

# Personality Traits and Sustainable Development Projects: A Literature Review of the Conceptual Framework for Project Managers

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## Abstract

This paper demonstrates the personality traits (PTs) of project managers (PMs) that have a positive impact on the delivery of sustainable development (SD) projects. A pertinent literature review is performed to determine the PTs that result in the successful adoption and implementation of projects. Then, this has been narrowed down to focus on the PMs' PTs that have a positive impact on the delivery of SD projects. Based on the different arguments, the primary purpose of this investigation is to provide a conceptual framework that illustrates the PMs' PTs that positively influence the delivery of SD projects. The exploration indicates that there are five main categories of PMs' PTs that influence the success of SD projects that are extraversion, agreeableness, conscientiousness, emotional stability, and openness to experience. As a result, this research provides a conceptual framework inclusively for PMs, to relate the found PTs to the efficacious completion of SD projects. Primarily, the study conceptual framework explains that PMs who acquire the found PTs have a higher potential to efficiently deliver SD projects.

## Keywords

Project Manager, Personality Traits, Sustainable Development

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## 1. Introduction

Project managers' personality traits have not received satisfactory level of attention in the project management or sustainable development literature (Di Fabio & Saklofske, 2019; Khan et al., 2021). As a result, this has created a challenge for

human resource (HR) professionals in selecting the most capable PM to be assigned in SD projects (Skulmoski & Hartman, 2010). At the same time, there is a lack of effective professional development training that is well-developed to enhance the outcome of PMs in SD project by enhancing their PTs' utilization (Ahsan et al., 2013). Therefore, to clarify the needed competencies, this study aims to identify the PMs' PTs required to efficiently deliver SD projects, and represent the findings in a conceptual framework.

Personality is an individual's distinctive pattern of thoughts, emotions, and behaviours, yet there are psychological mechanisms that lead to those patterns (Barza & Galanakis, 2022; Danja et al., 2021; John & Srivastava, 1999; Stock et al., 2016). While, "personality traits" are defined as the fairly continuing patterns of thoughts, feelings, and behaviours that differentiate individuals and shape individuals' tendency to respond in certain ways under different circumstances (Danja et al., 2021; Furnham & Crump, 2015; Golsteyn & Schildberg-Hörisch, 2017; Yan & Gao, 2016). Concerning PMs, PTs are seen as stable characteristics that allow them to make adequate decisions and provide accurate measures in percentages (Abid et al., 2021; Barza & Galanakis, 2022; Dilchert, 2018). The "Big Five personality traits model" is the most widely spread model to study individuals' PTs (Barza & Galanakis, 2022; Costa Jr. & McCrae, 1992). This model presents important categorizations and measures to study the PTs' differences among PMs (Costa Jr. & McCrae, 1992). Bearing in mind that the big five PTs are: extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience (Barza & Galanakis, 2022; Danja et al., 2021; Furnham & Crump, 2015; Costa Jr. & McCrae, 1992; Yan & Gao, 2016). The personality traits that work constructively for PMs are: extraversion, agreeableness, conscientiousness, emotional stability (opposite of neuroticism), and openness to experience (Barza & Galanakis, 2022; Costa Jr. & McCrae, 1992; Yan & Gao, 2016). Hence, understanding and analysing PMs' PTs is very important, as they have a high stability over time that could indicate how successful or unsuccessful they could be in a particular project context (Golsteyn & Schildberg-Hörisch, 2017).

PMs' PTs are characteristics that are related to the successful achievement of SD projects (Di Fabio & Saklofske, 2019; Khan et al., 2021; Pelster & Schaltegger, 2021). In detail, PMs' personality traits can be used to realize favorable SD outputs (Abid et al., 2021; Di Fabio & Saklofske, 2019; Dilchert, 2018). The reason is that effective PTs, such as extraversion, agreeableness, conscientiousness, emotional stability, and openness to experience, allow PMs to craft SD visions, analyze future alternative, understand the complexity of various systems, and develop effective strategies (Dilchert, 2018; Khan et al., 2021; Pelster & Schaltegger, 2021). Further, acquiring effective PTs enables PMs to realize objectives, share knowledge; motivate themselves and others; learn from existing and previous projects; encourage socio-economic development; secure SD practices; solve real-world problems; develop innovative practices; and committed to attain better environmental, social, and economic outcomes (Abid et al., 2021; Di Fabio &

Saklofske, 2019; Pelster & Schaltegger, 2021). PMs with needed PTs have a high chance to make decisions about what should or should not be done, and under what circumstances, in SD projects (Di Fabio & Saklofske, 2019; Dilchert, 2018; Khan et al., 2021).

On the other side, SD projects focus, specifically, on environmental protection, social equity, and economic growth (Chundu et al., 2022; Govindharaj, 2021; Sakalasoorya, 2021; Sepetis et al., 2020). But, in general, they aim to meet the needs of present generations without compromising the needs of future generations (Ciegis et al., 2011; Govindharaj, 2021; Sakalasoorya, 2021). Thus, these SD goals need to be integrated in one main strategy that covers environmental protection, social inclusion, and economic growth in any sustainable development project (Chundu et al., 2022; Ciegis et al., 2011; Fukuda-Parr & Muchhala, 2020). In particular, SD projects aimed to encourage current generations to meet their needs without compromising the ability of future generations to satisfy their needs (Fukuda-Parr & Muchhala, 2020; Sakalasoorya, 2021; Secundo et al., 2020). In specific, the SD projects provide adequate responses to existing and anticipated issues (such as climate change, pandemics, poverty, and desertification) that have potential harmful impact on the environment, society, or the economy (Hassan, 2022; Sakalasoorya, 2021; Sepetis et al., 2020).

