Scientific Research Publishing

Journal of Human Resource and Sustainability Studies, 2023, 11, 61-78
https://www.scirp.org/journal/jhrss
ISSN Online: 2328-4870
ISSN Print: 2328-4862

A Model Emphasizing Project Managers' Competencies Influencing the Success of SD Projects

Afaf Hassan

Department of Environmental Health and Safety, Abu Dhabi University, Abu Dhabi, United Arab Emirates
Email: afaf.hassan@gmail.com

How to cite this paper: Hassan, A. (2023). A Model Emphasizing Project Managers' Competencies Influencing the Success of SD Projects. *Journal of Human Resource and Sustainability Studies, 11,* 61-78.
https://doi.org/10.4236/jhrss.2023.111005

Received: January 4, 2023
Accepted: March 6, 2023
Published: March 9, 2023

Abstract

This paper presents project managers (PM) competencies that influence the successful achievement of sustainable development (SD) projects. A relevant literature review is conducted to summarize the PMs' competencies that lead to outstanding performance in projects. Then, this has been narrowed down to find out the PMs' competencies that influence the adoption and completion of SD projects. Considering the different views, the primary purpose of this exploration is to illustrate the PMs' competencies that have a positive impact on the achievement of SD projects in an integrative model. The investigation indicates that there are four main categories of PMs' competencies that influence the success of SD projects: project management skills, team management abilities, emotional intelligence skills, and formal skills. Hence, this study demonstrates a model inclusively for PMs to relate the found PMs' competencies to the successful implementation of SD projects. The model primarily explains that PMs who acquire the found competencies have a higher potential to achieve outstanding results in existing and future SD projects.

Keywords

Project Manager Competencies, Sustainable Development

1. Introduction

Effective PMs' competencies are essential for the success of any project that they carry on (Anvari et al., 2016; Liikamaa, 2015; Mashhoodi, 2010). The need to clarify the required PM competencies required to achieve, particularly, SD projects has emerged due to the rabid adoption and implementation of new technologies and procedures (Chung et al., 2016; Dudin et al., 2017). Traditional PMs who

stick to the plan and lack abilities to manage change might have difficulties in delivering SD projects (Almashyakhi, 2022; Arditi et al., 2013). In support, managing SD projects demands a comprehensive set of PMs' competencies that allows them to deal with issues that are unique and might have appeared for the first time in a certain project context (Chong, 2013; Kyriakogkonas et al., 2022; Silvius & Schipper, 2014). Bearing in mind that a successful achievement of SD projects includes satisfying the main pillars of sustainability that are environmental protection, social equity, and economic growth, which additional challenges that typical projects might not include (Fukuda-Parr & Muchhala, 2020; Govindharaj, 2021). That is why, a competent PM, who acquires the needed competencies and understands their importance, is capable to implement SD project effectively (Dudin et al., 2017; Dzhengiz & Niesten, 2019; Wiek et al., 2011). As a result, it is essential to assess the PMs' competencies that have influence on the success of SD projects. Thus, the main focus of this research will be on the following issues:

- Highlighting the PM competencies needed for a successful completion of SD projects.
- Providing a model for PMs' competencies that influence the success of SD projects.

However, competence is one of those personal characteristics that allow individuals to complete assigned tasks, where each competency is a combination of knowledge, behaviours and skills (Mashhoodi, 2010). This definition points out the key attributes of competence which are behaviours, knowledge, and skills. In addition, competencies are connected to efficient outcome in a particular situation or job; competency can expect individuals' behaviours in many situations and job tasks; competency enables individuals to use knowledge efficiently and to make things happen; competencies reveal what individuals are able to accomplish and why they act in a certain way (Almashyakhi, 2022; Liikamaa, 2015). In specific, competencies cover skills, knowledge, practices, and behaviours that are often related to better work performance (Anvari et al., 2016). This implies that with merely project management knowledge, a project manager is not made competent. The reason is that they should recognize how to use their knowledge and how to deal with human resources, social, and behavioural matters. Additionally, PMs' competencies have been categorized into two groups that are (1) exceptional competencies including conceptualization, oral presentations, productivity, efficiency orientation, diagnostic use of concepts, impact, self-confidence, power, processes management, and objectivity; (2) threshold competencies covering knowledge, authority, energy, adaptability, self-control, logical thinking, spontaneity, self-assessment, and developing others (Boyatzis, 2008). Other scholars PMs' competencies exist such as leadership, communication, teamwork, achievement orientation, flexibility, development orientation, influence, motivation, quality focus, customer focus, planning, decision-making, and innovation competencies (Almashyakhi, 2022; Arditi et al., 2013; Chong, 2013; Fanelli et al., 2020;

Königová & Fejfar, 2012; Raišienė, 2014).

