) and the sustainability subscale of the social entrepreneurship dimension scale (Nga & Shamuganathan, 2010). It consists of 6 items rated from 1 to 5, where 1 = "Strongly Disagree" and 5 = "Strongly Agree." In this study, the scale reported a Cronbach's alpha of $\alpha = .85$.

4.3 Procedure

To construct the sampling frame, the research team developed an original database based on a systematic review of publicly accessible directories from chambers of commerce and purposedriven entrepreneurship centers. This process resulted in a database comprising information on more than 1,500 local ventures across diverse sectors and industries, covering a broad spectrum of both conventional and nonconventional entrepreneurial initiatives. The development of this database, from which participants were subsequently contacted, ensured a diverse and inclusive representation of different entrepreneurial modalities. Once the database was compiled and verified, potential participants were invited to take part in the study. Participation was entirely voluntary. All participants were provided with an informed consent form detailing the objectives of the research, the confidential treatment of data, and the contact information of the research team.

Data collection was conducted through three procedures: (1) inperson administration at entrepreneurs' workplaces; (2) virtual invitations sent via personal email addresses obtained from publicly accessible entrepreneurial directories; and (3) an open call disseminated through social media, employing a snowball sampling strategy.

In the second and third procedures, data were collected through an online questionnaire administered via Google Forms. The survey included a generic definition of entrepreneurship to ensure that respondents selfidentified as entrepreneurs prior to completing the instruments. In both face-to-face and virtual modalities, participants received detailed information regarding ethical considerations and the exclusive academic use of the data. The study was approved by the Institutional Research Ethics Committee of the authors' affiliated institution.

4.4 Data analysis

The information obtained through the questionnaires was compiled into a database for statistical analysis. Data were processed using IBM SPSS Statistics, version 23. The analytical strategy followed several stages. First, preliminary analyses were conducted to examine data distribution and determine the appropriate statistical procedures. Subsequently, descriptive and correlational analyses were performed to explore associations among the study variables.

To assess potential common method bias (CMB), Harman's singlefactor test was conducted through an exploratory factor analysis including all measured items. In addition, a confirmatory factor analysis (CFA) was performed to evaluate the measurement structure of the constructs included in the study.

Based on the correlation matrix and theoretical considerations, a hypothetical model specifying the relationships among the study variables was proposed and contrasted with an alternative model. Both models were estimated using path analysis, and their levels of fit were compared to evaluating their relative adequacy.

5. Results

5.1 Prosocial-productivity

To evaluate the psychometric properties of the Prosocial-productivity scale, an exploratory factorial analysis with the

Maximum Likelihood (ML) method was performed on the 6 items of the scale. An adequate value was obtained for the Kaiser-Meyer-Olkin measure, greater than .60 (Kaiser 1974), (KMO = .823), with a significance of $p < .05$ in Bartlett's sphericity test. This confirmed the viability of making a factorial analysis, from which a single component was obtained that explains 56.41% of the total variance, with factorial loads from 0.716 to 0.786, so it was not necessary to perform any factorial rotation method. As shown in Table 1, all six items exhibited satisfactory factor loadings and communalities, supporting the unidimensional structure of the Prosocial-productivity scale. The reliability analysis reported an adequate Cronbach's Alpha coefficient $\alpha = .85$.

Additionally, a Confirmatory Factor Analysis (CFA) was conducted using the Weighted Least Square Mean (WLSM) method. The goodness-of-fit indices for the factorial model were adequate: $\chi^2/df = 1.84$, CFI = .99, NFI = .998, RMSEA = .0001, and SRMR = .002.

5.2 Common method bias assessment

Given that all variables in the study were measured through self-report instruments collected at a single time point, additional analyses were conducted to examine the potential presence of common method bias. First, Harman's singlefactor test was performed using an unrotated exploratory factor analysis including all measurement items. The results revealed multiple factors with eigenvalues greater than 1. The first factor accounted for 22.91% of the total variance, which is well below the 50% threshold commonly associated with substantial common method variance.

Second, a confirmatory factor analysis compared a singlefactor model, in which all items loaded onto one latent construct, with the hypothesized multidimensional measurement model reflecting the proposed factorial structure of the constructs. The singlefactor model showed poor fit to the data (CFI = .333, TLI = .322, RMSEA = .072, SRMR = .104). In contrast, the hypothesized multidimensional measurement model demonstrated substantially better fit (CFI = .732, TLI = .721, RMSEA = .046, SRMR = .069), with

Table 1. Results from a factor analysis of the productive-prosociality scale

	Factor loading I	h^2	r^2
1. I provide realistic and practical support to others, especially those who need it most or are experiencing difficulties.	0.753	0.568	0.623
2. I share my resources, knowledge, and capabilities with others, as well as the positive opportunities that arise in my professional and personal life.	0.773	0.598	0.649
3. I sense when others are experiencing discomfort, dissatisfaction, or sadness, even when they do not communicate it to me, and I try to understand them and help them feel better.	0.728	0.530	0.596
4. We deliberately and consistently produce goods and/or services that address people's needs and improve their quality of life and that of their surrounding environment over the long term.	0.716	0.512	0.586
5. Our employees understand, value, and embrace our mission and are proud of and committed to their work, as reflected in excellent performance and a positive organizational climate.	0.786	0.617	0.670
6. We contribute value to society through ethical actions that promote responsibility among all stakeholders and ensure a balance among economic, social, and environmental considerations.	0.748	0.559	0.624

Note: h^2 = Communalities; r^2 = Item-test correlation. Extraction Method: Maximum Likelihood (ML).