The study of the PMs' PTs that lead to a positive delivery of SD projects is significant. In support, such findings add to the body of knowledge in the fields of PTs and SD literature through providing an integrative view of the PMs' PTs that positively influence the adoption and completion of SD projects (Khan et al., 2021; Pelster & Schaltegger, 2021). This also helps academics in human resources (HR) and social behavior studies in understanding PMs' PT required to deliver successful SD projects (Ahsan et al., 2013; Skulmoski & Hartman, 2010). In other words, HR professionals can use the findings of this research for recruitment and professional development purposes, as the needed PTs can be considered when evaluating PMs during resume screening, interviewing, and reference checking (Judge et al., 2002; Skulmoski & Hartman, 2010). Further, a guideline can be prepared to identify the required PMs' PT for SD projects (Ahsan et al., 2013). Such guidelines can help HR managers perform better in the recruitment process, especially, when they prepare a job advertisement for a PM position, for a particular SD project (Ahsan et al., 2013; Judge et al., 2002). Moreover, identifying PTs required for SD projects help in understanding PMs' strengths and weaknesses, thus, making adequate plan for their future professional development training (Ahsan et al., 2013; Furnham & Crump, 2015; Judge et al., 2002).

Though personality traits and sustainable development are widely explored fields in existing literature (Abid et al., 2021; Di Fabio & Saklofske, 2019; Dilchert, 2018; Khan et al., 2021; Pelster & Schaltegger, 2021), it is found out that there is a lack of knowledge about the impact of PMs' PTs on the successful completion of SD projects. This study aims to fill this gap through demonstrating the required PMs' PTs to deliver SD projects and introducing a conceptual

framework that represents the found associations.

## 2. Methodology

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 flow diagram, for systematic literature reviews methodology introduced by Page et al. (2021), was adopted in this study, as illustrated in Figure 1. In justification, the PRISMA was proven to be focused on analyzing literature reviews and assessing the various effects of interventions (Aczel et al., 2020; Page et al., 2021). It is also considered as a foundation for reporting systematic reviews with objectives other than evaluating interventions, such as developing a conceptual or theoretical framework (Aczel et al., 2020; Page et al., 2021). Primarily, the literature review was based on the “Handbook of personality: Theory and research (2nd ed)” book plus peer-reviewed articles published in scientific journals. The inclusion criteria focused on past studies that discuss PMs’ PTs and SD projects. So, these were key terms (PMs’ PTs and SD project) used to search for pertinent articles from Abu Dhabi University (ADU) Online Library and Google Scholar. Henceforth, the researcher collected a total of eighty-two studies, the book and eighty-one peer-reviewed articles that are related to PMs’

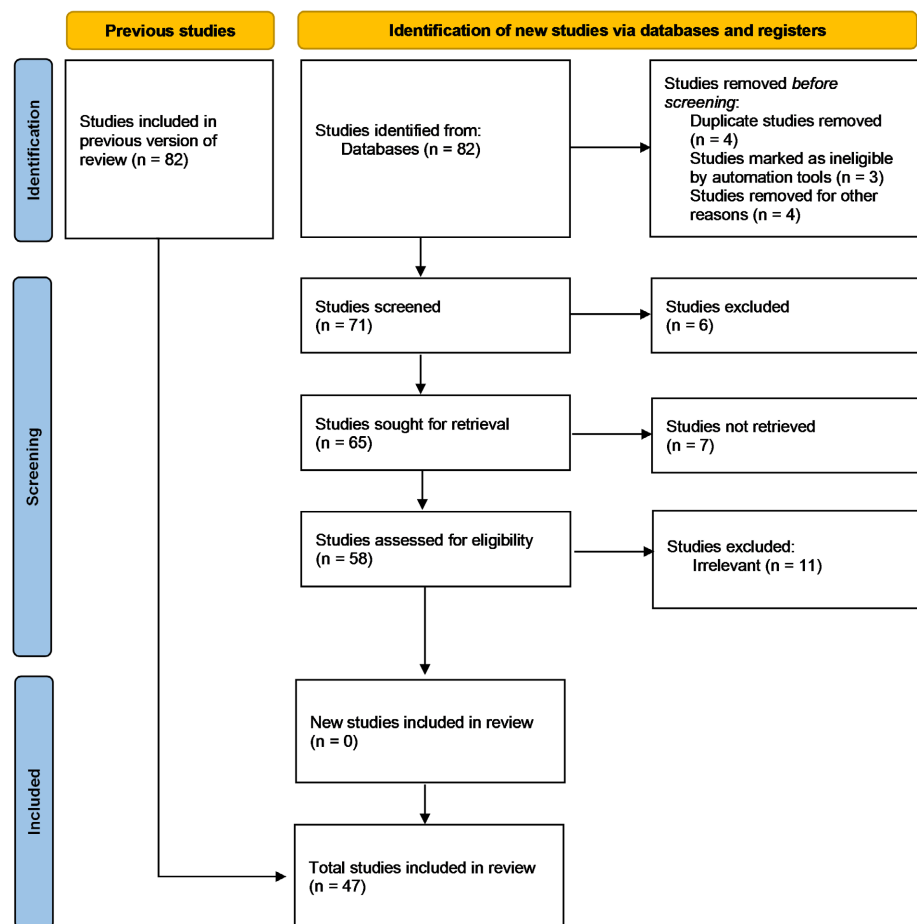


Figure 1. PRISMA 2020 diagram for the study literature review (Page et al., 2021).