SD projects are designed to meet the present demands without compromising future needs, in a way that sustains environmental protection, social equity, and economic growth (Ciegis et al., 2011; Govindharaj, 2021). Still, a common focus on environmental, and social economic goals is a hallmark of SD and signifies a broad consensus on which the world can build (Sachs, 2012). Hence, these sustainability goals must be integrated into an SD tactic, but with a new model that incorporates existing concerns of economic growth, social inclusion, and environmental protection (Ciegis et al., 2011; Fukuda-Parr & Muchhala, 2020; Govindharaj, 2021).

PMs' competencies can be used to obtain the desired SD yields (Dzhengiz & Niesten, 2019; Shaikh et al., 2017; Remington-Doucette & Musgrove, 2015). Having a project manager with vigorous competencies is crucial to adopt SD projects. In support, such competencies allow a project manager to recognize the complexity of diverse systems, discover future options, craft SD visions, and develop reliable strategies (Dudin et al., 2017; Shaikh et al., 2017). Besides, effective competencies, linked to achieving better SD projects, allow managers to understand the value of knowledge; identify business objectives; inspire project team members; learn from existing and past projects; encourage socio-economic development; adopt efficient SD practices; find out innovative solutions to real-world problems; commit to reaching promising environmental, economic, and social outcomes (Bruwer et al., 2018; Chung et al., 2016; Dudin et al., 2017; Dzhengiz & Niesten, 2019; Remington-Doucette & Musgrove, 2015). Accordingly, PMs, who acquire the needed competencies, have a higher potential to decide what should or should not be done, and under what type of circumstances (Chung et al., 2016; Dudin et al., 2017; Wiek et al., 2011).

The study of PMs' competencies that influence the success of SD projects is significant to cope up with the existing demands of a better environment, society and economy (Bruwer et al., 2018; Chung et al., 2016; Dudin et al., 2017; Hassan, 2020; Kyriakogkonas et al., 2022; Silvius & Schipper, 2014; Wiek et al., 2011). At the same time, to complete SD projects effectively, the demand for PMs, who acquire effective competencies, is increasing (Arditi et al., 2013; Chong, 2013; Chundu et al., 2022; Fanelli et al., 2020; Königová & Fejfar, 2012). In clarification, such competencies enhance the performance of PMs when working on SD projects (Chong, 2013; Fanelli et al., 2020). The reason is that PMs who present robust leadership, communication, development orientation, motivation, achievement orientation, teamwork, decision-making, and innovation competencies have a higher chance to complete SD projects (considering environmental protection, social inclusion, and economic viability) successfully (Bruwer et al., 2018; Chung et al., 2016; Dudin et al., 2017; Dzhengiz & Niesten, 2019; Kyriakogkonas et al., 2022; Mukhopadhyay et al., 2011). On the other side, PMs who lack suchcompetencies might confront many difficulties in communicating with stakeholders, dealing with technologies, solving problems, making appreciativedecisions or

resolving team conflicts (Arditi et al., 2013; Chong, 2013; Königová & Fejfar, 2012; Kyriakogkonas et al., 2022; Silvius & Schipper, 2014).

Accordingly, this study is focused on exploring the past literature about PMs' competencies and SD projects. The literature is rich in knowledge about both topics, but there is a lack of studies that explore the PMs' competencies needed to enhance the outcome of SD projects. Hence, this research intends to fill this gap of knowledge. In particular, the study aims to examine the PMs' competencies that influence the successful adoption and implementation of SD projects. The paper also proposes a model illustrating the PMs' competencies that have positive impacts on SD projects.

2. Conceptual Framework

The research conceptual framework proposes a causal relationship between PMs' competencies and the successful achievement of SD projects. To achieve this target, PMs' competencies are considered as independent variable that includes elements related to the PMs' ability to adopt and implement SD projects, efficiently. In detail, the PMs' competencies are categorized under four global factors that are: basic management skills, team management abilities, emotional intelligence skills and formal skills (Dziekoński, 2017). Each one of these global factors includes specific measurements related to the constructive achievement of SD projects (refer to **Figure 1**).