Source: own elaboration.

considerable improvements in fit indices ($\Delta CFI = .399$, $\Delta TLI = .399$, $\Delta RMSEA = -.026$, $\Delta SRMR = -.035$). These results suggest that the covariance among the items is not adequately explained by a single underlying factor and that common method bias is unlikely to represent a serious threat to the validity of the findings.

5.3 Descriptive analysis

Descriptive statistics were calculated for all study variables. As shown in Table 2, the sample sizes, means, and standard deviations provide an overview of the distribution and central tendency of the variables included in the analyses.

Table 2. Sample size, means and standard deviations for study variables

	N	M	SD
1. Productive-prosociality	506	4.16	0.70
2. Appreciation for sustainable practices	501	4.02	0.86
3. Empathic Concern	506	3.86	0.65
<i>Values</i>			
4. Self-Transcendence	506	5.01	1.16
5. Self-Enhancement	506	3.91	1.09
6. Conservation	505	4.25	1.01
7. Openness to Change	506	4.63	1.02
<i>Personality</i>			
<i>Neuroticism</i>			
8. Withdrawal	505	2.48	0.60
9. Volatility	504	2.52	0.60
<i>Agreeableness</i>			
10. Compassion	506	3.75	0.69
11. Politeness	504	3.97	0.52
<i>Openness to experience</i>			
12. Intellect	503	3.79	0.67
13. Openness	502	3.74	0.59
<i>Dark Triad</i>			
14. Machiavellianism	506	1.82	0.87
15. Psychopathy	505	1.68	0.72
16. Narcissism	506	2.42	1.03

Source: own elaboration.

5.4 Correlation analysis between sociodemographic data and study variables

Correlations between sociodemographic characteristics and the study variables were examined using coefficients appropriate to the measurement level of each variable: Pearson's correlation for continuous variables (age), point-biserial correlation for dichotomous variables (gender and profit motive), and Spearman's rho for ordinal variables (socioeconomic status and education). Table 3 presents the correlation coefficients between the study variables and participants' sociodemographic characteristics.

Age correlated positively with Prosocialproductivity and negatively with SelfTranscendence, SelfEnhancement, Openness to Change, and the traits of Intellect, Openness, Machiavellianism, and Narcissism. Gender (1 = Male, 2 = Female) showed positive correlations for women with Prosocialproductivity, Empathic Concern, Compassion,

Politeness, and Openness, and negative correlations with SelfEnhancement, Machiavellianism, and Psychopathy. Socioeconomic status was positively related to Empathic Concern, SelfTranscendence, SelfEnhancement, Openness to Change, and traits such as Compassion, Politeness, Intellect, and Openness, and negatively with Neuroticism. Educational attainment was positively associated with Prosocialproductivity, APS, Empathic Concern, SelfTranscendence, SelfEnhancement, Openness to Change, and multiple personality traits, and inversely related to Neuroticism. Lack of profit motivation (1=Yes, 2=No) correlated positively with Prosocialproductivity, APS, Empathic Concern, SelfTranscendence, Compassion, Politeness, and Openness, and negatively with SelfEnhancement, Conservation, Volatility, and all Dark Triad traits.

5.5 Correlation analysis between study variables

Pearson correlations (see Table 4) showed that Prosocialproductivity correlated positively with Compassion, Politeness, Openness, Intellect, SelfTranscendence, Openness to Change, Conservation, APS, and Empathic Concern, and negatively with Withdrawal, Volatility, Machiavellianism, and Psychopathy. APS correlated positively with Empathic Concern, Compassion, Politeness, Openness, Intellect, and SelfTranscendence, and negatively with Withdrawal, Volatility, the entire Dark Triad, and SelfEnhancement. Empathic Concern was positively correlated with the same prosocial variables and negatively with the Dark Triad and SelfEnhancement. Additional significant correlations among values and personality traits are detailed in Table 4.

5.6 Path analysis

This analysis seeks to comprehensively examine the relationships among the variables studied. The criteria considered to evaluate the goodness of fit of the proposed models were the quotient resulting from dividing the Chi-square statistic (2) the model's degrees of freedom (2/gl), the BentlerBonett Comparative Fit Index (CFI), the BentlerBonett Normed Fit Index (NFI), and the SteigerLind Root Mean Square Error of Approximation (RMSEA). To evaluate goodness of fit, the recommendations of Ruiz et al. (2010) were followed. According to these guidelines, $X^2/gl \leq 3$, $IFC \geq .95$, $NFI \geq .90$, and $RMSEA \leq .08$ indicate good model fit.

Based on the conceptual review, a hypothetical model of the relationships among variables was proposed through a path analysis comprising five levels (Figure 1). At the first level, personality variables from the Big Five and the Dark Triad were considered structural and stable, exerting direct influence on the remaining variables. Values were placed at the second level, influencing empathic concern at the third level, which in turn was expected to affect APS at the fourth level. APS was then posited as a direct predictor of prosocialproductivity at the fifth level, the final output variable.

Table 3. Correlations for study variables and sociodemographic characteristics of participants

	Age ^a	Gender ^b	Socioeconomic level	Education level	Profit motive ^b
1. Productive-prosociality	.097*	.111*	.087	.163**	.194**
2. Appreciation for sustainable practices	.049	.067	.070	.196**	.217**
3. Empathic Concern	.062	.138**	.123**	.120**	.152**
<i>Values</i>					
4. Self-Transcendence	-.118**	.025	.135**	.194**	.092*
5. Self-Enhancement	-.126**	-.106*	.112*	.100*	-.247**
6. Conservation	.022	-.014	-.008	-.037	-.122**
7. Openness to Change	-.188**	-.022	.098*	.173**	.003
<i>Personality</i>					
<i>Neuroticism</i>					
8. Withdrawal	.059	.058	-.168**	-.229**	-.032
9. Volatility	.015	.034	-.129**	-.192**	-.105*
<i>Agreeableness</i>					
10. Compassion	-.067	.165**	.148**	.201**	.193**
11. Politeness	.010	.171**	.089*	.057	.131**
<i>Openness to experience</i>					
12. Intellect	-.120**	-.034	.253**	.337**	.060
13. Openness	-.118**	.088*	.111*	.159**	.100*
<i>Dark Triad</i>					
14. Machiavellianism	-.159**	-.147**	.057	.122**	-.102*
15. Psychopathy	-.077	-.191**	-.011	-.060	-.133**
16. Narcissism	-.120**	-.073	.054	.101*	-.144**

Note: ^a Pearson correlation coefficient; ^b Point biserial correlation coefficient; *p < 0,05; ** p < 0,01

Source: own elaboration.