PTs and SD fields. The book and forty-six articles (a total of 47 studies) were found to be rich in content and relevant to the research framework, to support the arguments of the research.

To perform an efficient analysis, the author used PRISMA 2020 Checklist research criteria initiated by [Aczel et al. \(2020\)](#) to check the research criteria. In the beginning, eighty-two studies (a book and eighty-one articles) were screened by the author. The book was found to be very relevant, while thirty-five articles were irrelevant. These irrelevant articles were excluded after conducting a content verification process. Forty-seven studies (including a book and the remaining forty-six articles) were inspected for eligibility. Then, the outcome of the forty-seven studies was analyzed and used to develop the conceptual framework of the study. Ultimately, the conceptual framework covered several arguments and findings that were taken from these articles, to represent the PMs' PTs that have a positive impact on the delivery of SD projects ([Abid et al., 2021](#); [Di Fabio & Saklofske, 2019](#); [Dilchert, 2018](#); [Khan et al., 2021](#); [Pelster & Schaltegger, 2021](#)).

### 3. Literature Review

#### 3.1. Project Managers' Personality Traits

Personality is an individual's distinctive pattern of thoughts, emotions, and behaviours, yet there are psychological mechanisms that lead to those patterns ([Barza & Galanakis, 2022](#); [Danja et al., 2021](#); [John & Srivastava, 1999](#); [Stock et al., 2016](#)). Personality is a unique combination of thoughts, feelings, and behaviours in each individual that describes individual's pattern of interaction with the surrounding environment, which covers human and nonhuman elements (i.e. physical environment, work conditions, and organizational demands) ([Atalah, 2014](#)). Personality involves "broad dimensions of individual differences between people, accounting for inter-individual consistency and continuity in behaviour, thought, and feeling across situations and over time" ([McAdams & Pals, 2006](#); p. 207). Besides, traits are continuous dimensions on which an individual's differences may be quantitatively measured using the overall number of attributes a person exhibits ([Atalah, 2014](#)). In psychology, the term "personality trait" is defined as the fairly continuing patterns of thoughts, feelings, and behaviours that differentiate individuals and shape peoples' tendency to respond in certain ways under different circumstances ([Roberts, 2009](#)). However, PTs of PMs are seen as stable characteristics that allow them to make adequate decisions and provide accurate measures in percentages ([Yilmaz et al., 2017](#)). The PTs have high level of stability over time ([Golsteyn & Schildberg-Hörisch, 2017](#)), which indicates that PMs who have the desired PTs will most likely be able to provide a successful outcome overtime.

The "Big Five personality traits model" is the most widely spread model to study individuals' PTs. This model illustrates a minimal overlap and presents important measures to study the PTs' differences among individuals ([Barza & Galanakis, 2022](#); [Costa Jr. & McCrae, 1997](#)). The big five PTs are openness to

experience, extraversion, conscientiousness, agreeableness, and neuroticism (Judge et al., 2002; LePine & Van Dyne, 2001; McCrae & Costa Jr., 1985; Zhao & Seibert, 2006). Where, openness to experience describes PMs' ability to be intellectually curious and tendency to explore new ideas, experiences, and opportunities (Barza & Galanakis, 2022). A high level of openness to experience implies that a project manager is creative, imaginative, curious, and unconventional (Hassan, 2022; John & Srivastava, 1999; McCrae & Costa Jr., 1985; Stock et al., 2016), while, a low level of openness to experience indicates that a project manager has little interests, traditional unanalytical, and unadventurous (Golsteyn & Schildberg-Hörisch, 2017; Hassan, 2021; McCrae & Costa Jr., 1987). Extraversion defines the extent to which PMs are assertive, active, enthusiastic, energetic, and dominant (Zhao & Seibert, 2006). Extravert PMs prefer to be with others and enjoy social events, while introvert PMs present a low level of social engagement (Barza & Galanakis, 2022; LePine & Van Dyne, 2001). Conscientiousness refers to a PMs' degree of persistence, motivation, organization, and hard work in the pursuit of goals achievement (Zhao & Seibert, 2006). PMs with high levels of conscientiousness show inspiration to achieve goals, self-discipline, loyalty, and preference for thoughtful and systematic behaviours (Barrick et al., 2001; Hassan, 2022). Agreeable PMs are compliant, modest, forgiving, trusting, tolerant, soft-hearted, and present a high quality of interpersonal interactions (Barrick et al., 2001; Hassan, 2021). Agreeableness also represents PMs' interpersonal orientation, involving a high tendency to prefer collaborations and constructive interpersonal relationships (Zhao & Seibert, 2006). Finally, Neuroticism stands for PMs' tendency to show poor emotional adjustments and experience negative effects, such as insecurity, anxiety, and aggressiveness (Judge et al., 2002). PMs with a high level of neuroticism tend to be anxious and frequently demonstrate negative attitudes, and cooperate less with others in social situations (LePine & Van Dyne, 2001). While, PMs with emotional stability (the opposite of neuroticism) tend to be patient, calm, secure, and attuned (Barza & Galanakis, 2022; McCrae & Costa Jr., 1987).