Table 4. Pearson correlations for study variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Productive-prosociality	-															
2. Appreciation for sustainable practices	.564**	-														
3. Empathic Concern	.450**	.364**	-													
<i>Values</i>																
4. Self-Transcendence	.222**	.111*	.267**	-												
5. Self-Enhancement	-.013	-.142**	-.117**	.148**	-											
6. Conservation	.109*	-.021	.129**	.566**	.363**	-										
7. Openness to Change	.211**	.079	.161**	.740**	.344**	.467**	-									
<i>Personality</i>																
<i>Neuroticism</i>																
8. Withdrawal	-.190**	-.115**	-.046	-.064	.019	.080	-.047	-								
9. Volatility	-.185**	-.219**	-.120**	-.130**	.101*	.055	-.042	.503**	-							
<i>Agreeableness</i>																
10. Compassion	.449**	.383**	.530**	.225**	-.165**	-.014	.129**	-.229**	-.285**	-						
11. Politeness	.263**	.320**	.336**	.106*	-.174**	-.046	-.033	-.332**	-.407**	.524**	-					
<i>Openness to experience</i>																
12. Intellect	.342**	.288**	.252**	.101*	.058	-.088*	.161**	-.381**	-.272**	.440**	.291**	-				
13. Openness	.387**	.387**	.360**	.139**	-.046	-.069	.205**	-.130**	-.199**	.536**	.351**	.567**	-			
<i>Dark Triad</i>																
14. Machiavellianism	-.123**	-.110*	-.218**	-.075	.242**	-.019	.019	.102*	.154**	-.191**	-.388**	.018	-.129**	-		
15. Psychopathy	-.197**	-.235**	-.323**	-.134**	.150**	-.048	-.005	.096*	.174**	-.390**	-.408**	-.123**	-.196**	.438**	-	
16. Narcissism	.011	-.099*	-.108*	.014	.416**	.093*	.112*	.129**	.215**	-.161**	-.272**	.040	-.020	.466**	.299**	-

Note: *p < 0,05; ** p < 0,01

Source: own elaboration.

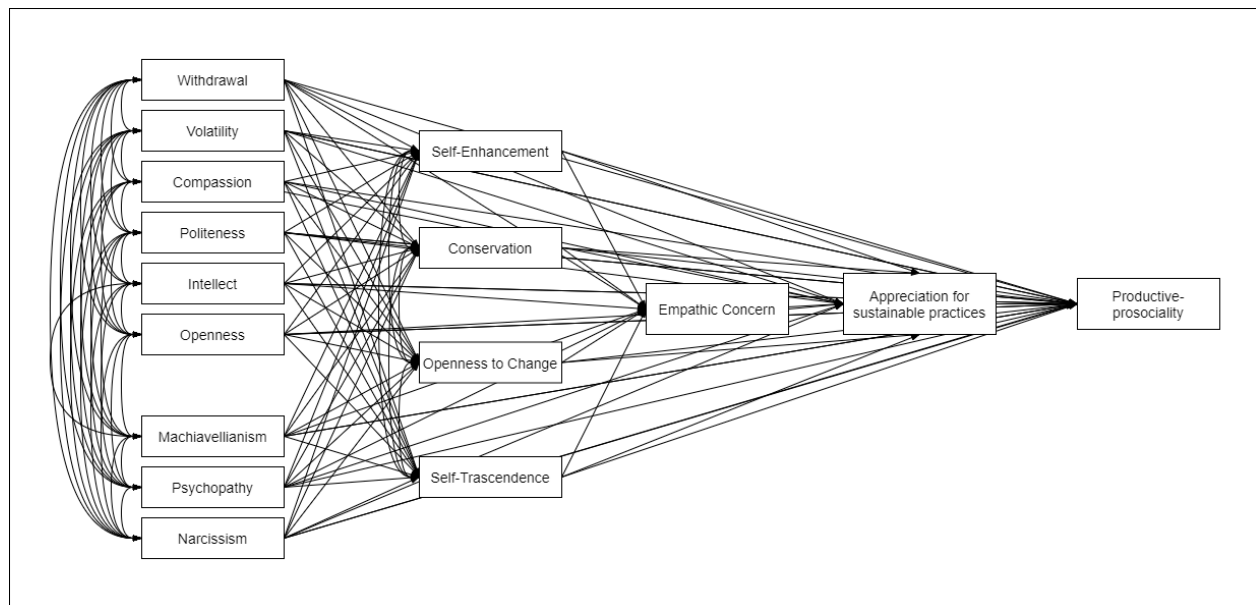


Figure 1. Hypothetic Model

Source: own elaboration

The initial hypothetical model showed inadequate fit ($\chi^2/df = 20.314$, CFI = .993, RMSEA = .196). Following established recommendations for model respecification (Schreiber et al., 2006), the model was refined through a systematic review of modification indices and the removal of theoretically nonessential and statistically nonsignificant paths ($p > .05$). The revised model retained only theoretically meaningful and statistically significant relationships, resulting in improved global fit indices.