In addition to the "Big Five" personality traits, scholars have mentioned other categorizations for PMs' PTs (Barza & Galanakis, 2022; Judge et al., 2002; LePine & Van Dyne, 2001; Zhao & Seibert, 2006). For example, Dvir, Sadeh and Malach-Pines (2006) have identified sixteen PMs' PTs that are intuition perceiving, introversion, investigative, enterprising, type A, secure, avoidant, anxious-ambivalent, open to experiences, entrepreneurial risk, investment risk, organizational risk, entrepreneur, manager, and rebellious dreamer; whereas, Creasy and Anantatmula (2013) have pointed out some key PTs for PMs such as communication, innovativeness, conflict management, and self-control. Horverak et al. (2013) have emphasized five multicultural PTs needed for outstanding PMs that are open-mindedness, cultural empathy, flexibility social initiative, and emotional stability. Yet, Miulescu (2013) has added that conceptual fluency, work orientation, insightfulness, and achievement via conformism are key PTs for

PMs. Further, Bakker-Pieper and de Vries (2013) have demonstrated a different set of PMs' PTs that are extraversion, conscientiousness, agreeableness, openness, emotionality, honesty-humility, expressiveness, preciseness, verbal aggressiveness, questioning, emotionality, impression, manipulateness, leader performance, satisfaction with leader, intention to leave, leader-member exchange relations, and trust in the leader. Then, Nichols and Cottrell (2014) highlighted another set of PMs' PTs that are agreeableness, ambition, assertiveness, compassion, confidence, conscientiousness, cooperativeness, courage, emotional stability, extraversion, intelligence, open-mindedness, supportiveness, trusting, and trustworthiness. Simultaneously, Atalah (2014) has found a comprehensive list including numerous PMs' PTs such as achievement striving, agreeableness, assertiveness, communications, competence, compliance, conceptual ability, conscientiousness, deliberation, dutifulness, excitement-seeking, extraversion, and gregariousness. Nevertheless, in their study, Espiritu-Olmos and Sastre-Castillo (2015) have considered seven main PTs in the analysis model that they have developed, which are kindness, need for achievement, risk, extroversion, inner control, neuroticism, and tolerance for ambiguity. Eventually, PTs are continuous dimensions, on which project managers' differences may be quantitatively measured through numerous attributes that a PM can exhibit (Zhao & Seibert, 2006).

### 3.2. Sustainable Development Projects

Sustainable development is a widely spread concern of people around the world (Chundu et al., 2022; Govindharaj, 2021; Sakalasoorya, 2021; Secundo et al., 2020; Sepetis et al., 2020).

Majority of the world's recent scholars agree that the delivery of SD is based on the successful attainment of environmental protection, social inclusion, and economic growth (Chundu et al., 2022; Ciegis et al., 2011; Sepetis et al., 2020). Specifically, SD is concerned about spreading equity among societies; transforming national economies and reforming in global economy; and protecting the environment (Chundu et al., 2022; Fukuda-Parr & Muchhala, 2020). In particular, Secundo et al. (2020) have clarified that SD involves a wide variety of issues such as biodiversity, energy, climate change, gender, education, security, peace, healthcare, equity, economic growth, food supply, and sustainable consumption and production. Here, it is essential to point out that sustainable development projects are designed to find effective solutions to such outstanding challenges and handle them efficiently to deliver the main (environmental, social, and economic) goals of SD (Govindharaj, 2021; Hassan, 2020; Sakalasoorya, 2021; Secundo et al., 2020). Further, SD projects are aimed to enable present generations to meet their needs without compromising the capacity of future generations to meet their needs (Chundu et al., 2022; Sepetis et al., 2020). SD projects also respond to current as well as future problems such as pandemics, poverty, desertification, climate change, and war that are, commonly, presenting high levels of damage, urgency, and complexity potential (Chundu et al., 2022;

Fukuda-Parr & Muchhala, 2020; Govindharaj, 2021; Hassan 2020; Sakalasooriya, 2021; Secundo et al., 2020). SD projects initiate conversations and partnerships between local governments and their communities. Such a partnership is important, as it allows PMs to act as key players in local development. These partnerships also help PMs to feel responsible for vision, directions, laws, policies, and regulations of SD projects. In addition, moving toward SD projects requires more transparent decision-making and procedures that encourage a wide range of stakeholders' participation, to effectively implement SD (environmental, social, and economic) targets (Chundu et al., 2022; Govindharaj, 2021; Sakalasooriya, 2021; Sepetis et al., 2020).

### 3.3. PMs' PTs and SD Projects

Project managers' personality traits have a high tendency to influence the delivery of sustainable development projects (Di Fabio & Saklofske, 2019; Khan et al., 2021; Pelster & Schaltegger, 2021). Abid et al. (2021) have agreed that there are associations between PMs' PTs and the successful delivery of SD projects (Pelster & Schaltegger, 2021). In clarification, the PMs' PTs influence the success of each stage in SD projects, considering that the means of influence may differ significantly from one phase to another (Abid et al., 2021; Di Fabio & Saklofske, 2019). For example, taking into consideration the big five PTs model: openness to experience and extraversion influence PM's creativity and innovativeness levels (Barza & Galanakis, 2022; Judge et al., 2002). Conscientiousness influences the PMs' ability to be organized in their thoughts, plans, and actions (Barza & Galanakis, 2022; LePine & Van Dyne, 2001). Agreeableness correlates positively to the implementation of SD projects (Di Fabio & Saklofske, 2019; Hassan, 2020; Khan et al., 2021). Similarly, emotional stability has a positive relationship with the accomplishments of SD projects (Barza & Galanakis, 2022; Di Fabio & Saklofske, 2019). Other scholars have agreed that PMs who are open to experience can have more creative ideas; PMs who are introverted and conscientious can implement ideas in a form of product prototype; and PMs who acquire a high level of conscientious can diffuse their innovations (Stock et al., 2016). Furthermore, PMs' PTs can impact the successful accomplishment of SD projects at all phases starting from idea creation, prototyping, diffusion, and to the efficient implementation of technologies (Dilchert, 2018; Hassan, 2022; Khan et al., 2021; Pelster & Schaltegger, 2021). However, as illustrated by John & Srivastava (1999), the PMs' PTs possibilities are: extraversion or introversion; agreeableness or antagonism; conscientiousness or lack of direction; neuroticism or emotional stability; and openness or closeness to experience.

#### 3.3.1. Extraversion versus Introversion

The "extraversion versus introversion" category of PTs includes gregariousness (sociable), assertiveness (forceful), activity (energetic), excitement-seeking (adventurous), positive emotions (enthusiastic), and warmth (outgoing) (Costa Jr. & McCrae, 1992). An extraversion individual presents all of these PTs, while an



introverted individual may lack some or all of them (McCrae & Costa Jr., 1987; Costa Jr. & McCrae, 1992). However, successful PMs acquire extraversion PTs, as it allows them to communicate effectively with all project stakeholders (Barza & Galanakis, 2022; LePine & Van Dyne, 2001). In particular, gregarious PMs can support innovation by making social efforts and removing social barriers that can prevent the adoption or completion of innovation (Abid et al., 2021; Hassan, 2020). Assertive PMs are confident when presenting their ideas and applying their skills in new and unconventional situations (Abid et al., 2021; Di Fabio & Saklofske, 2019; Dilchert, 2018; Khan et al., 2021; Pelster & Schaltegger, 2021). Active PMs seek out new ideas and sell them enthusiastically (Di Fabio & Saklofske, 2019). Excitement-seeking PMs are willing to take a risk to implement successful innovation in projects (Dilchert, 2018). PMs, who have positive emotions toward themselves as well as others in different project settings, look for new ideas and opportunities to implement them eagerly (Hassan, 2021; Khan et al., 2021). While, the warmth characteristic helps PMs take up new ideas and overcome pressures to turn such ideas into fruitful innovations (Abid et al., 2021; Di Fabio & Saklofske, 2019). Ultimately, scholars have emphasized that extraversion project managers positively influence the delivery of SD projects (Barza & Galanakis, 2022; Abid et al., 2021; Dilchert, 2018; Khan et al., 2021; Zhao & Seibert, 2006).

### **3.3.2. Agreeableness versus Antagonism**

The “agreeableness versus antagonism” set of PTs covers trust (forgiving), straightforwardness (not demanding), altruism (warm), compliance (not stubborn), modesty (not show-off), and tender-mindedness (sympathetic) (McCrae & Costa Jr., 1987; Costa Jr. & McCrae, 1992). An agreeable individual presents these PTs, whereas an antagonistic individual has a minimal level of such characteristics (Costa Jr. & McCrae, 1992). Still, efficacious PMs present agreeable PTs, as it enables them to resolve stakeholders’ conflicts and solve real-life problems (Barza & Galanakis, 2022; Judge et al., 2002). Specifically, trustworthy PMs show trust in other stakeholders’ ideas and actions (Di Fabio & Saklofske, 2019; Dilchert, 2018), straightforward PMs often challenge other project team members to think and act entrepreneurially, be creative, and take a risk (Khan et al., 2021; Pelster & Schaltegger, 2021). PMs, who have altruistic PTs, avoid being rude to others (John & Srivastava, 1999; Khan et al., 2021). Compliant PMs continue to be engaged with innovation until it is completed, without giving up (Abid et al., 2021; Dilchert, 2018). Modest project managers deal well with others humbly, to get the best out of them (Di Fabio & Saklofske, 2019; Dilchert, 2018; Khan et al., 2021). Further, the tender-mindedness characteristic helps PMs to show kindness and support, whenever needed (Abid et al., 2021; McCrae & Costa Jr., 1987). Eventually, numerous scholars have pointed out that agreeable PMs are flexible and have a high potential to influence the adoption and implementation of sustainable projects (Barza & Galanakis, 2022; Di Fabio & Saklofske, 2019; Dilchert, 2018).