In this first model, the personality trait **Compassion** exerted influence across nearly all levels. At the second level, Compassion predicted Selftranscendence ($\beta = 0.210$, $p < .001$) and Selfenhancement ($\beta = -0.135$, $p < .05$). At the third level, Compassion predicted Empathic Concern ($\beta = 0.382$, $p < .05$), and at the fifth level, it predicted Prososocialproductivity ($\beta = 0.231$, $p < .05$). **Narcissism** was the second personality trait with notable influence, predicting Selfenhancement ($\beta = 0.374$, $p < .001$) at the second level and Prososocialproductivity ($\beta = 0.111$, $p < .05$) at the fifth level. Empathic Concern was negatively influenced by **Psychopathy** ($\beta = -0.088$, $p < .05$) and positively predicted APS ($\beta = 0.189$, $p < .01$) and Prososocialproductivity ($\beta = 0.088$, $p < .05$). Finally, APS predicted Prososocialproductivity ($\beta = 0.449$, $p < .001$), which was also negatively influenced by **Machiavellianism** ($\beta = -0.095$, $p < .05$).

Considering these results and correlations, an alternative model was proposed, maintaining the five analytical levels but refining the variables included (Figure 2). At the first level, only the Compassion variable was retained, given its strong significance in the hypothetical model, along with the three Dark Triad traits, which correlated inversely with Compassion and positively and moderately among themselves. Narcissism was also retained due to its significant direct effects in the initial model. At the second level, only Selftranscendence and Selfenhancement values

were included, given their theoretical relevance and intercorrelation. The final three levels—Empathic Concern, APS, and Prososocialproductivity—were maintained due to their direct and significant associations.

The refined model yielded significantly better fit indices: $\chi^2/df = 1.691$, CFI = .989, NFI = .975, RMSEA = .037. All structural paths were significant, and the model provides a more parsimonious representation of the relationships among variables.

From the first to the second level, Compassion predicted Selftranscendence ($\beta = 0.225$, $p < .001$) and Selfenhancement ($\beta = -0.102$, $p < .05$), while Narcissism predicted Selfenhancement ($\beta = 0.392$, $p < .001$). At the third level, Compassion ($\beta = 0.445$, $p < .001$), Psychopathy ($\beta = -0.094$, $p < .05$), Machiavellianism ($\beta = -0.080$, $p < .05$), and Selftranscendence values ($\beta = 0.149$, $p < .001$) influenced Empathic Concern. At the fourth level, Compassion ($\beta = 0.269$, $p < .05$) and Empathic Concern ($\beta = 0.220$, $p < .001$) influenced APS. Finally, at the fifth level, Compassion ($\beta = 0.191$, $p < .001$), Selfenhancement values ($\beta = 0.104$, $p < .01$), Empathic Concern ($\beta = 0.202$, $p < .001$), and APS ($\beta = 0.431$, $p < .001$) influenced Prososocialproductivity.

6. Discussion

According to the path analysis results, the findings can be interpreted through the identification of a dual model comprising two contrasting pathways that explain the process of prosocial-productivity among entrepreneurs. This dual model complements and extends existing fields of knowledge on entrepreneurial phenomena with both social and productive effects. The first pathway, labeled the *genuine path*, reflects psychological attributes that are theoretically coherent with the concept of prosocial-productivity. This pathway unfolds across the five theoretical levels of the

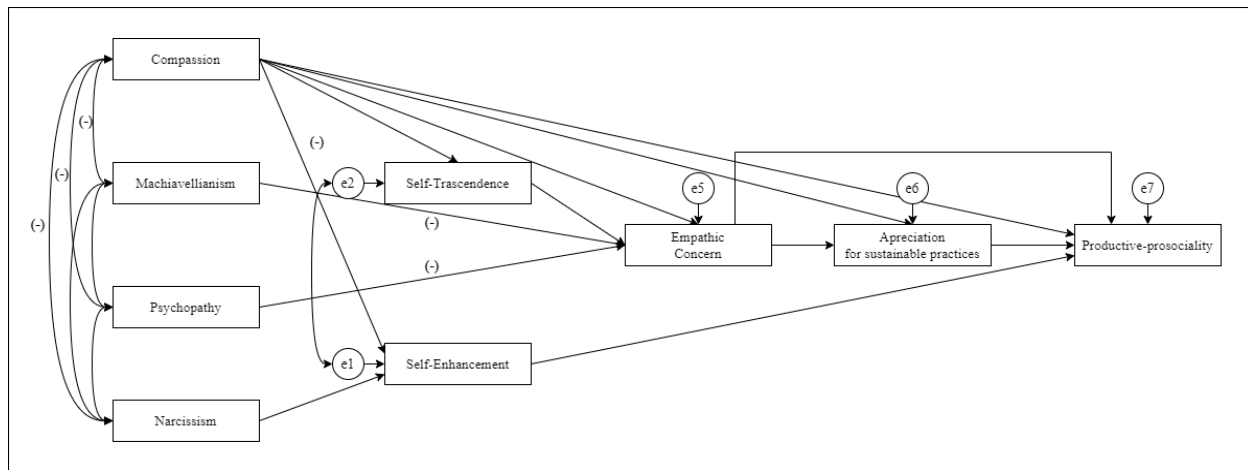


Figure 2. Alternative Model

Source: own elaboration

model, beginning with the personality trait of compassion. The second pathway, labeled the *dark shortcut*, involves only three variables from the conceptual model and begins with narcissism. It suggests that traits associated with the Dark Triad may converge toward productive-prosocial behaviors through more instrumental psychological configurations. The model is examined in light of the theoretical framework.

The genuine path is primarily driven by compassion, a specific aspect of Agreeableness within the Big Five model (DeYoung, Quilty, & Peterson, 2007), which reflects an individual's capacity to recognize, understand, and respond to the needs of others through cooperation and care. This personality trait exerts influence across multiple levels of the proposed model, shaping prosocial entrepreneurial tendencies and aligning with prior research linking empathic dispositions to socially oriented entrepreneurial action (Hossain et al., 2021; Jadmiko et al., 2024).

At the first step, compassion correlates negatively with all three traits of the Dark Triad, reinforcing established theories suggesting that kindness, empathy, and consideration for others are absent or minimal in individuals with high Machiavellianism, narcissism, or psychopathy (Kaufman et al., 2019; Stead & Fekken, 2014). This supports H1, which proposed an inverse association between compassion and selfenhancement-oriented traits. The finding also aligns with research indicating that the emotional coldness and manipulative tendencies inherent to the Dark Triad contrast sharply with prosocial entrepreneurial orientations (Jonason & Krause, 2013; Furtner et al., 2011; Hmieleski & Lerner, 2016; Do & Dadvari, 2016).

At the second step, compassion has a direct effect on selftranscendence values, which are associated with seeking the wellbeing of others (Schwartz, 2010; Lönnqvist et al., 2013; Bardi & Schwartz, 2003), and an inverse effect on selfenhancement values, characterized by the individualistic pursuit of achievement and power (Schwartz et al., 2012; ParksLeduc et al., 2015). These associations are consistent with theoretical models describing how individuals seek behavioral consistency, aligning personality traits with their core beliefs (Angrim

et al., 2017; Fischer & Boer, 2015; Schwartz & Butenko, 2014). As values become more cognitively accessible, they adjust to an individual's selfconcept, which is shaped by personality and sociocultural influences (Caprara et al., 2011; ParksLeduc et al., 2015). Accordingly, individuals who value kindness tend to distance themselves from competitive or selfcentered goals (Roccas & Sagiv, 2017; Sørtheix & Schwartz, 2017). This stage further supports H1.

At the third level of the model, compassion and selftranscendence values directly influence the cognitive-affective variable of empathic concern, which involves recognizing oneself as a caring person who is moved by the misfortune of others (Batson, 1998; Decety & Jackson, 2006; Schwartz, 2010). This psychosocial construct is conceptualized as a rationalemotional disposition that can be developed and strengthened in adulthood (Goetz et al., 2010; Weng et al., 2018; Sørtheix & Schwartz, 2017). Compassion shows one of the strongest associations with empathic concern, and selftranscendence values reinforce this disposition, supporting H3 (Mair & Noboa, 2006; Miller et al., 2012; Lönnqvist et al., 2013). Higher levels of empathic concern among entrepreneurs facilitate orientation toward APS in the fourth relationship of the model, highlighting the connection between prosocial motivation and sustainable business strategies (Cartwright & Craig, 2006; Vera et al., 2019).

As explained, APS is an attitudinal variable identified in entrepreneurs—particularly those with a social purpose—which entails the deliberate integration of ethical strategies to achieve a triple bottom line (social, environmental, and economic) (Nga & Shamuganathan, 2010; Savitz & Weber, 2006; Vera et al., 2019). This approach reflects an awareness of the interconnectedness of actions and a commitment to minimizing negative externalities while maximizing sustainable value creation (Caballero et al., 2014; Kuckertz & Wagner, 2010). The capacity for moral judgment inherent in APS is directly linked to a socially responsible, empathic, and compassionate entrepreneurial vision, ensuring consideration of all stakeholders who may

be affected by the venture (London, 2008; Nicholls, 2006). These findings are consistent with H4, which proposed that empathic concern predicts a stronger appreciation for sustainable practices.

Finally, APS, empathic concern, and compassion exert a direct and positive influence on the output variable of prosocial productivity. At this final step, the genuine path is completed, following a coherent, theoretically expected interaction among the variables—all of which converge on the orientation toward prosocial action (Miller et al., 2012; Schwartz & Butenko, 2014; Wang et al., 2024). Within prosocial productivity, conceptualized as a behavioral variable, the commitment to the greater good materializes through solidarity-driven, participatory, and value-generating practices at both individual and organizational levels (Bacq & Alt, 2018; Peredo et al., 2017). As the model demonstrates, these behaviors are strongly anchored in compassion, reinforcing a sustainable, socially responsible entrepreneurial mindset (Lönnqvist et al., 2013; Weng et al., 2018). These findings confirm H5, which proposed that APS, compassion, and empathic concern each predict productive prosocial behavior.

Pleasantness as a general trait is identified in social entrepreneurs and individuals with social entrepreneurial intentions (Caballero et al., 2014; Nga & Shamuganathan, 2010), impacting the performance and productivity of their organizations (Liang et al., 2015; Wood, 2012). Compassion, by contrast, is addressed as a critical process for motivating social entrepreneurship (Miller et al., 2012; Zahra et al., 2009), providing emotional, cognitive, and behavioral support in the pursuit of justice and social good (Cater et al., 2017; Ruskin et al., 2016). Miller et al. (2012) proposed that compassion influences entrepreneurial action through a three-stage process: (1) an increase in integrative thinking, conceptually related to APS, which enables entrepreneurs to develop sustainable and socially responsible solutions (Hossain et al., 2021; Nicolás & Rubio, 2022); (2) the elaboration of prosocial judgments, where entrepreneurs evaluate the cost-benefit tradeoffs of social entrepreneurship, often assuming greater personal and organizational risks than conventional entrepreneurs (Nicolás & Rubio, 2022; Wagemaker et al., 2023); and (3) an increase in commitment to others, fostering affiliation, wellbeing, and an enhanced self-concept (Wagemaker et al., 2023).