### 3.3.3. Conscientiousness versus Lack of Direction

The “conscientiousness versus lack of direction” classification of PTs covers competence (efficient), order (organized), dutifulness (not careless), achievement striving (thorough), self-discipline (not lazy), deliberation (not impulsive) (McCrae & Costa Jr., 1987; Costa Jr. & McCrae, 1992). A conscientious individual acquires these personality traits, while an individual, who suffers from lack of direction, has less level of these characteristics (Costa Jr. & McCrae, 1992). Still, PMs with high levels of conscientiousness are effective, as this empowers them to make well planned actions and achievements (Judge et al., 2002; LePine & Van Dyne, 2001). In particular, PMs examine products, and evaluate them to see how they can be improved (Dilchert, 2018; Pelster & Schaltegger, 2021). The order characteristic enables PMs to approach challenges creatively by being prepared, organized, and thinking outside the box (Di Fabio & Saklofske, 2019; Khan et al., 2021). Dutifulness PMs search for new methods to create value in strategies, products, services, processes, and capabilities (Abid et al., 2021). Achievement striving PMs avoid analysis paralysis when new opportunities are recognised by showing preference towards action (Judge et al., 2002). PMs have self-discipline toward strategies, processes, and technologies, to achieve the main goals and stay focused on project main issues (Dilchert, 2018; Khan et al., 2021). Also, Deliberate PMs communicate issues openly in a respectful tone and manner (Abid et al., 2021; Di Fabio & Saklofske, 2019). Further, many scholars have emphasised that conscientious PMs make better plans and actions that positively influence the completion of SD projects (Barza & Galanakis, 2022; LePine & Van Dyne, 2001; Pelster & Schaltegger, 2021).

### 3.3.4. Neuroticism versus Emotional Stability

The “Neuroticism versus emotional stability” category of PTs comprises of anxiety (tense), anger hostility (irritable), depression (not contented), self-consciousness (shy), impulsiveness (moody), vulnerability (not self-confident) (McCrae & Costa Jr., 1987; Costa Jr. & McCrae, 1992). A project manager, who is emotionally stable, demonstrates better control over these characteristics (Barza & Galanakis, 2022; Dilchert, 2018; Khan et al., 2021). Hence, successful PMs show low levels of neuroticism elements and high levels of emotional stability characteristics (Zhao & Seibert, 2006). In specific, PMs control anxiety through remaining calm in tense situations (John & Srivastava, 1999; McCrae and Costa Jr., 1987). They avoid anger and hostility through distracting themselves and avoiding getting nervous easily (John & Srivastava, 1999). Depression is not a characteristic of successful PMs, as they keep trying and never give up (John & Srivastava, 1999). Self-consciousness of PMs is moderate, as they become shy when the situation requires that (John & Srivastava, 1999). Impulsiveness is not a characteristic of reliable project managers, as they have excellent control on their mood and can work efficiently under pressure (John & Srivastava, 1999). Similarly, vulnerability does not describe efficient PMs, as they always have high level of confidence to complete tasks and take risks (John & Srivastava, 1999; Nichols &

Cottrell, 2014). In other words, PMs are emotionally stable and have excellent control over their emotions which allow them to make reasonable decisions and overcome obstacles (Barza & Galanakis, 2022; Costa Jr. & McCrae, 1992; John & Srivastava, 1999; Khan et al., 2021; Pelster & Schaltegger, 2021).

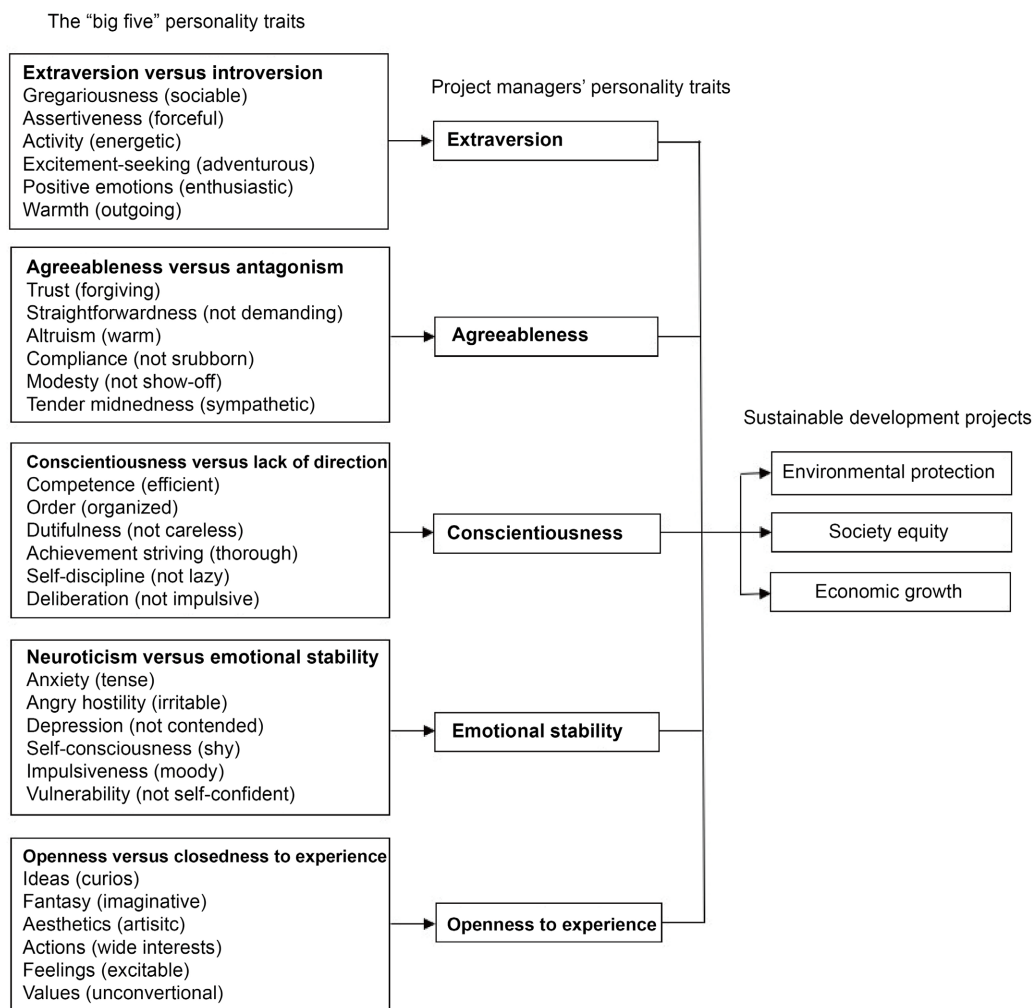
### **3.3.5. Openness versus Closeness to Experience**