Thus, being a genuinely compassionate entrepreneur—which implies clear self-transcending values, empathic consideration, and awareness of sustainability—results in a powerful trigger for action to alleviate the suffering of others, promoting prosocial and productive behavior within the organization (Omoto et al., 2009; Miller et al., 2012; Weng et al., 2018).

Now, in parallel with the authentic path, the model reveals an alternative correlational route toward prosocial productivity. This shorter pathway, labeled the *dark shortcut*, is determined by the characteristics of the Dark Triad. At the first stage, narcissism, Machiavellianism, and psychopathy are directly correlated with one another and

inversely associated with the trait of compassion (Furtner et al., 2011; Jonason & Krause, 2013). This is consistent with the theoretical understanding that individuals who exhibit high levels of Dark Triad traits tend to lack empathy, consideration, and emotional responsiveness toward others (Kaufman et al., 2019; Stead & Fekken, 2014). These findings support H2, which proposed that Dark Triad traits would cluster together and show inverse associations with compassionate dispositions.

At the second level, narcissism is directly related to the value of self-enhancement, in line with findings on conventional entrepreneurs, whose values are predominantly oriented toward achievement, recognition, power, and self-direction (Moriano et al., 2001; Ormeño, 2014). These values align with narcissistic traits, which emphasize self-enhancement and dominance in competitive environments (Hmieleski & Lerner, 2016; Rauthmann & Kolar, 2013).

At the third level, Machiavellianism and psychopathy, albeit marginally, exert a negative influence on empathic concern. This is consistent with research linking these traits to manipulation, interpersonal exploitation, and the instrumentalization of others for personal gain (Akhtar et al., 2013; Kaufman et al., 2019; Stead & Fekken, 2014). This partial disruption of the model's core prosocial mechanism supports H6, which anticipated that Dark Triad traits would negatively affect the mediating role of empathic concern.

Finally, at the fifth level of the model, and bypassing the third and fourth stages, self-enhancement values exert a direct effect on prosocial productivity. This finding, consistent with prior associations between self-enhancement and narcissism, raises an important ethical concern: prosocial behaviors displayed along the dark shortcut pathway may function as instruments of self-promotion rather than as expressions of genuine concern for social welfare. Within this configuration, productive prosocial actions may serve to generate recognition, prestige, and admiration, thereby allowing entrepreneurs to pursue goals related to achievement, power, and hedonism (Rauthmann & Kolar, 2013; Miller et al., 2012). Although such behaviors may exhibit outwardly prosocial characteristics, they risk being strategically instrumentalized, potentially lacking authentic prosocial intention and serving predominantly self-oriented motives (Stead & Fekken, 2014; Hmieleski & Lerner, 2016). These findings highlight the need for further research examining the intentions and mechanisms underlying entrepreneurial responses that are framed as prosocial but may emerge from strategically self-serving orientations.

In the dark shortcut pathway, there is no empirical evidence of compassionate, self-transcendent, or empathic considerations toward others, nor of a sustained ethical commitment to sustainability within the structural configuration tested. Given that participants in this study were established entrepreneurs, the results suggest that this pathway may operate instrumentally, potentially oriented toward enhancing brand image and social status rather than originating from intrinsically prosocial motivations.

This contrasts with more naïve or admiration-seeking expressions of narcissism often observed in early-stage entrepreneurship and instead points toward a more strategic deployment of prosocial positioning for reputational gain. Such a mechanism resonates with what has been described as a charismatic presentation style, valued in entrepreneurial contexts yet negatively associated with responsible and considerate action toward others (Kraus et al., 2018; Hmieleski & Lerner, 2016). Conceptually, this configuration may be interpreted as consistent with a more self-interested entrepreneurial orientation, in which social needs are not necessarily approached from empathic or self-transcendent motivations but may also be framed as opportunities for strategic positioning (Manzano-Arrondo, 2016; Furtner et al., 2011). This interpretation should be treated as theoretically suggestive rather than conclusive, given the correlational nature of the data.

The dark shortcut also exhibits statistically significant interactions among the variables. One of the most notable is the positive association between self-enhancement values and prosocial-productivity. Correlation analyses suggest that this path arises primarily due to strong links between the Dark Triad traits and, crucially, the inverse interactions between compassion/empathic concern and Machiavellianism/psychopathy. This dynamic supports H7, which posited that prosocial-productivity can result from both authentic and instrumental psychological configurations.

The complex interaction among these variables carries a broader social implication. As the public benefits associated with prosocial-productivity become increasingly visible and socially valued, engagement in prosocially framed behaviors may expand independently of underlying dispositional orientations. In such contexts, prosocial and philanthropic practices may operate not only as expressions of social commitment but also as mechanisms of reputational signaling (Bereczkei et al., 2010; Heym et al., 2019; Miller et al., 2012). Under these conditions, prosocial positioning may become strategically adopted, raising concerns about the alignment between observable outcomes and the motivational foundations that sustain them.

Within this framework, entrepreneurs following the dark shortcut may, under certain conditions, share some features with patterns discussed in the literature on destructive entrepreneurship (Hmieleski & Lerner, 2016). This does not imply that the ventures examined in this study are destructive, nor that prosocial-productivity necessarily conceals self-serving motives. Rather, the findings suggest that externally prosocial behaviors may sometimes coexist with psychological configurations more strongly oriented toward profitability, achievement, or status (Acs et al., 2013; Baumol, 1990; Manzano-Arrondo, 2016). These results therefore highlight an interpretive ambiguity: similar behavioral outcomes may emerge from distinct psychological configurations. In institutional environments where prosocial narratives are socially valued, behavioral indicators alone may be insufficient to distinguish between motivations grounded in self-transcendence and those

shaped by strategic self-enhancement.

From this perspective, the results can be interpreted as reflecting what may be described as a *prosociality paradox* in entrepreneurship: the possibility that observable prosocial-productivity does not, by itself, reveal whether the underlying motivations are intrinsically oriented toward social value creation or strategically instrumental. Addressing this ambiguity requires future research that moves beyond self-reported dispositions, which are susceptible to social desirability, to incorporate multimethod designs, stakeholder evaluations, and contextual analyses capable of examining how institutional incentives and market dynamics may moderate these psychological pathways.

When self-declared practices formally emulate prosocial-productivity, an additional educational dimension emerges. It becomes relevant to examine whether targeted entrepreneurial training and ethical reflection programs can strengthen the value-based, empathic, and sustainability-oriented components that appear attenuated in the dark shortcut configuration. In this sense, entrepreneurial education may play a role not only in skill development but also in fostering greater coherence between social value creation and the motivational architecture that support it, although this was not within the specific scope of the present study.

In this regard, the correlations between sociodemographic data and the variables of the genuine pathway offer compelling reflections. In particular, all of these variables show inverse associations with the pursuit of profit, inviting a broader reconsideration of how success and value creation are conceptualized in entrepreneurship. This finding suggests that, if economic profit were no longer treated as the central imperative for evaluating entrepreneurial success, relevant changes in entrepreneurial behavior could be envisioned.

However, it is possible to generate and exchange value beyond profit maximization, provided that entrepreneurs adopt sustainable and compassionate decision-making frameworks that acknowledge the finite nature of economic and environmental systems (Hinton & Maclurcan, 2017). Consequently, prosocial-productivity, which prioritizes social value creation over financial imperatives, should be incorporated and reinforced in entrepreneurial education (EE). EE plays a crucial role in shaping the academic experiences and future professional trajectories of emerging entrepreneurs, fostering a mindset geared toward innovation and socially responsible business models (Lee et al., 2018; Neck & Corbett, 2018; Hossain et al., 2021).

The significant correlations between compassion, empathic concern, and prosocial-productivity with being a woman, in contrast to the associations between Machiavellianism, psychopathy, and self-enhancement with being a man, reveal a gender-based segmentation of entrepreneurial attributes. This reflects culturalist perspectives that assign traits such as consideration and care predominantly to women, highlighting the need to *feminize* entrepreneurial education in order to cultivate

a more ethical and inclusive productive environment (Afolabi, 2013; Chávez, 2019; Gilligan, 1985; Ormeño, 2014). The ethics of care, rooted in feminist moral philosophy, emphasizes relational moral judgment, in which empathy and compassion generate genuine concern for others' wellbeing. This approach integrates individual and collective needs through synergistic reasoning, fostering an interconnected and coresponsible perspective on entrepreneurship (Alvarado, 2004; Gilligan, 1985; Parks-Leduc et al., 2015). Entrepreneurial education that actively incorporates and promotes an ethics of care can enhance social awareness in business practices, strengthening collaborative networks that optimize entrepreneurial learning and innovation (Lee et al., 2018).

Beyond gender-based differences, the educational potential of fostering genuine attributes of prosocial productivity emerges as a critical issue, given that all the variables in the genuine path correlate positively with higher levels of education. The literature indicates that compassion and self-transcendence are psychosocial components of a primarily cognitive nature, making them susceptible to educational and sociocultural influences (Anýžová, 2017; Fischer & Boer, 2015; Parks-Leduc et al., 2015).

While values are typically understood as structurally ingrained at the individual level—requiring slow, generational shifts for cultural transformation—research suggests that specific conditions can accelerate this process (Manfredo et al., 2017). Schwartz (2010) argues that universalist values—which foster prosocial orientations—tend to develop later in life and are contingent upon exposure to diverse social groups, where individuals must learn to coexist with people outside their primary ingroup. Similarly, the awareness of environmental limitations and resource scarcity promotes environmental responsibility through latestage socialization (Schwartz, 1992, 2010).

Moreover, the link between values and prosocial behavior—particularly regarding emotional competencies such as empathy and compassion—is shaped by personal and social experiences that reinforce prosocial dispositions (Nelissen et al., 2007). Studies indicate that altruistic behavior increases alongside neurocognitive changes in response to suffering, supporting the idea that empathy and compassion can be systematically developed through training (Bankard, 2015; Lutz et al., 2008; Weng et al., 2018). This provides a strong foundation for further research on the integration of compassion and sustainability into entrepreneurial education, reinforcing a vision of entrepreneurship grounded in ethical responsibility, social empathy, and long-term sustainability (Miller et al., 2012).

7. Conclusions

The analysis successfully fulfilled the objective of proposing a conceptual model that examines the psychological correlates predicting prosocial productivity. The two identified paths provide a structured understanding of the psychological characteristics distinguishing

entrepreneurs who engage in prosocial behaviors either genuinely or instrumentally. Additionally, the results validate the prosocial productivity scale, offering a valuable tool for assessing and fostering social and environmentally responsible entrepreneurship.

A key reflection on these two paths is that each is driven by a distinct personality trait: compassion in the *genuine* path and narcissism in the *dark shortcut*. Understanding the role of personality in entrepreneurship raises essential questions about whether entrepreneurs are born or shaped through cognitive and social influences that refine psychological traits over time (Cantner et al., 2017). It is also crucial to explore how socialization processes reinforce or inhibit specific traits based on contextual expectations of entrepreneurial behavior (Luca, 2017).