The “openness versus closeness to experience” set of PTs includes ideas (curios), fantasy (imaginative), aesthetics (artistic), actions (wide interests), feelings (excitable), and values (unconventional) (McCrae & Costa Jr., 1987; Costa Jr. & McCrae, 1992). Yet, PMs, who are open to experience, learn from new situations, share knowledge, and adopt practical technologies (Judge et al., 2002; LePine & Van Dyne, 2001). Mainly, PMs present new ideas and are often curious about implementing them and waiting for better results (John & Srivastava, 1999; Zhao & Seibert, 2006). Fantasy is an exciting world for PMs, as they have an active imagination that helps in visualizing better strategies and results (Barza & Galanakis, 2022; John & Srivastava, 1999). Aesthetics is a characteristic that indicates that a particular project manager has sophisticated talent in literature, art, or music (John & Srivastava, 1999). PMs enjoy making actions that meet their wide interests, but at the same time can be described as nonroutine actions (John & Srivastava, 1999; Judge et al., 2002). They express their feelings in positive manner and maintain the power of excitement to motivate project team members (Dilchert, 2018; Hassan, 2020; John & Srivastava, 1999). PMs also sustain their values and beliefs in everyday practices (Abid et al., 2021; John & Srivastava, 1999; Judge et al., 2002). This means that PMs are open to new experiences as this encourages them to deal with various new methods and technologies (Barza & Galanakis, 2022; Hassan, 2021; LePine & Van Dyne, 2001). Consequently, the openness to experience characteristic allows PMs to cope with the various opportunities and challenges of sustainable development projects (Di Fabio & Saklofske, 2019; Judge et al., 2002).

## **4. The Conceptual Framework for PMs’ PTs Required to Deliver SD Projects**

A PMs need to acquire an exclusive set of PTs that allows them to overcome challenges and seek opportunities when dealing with SD projects (Abid et al., 2021; Di Fabio & Saklofske, 2019; Dilchert, 2018; Khan et al., 2021; Pelster & Schaltegger, 2021). Accordingly, this research represents a conceptual framework that represents PMs’ PTs that positively impact the delivery of SD projects, as shown in **Figure 2**.

In the beginning, the conceptual framework illustrates the “big five” PTs that are regularly revealed in literature to have an impact on projects (Barza & Galanakis, 2022; John & Srivastava, 1999; Judge et al., 2002; LePine & Van Dyne, 2001), which are: extraversion or introversion; agreeableness or antagonism; conscientiousness or lack of direction; neuroticism or emotional stability; and



**Figure 2.** Conceptual framework for PMs' PTs required to deliver SD projects (Abid et al., 2021; Costa Jr. & McCrae, 1992; Fukuda-Parr & Muchhala, 2020; John & Srivastava, 1999; Khan et al., 2021; Pelster & Schaltegger, 2021).

openness or closeness to experience (Costa Jr. & McCrae, 1992; John & Srivastava, 1999). Then, this is narrowed to explore, through conducting a comprehensive literature review, each personality trait influences the achievement of SD projects. Hence, it was found out the PMs' PT that has a positive impact on the outcome of SD projects are extraversion, agreeableness, conscientiousness, emotional stability; and openness to experience (Dilchert, 2018; Khan et al., 2021; Costa Jr. & McCrae, 1992; John & Srivastava, 1999; Pelster & Schaltegger, 2021). Each one of these five PMs' PTs has characteristics that could be related to SD projects (Abid et al., 2021; Costa Jr. & McCrae, 1992; Pelster & Schaltegger, 2021). First, an extrovert PM presents high levels of gregariousness, assertiveness, activity, excitement-seeking, positive emotions, and warmth (Costa Jr. & McCrae, 1992; Pelster & Schaltegger, 2021). This indicates that extrovert PMs can communicate effectively with all stakeholders in SD projects. Second, agreeable PMs trust themselves and others; deal straightforwardly; express altruism; express

compliance; modestly treat others; and have tender-mindedness (Khan et al., 2021; Costa Jr. & McCrae, 1992). This implies that agreeable PMs can accept new ideas, processes, and technologies that support the success of SD projects. Third, conscientious PMs are identified through expressing competence, order, dutifulness, achievement striving, self-discipline, and deliberation (Di Fabio & Saklofske, 2019; Dilchert, 2018; Costa Jr. & McCrae, 1992). This means that conscientious PMs can concentrate on performing different tasks despite any internal or external pressures. Forth, a PM with emotional stability presents minimal or controllable amounts of anxiety, angry hostility, depression, self-consciousness, impulsiveness, and vulnerability. This indicates that (just like other people), PMs might confront hard times that make them lose balance or control over their emotions. This, in turn, could negatively affect their behaviour at work, but the emotional stability characteristic can bring them back to high performance. Last, a PM who is open to experience actively encourages ideas, fantasy, aesthetics, actions, positive feelings, and values. These signposts that PMs, who are open to experience, are cable of seeking new opportunities and taking a risk to deliver SD projects, successfully. At last, scholars have emphasized that PMs, who have such PTs, deliver SD projects successfully (Abid et al., 2021; Di Fabio & Saklofske, 2019; Dilchert, 2018; Khan et al., 2021; Pelster & Schaltegger, 2021). On the other side, PMs who present some or all of the contracting PTs, which are: introversion, antagonism, lack of direction, neuroticism, or closeness to experience (Dilchert, 2018; Khan et al., 2021; Costa Jr. & McCrae, 1992; Pelster & Schaltegger, 2021), have a high potential to fail or deliver undesirable outcomes when dealing with SD projects.

## 5. Research Implications and Limitations

This study has academic and practical implications. Academically, there is a lack of studies that have examined the impact of PMs' PT on the success of SD projects, this study and its contribution to the expansion of knowledge in the fields of project management and sustainable development is significant. In project management field, the study reveals a list of PMs' PTs that lead to favourable outcome in SD projects. Whereas, in the area of sustainable development, the study clarifies how environmental protection, social equity, and economic growth can be derived efficiently by PMs who acquired the needed PTs. Practically, PMs must understand that having certain PTs can foster positive attitudes towards SD projects (Di Fabio & Saklofske, 2019; Dilchert, 2018; Judge et al., 2002; Khan et al., 2021). Such PTs allow them to deal with different people, establish social networks, and work under pressure to meet the designated SD goals (Judge et al., 2002; Khan et al., 2021).

Nevertheless, this research has four limitations to be acknowledged. First, the literature review could not consider all of the found PMs' PT and only concentrated on the PTs suggested by John and Srivastava (1999). Second, the introduced conceptual framework is applicable particularly to SD projects, and could

not be generalized for all project types. Third, the key terms, such as project manager, personality traits, and sustainable development projects, were used to search for relevant articles from only (ADU Online Library and Google Scholar) two databases. Using a wider variety of relevant key terms (i.e. psychological behaviour, sustainability, project management, etc...) would result in finding more relevant articles that could support the presented arguments with more evidence; while, using only two databases limited the accessibility and availability of some articles that were not covered in the domain of these databases. Last, the arguments used to build the conceptual framework of this study relied on previous research, and the outcomes could differ if an empirical study was performed. Thus, future research could examine the proposed conceptual framework empirically and introduce an advanced framework that highlights the influence of other PMs' PTs on the success of SD projects.

## 6. Conclusion

PMs' PTs are imperative to deliver SD projects successfully (Abid et al., 2021; Di Fabio & Saklofske, 2019; Pelster & Schaltegger, 2021). This research has extracted the key five categories of PMs' PT, adopted from John and Srivastava (1999), and has clarified how they positively impact the adoption and application of SD projects. The found-out categories are extraversion, agreeableness, conscientiousness, emotional stability, and openness to experience (Barza & Galanakis, 2022; John & Srivastava, 1999; Costa Jr. & McCrae, 1992). Bear in mind that each one of these PMs' PTs categories involves numerous characteristics that describe the various constructive attitudes of PMs in SD projects. Eventually, the successful implementation of SD projects requires effective management of environmental, social, and economic issues (Abid et al., 2021; Di Fabio & Saklofske, 2019; Dilchert, 2018; Khan et al., 2021; Pelster & Schaltegger, 2021). Accordingly, the conceptual framework of this study provides an integrative illustration of PMs' PTs that could lead to the successful delivery of SD projects. While, PMs who lack such PTs would fail to obtain some or the majority of the (environmental protection, social equity, and economic growth) targets of SD projects. Moreover, this study contributes to the existing behaviour psychology and SD literature. In the field of behaviour psychology, the research provides a list of effective PMs' PT that can positively impact the delivery of SD projects. Whereas, in the area of SD projects, the study pinpoints the environmental, social, and economic challenges associated with SD project, which require a project manager to develop and maintain an effective set of personality traits. In other words, the innovative contribution of this research lies in linking between PMs' psychological behaviours (in the form of PTs) and the positive influence on the delivery of SD projects. Nevertheless, future research could investigate the proposed conceptual framework empirically and establish an advanced conceptual framework or theoretical framework that could study the influence of a wider range of PMs' PT on SD projects.

## Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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