However, the ethical paradox revealed by the dark shortcut path requires further exploration. While studies have examined both bright and dark aspects of personality, there remains a gap in the literature addressing their interplay within entrepreneurial contexts (Kaufman et al., 2019). This study contributes to bridging that gap by posing a fundamental question: *does appearing to be a productive prosocial entrepreneur lead to the same social and economic outcomes as genuinely embodying these principles?* This ethical dilemma should be a critical point of discussion within business education, where a substantial portion of future entrepreneurs and business leaders are trained.

From an ethical standpoint, although both paths lead to prosocial productivity as an outcome, the processes underlying them differ fundamentally. The instrumental logic of the dark shortcut fails to challenge or transform a problematic economic system; rather, it perpetuates the privileges of philanthropic elites. These elites leverage the moral legitimacy of the market to sustain invisible forms of violence and structural exclusion, maintaining a pacifying but exploitative status quo (De Wolf, 2012; Pinker, 2011; Žižek, 2009). In entrepreneurial education (EE)—which shapes mindsets and capabilities toward venture creation (Neck & Corbett, 2018)—it is essential to expose these contradictions and foster an integral entrepreneurial outlook committed to addressing systemic inequality and injustice.

In a socioeconomic context such as Peru's, these findings take on particular significance. The informal and survivalist structure of Peru's productive system often leads individuals to entrepreneurship as a necessity, not as a proactive economic choice. This environment normalizes exploitative practices, where prosociality becomes a façade masking self-serving interests under community-oriented discourse. In emerging and informal economies like Peru's, the individualistic and competitive ethos of capitalism encourages tax evasion, the denial of labor rights, and the dismissal of social and environmental responsibility (Adams et al., 2019).

The findings underscore the importance of strengthening entrepreneurial education that cultivates care-oriented forms of entrepreneurship. Prior research indicates that entrepreneurial education directly shapes students'

mindsets, value orientations, and competencies (Lee et al., 2018). In this regard, fostering empathic concern and compassion should not be restricted to programs explicitly labeled as social entrepreneurship but should constitute a transversal component of business training more broadly. Integrating relational, carecentered, and collective wellbeing perspectives into entrepreneurial curricula may contribute to expanding prevailing definitions of success beyond purely financial performance indicators.

Rather than positioning profit as the sole evaluative benchmark of entrepreneurial achievement, educational programs may benefit from incorporating frameworks that balance economic viability with social value creation and sustainability considerations. Such an approach does not negate the relevance of financial performance; instead, it situates it within a broader ethical and societal framework. From this perspective, entrepreneurial education can play a formative role in strengthening valuebased orientations that support authentic prosocial-productivity, reducing the likelihood that socially valued practices are adopted solely for reputational or instrumental purposes.

7.1 Limitations and future research

Several limitations should be acknowledged. First, the crosssectional design precludes causal inferences; therefore, the proposed path model should be interpreted as testing theoretically grounded associations rather than directional causal processes. Future longitudinal or multiwave studies would allow examination of the temporal sequencing of these psychological pathways and the stability of the identified configurations over time.

Second, although the sampling frame was constructed from an extensive database of more than 1,500 ventures across diverse sectors in Peru, the final sample was obtained through nonprobability procedures. Consequently, statistical generalizability to the broader population of Peruvian entrepreneurs is limited. Future research employing probabilistic or nationally representative sampling strategies would enhance external validity and robustness.

Third, although statistical analyses suggested that common method variance was not a dominant threat, all variables were measured through selfreport instruments administered at a single time point. In addition, no explicit scale of social desirability or impression management was included. Given the morally sensitive nature of constructs such as prosociality and Dark Triad traits, future studies should incorporate desirability controls, multiinformant data, and behavioral or objective performance indicators to strengthen validity.

Fourth, several scales in the study showed moderate internal consistency coefficients. In particular, the facets of Politeness ($\alpha = .60$) and Withdrawal ($\alpha = .65$), corresponding to the Big Five model, and the Empathic Concern Scale ($\alpha = .66$) fell below the conventional .70 threshold, while the facets of Volatility ($\alpha = .67$) and Openness to Experience ($\alpha =$

.66) were close to that threshold. Although these values are consistent with those reported in the Peruvian validation of the BFAS conducted by León et al. (2017), where coefficients ranged from .61 to .81, and with the usual ranges of the Interpersonal Reactivity Index in Spanishspeaking samples (Mestre et al., 2004), they may introduce attenuation in the estimation of structural effects involving these facets.

This psychometric variability aligns with metaanalytic evidence showing that selfreport instruments may present imperfect equivalence across cultural contexts (Mezulis et al., 2004), particularly when the original conceptual frameworks were developed in AngloSaxon samples and later applied to populations whose selfconstruals and selfpresentation norms differ from those contexts. This consideration is particularly relevant for pathways involving Empathic Concern as a mediating variable, whose coefficients may be underestimated in magnitude without affecting the direction of the reported associations. Future research would benefit from developing or adapting psychometrically stronger instruments for these constructs in Peruvian contexts, as well as from using latent measurement models with multiple indicators that correct for reliability effects on structural parameter estimation.

Fifth, the study was conducted within the Peruvian context. Although this setting offers theoretical relevance for examining emergingmarket entrepreneurship, crosscultural comparative studies are necessary to determine whether the identified genuine and dark shortcut pathways replicate across diverse institutional and cultural environments.

Finally, the present model focuses primarily on intraindividual psychological variables. Future research should examine contextual and institutional moderators—including stakeholder evaluations, regulatory frameworks, market incentives, and organizational cultures—that may amplify or attenuate these pathways. Extending the concept of prosocial-productivity into executive education research and practicebased inquiry could provide actionable insights for designing interventions that promote coherent integration between social value creation and entrepreneurial performance. Such developments may also inform public policy initiatives aimed at evaluating and fostering authentic forms of socially responsible entrepreneurship.

Conflict of interest

The authors declare no conflict of interest.

AI Disclosure Statement

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