To develop understanding about the main conceptions of this research, it is important to identify the operational definitions for each one of the four main categories of PMs' competencies that influence the success of SD projects (Dziekoński, 2017). First, the "basic management skills" category that is a combination of intelligence, creativity and capacity to handle stress. Under this group a PM duty necessitates the availability of both mental strength and organize work skills (Dziekoński, 2017). Second, the "team management abilities" classification that is shaped by personality characteristics and interpersonal abilities. This group highlights four core features that are: focusing on goals, resolving conflicts, negotiating, managing scope, time, and cost of a specific project. These are primarily related to communication with project team members and stakeholders. A combination of these features is necessary to: help in solving problems and presenting competence in the area in which the project is implemented. This indicates that this group stresses interpersonal qualities of a PM and experience without which it is impossible to professionally apply project management functions (Dziekoński, 2017). Third, "emotional intelligence skills" category is shaped by emotional intelligence elements. These are PMs' ability to identify their own and other individuals' emotions, and to deal effectively with their own emotions as well as the emotions of others (Dziekoński, 2017). Lastly, the "formal skills" category are seen as complementary elements of PMs' competency profile. They often result from knowledge of tools, training, and certification. In general, this group demonstrates the significance of the used method and available methodo-

logical recommendations (Dziekoński, 2017). On the other side, the operational definition for SD projects is simplified to cover projects that are capable of delivering the three main pillars of sustainability, which are economic growth, social equity, and environmental protection, in projects (Secundo et al., 2020). SD projects intend to find effective solutions for existing challenges and issues such as climate change, energy, food security, pollution, ecosystem resilience, migration, and many other issues that necessitate a cross disciplinary perspective (Secundo et al., 2020).

3. Methodology

This study adopted the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 flow diagram for systematic literature reviews methodology that was established by Page et al. (2021), to develop the model highlighting the PMs' competencies that influence the success of SD projects. This method was selected because PRISMA was proven to be focused on reporting literature reviews and evaluating the effects of interventions (Aczel et al., 2020; Page et al., 2021). Also, could be used as a base for reporting systematic reviews with objectives other than assessing interventions (e.g. developing models) (Aczel et al., 2020; Page et al., 2021). Mainly, the review was based on peer-reviewed literature published in scientific journals. The key terms, such as PM competencies and SD project, were used to search for relevant articles from Abu Dhabi University (ADU) Online Library and Google Scholar. Consequently, the researcher collected a total of sixty-two peer-reviewed articles that are related to PM competencies and SD fields. Only thirty-six journal articles were found to be relevant to the study framework and rich in content, to support the various arguments of the study.

Furthermore, the collected articles were screened by the author. To perform an effectual analysis, the inclusion criteria focused on previous studies that discuss PMs' competencies and SD projects. In the beginning, the author read the abstracts of each one of the gathered articles and, if a particular paper is related to the research topic, the researcher continued reading the rest of the sections to decide whether that journal article meets the inclusion criteria or not. This resulted in excluding irrelevant articles. Yet, the author also used PRISMA 2020 Checklist research criteria, initiated by Aczel et al. (2020), to check the research criteria. At first, sixty-two relevant articles were gathered from ADU Library and Google Scholar. Twenty-six irrelevant articles were excluded after the content verification process. The remaining thirty-six articles were examined for eligibility. Then, the findings of these thirty-six articles were analyzed and used to develop the model of the study. The model comprised numerous arguments and findings that were taken from these articles, to demonstrate the PMs' competencies that have a high potential to lead to successful SD projects (Chung et al., 2016; Dudin et al., 2017; Dzhengiz & Niesten, 2019; Silvius & Schipper, 2014; Wiek et al., 2011).

4. Literature Review

4.1. Project Manager Competencies

There is a great consensus that PMs' competencies are relevant in a complex way to projects' performance, being the key requirement for stable performance over time (Bucur, 2013). However, Boyatzis (2008) has defined project managers' competencies as the characteristics of an individual, which lead to outstanding job performance. Similarly, project managers' competencies are characteristics or traits of PMs that lead to achieving superior performance (Fanelli et al., 2020; Raišienė, 2014). In clarification, the performance tools involve PMs' mindsets, thought patterns, knowledge, skills, social responsibilities, and self-confidence (Almashyakhi, 2022; Fanelli et al., 2020; Königová & Fejfar 2012; Raišienė, 2014).

Scholars demonstrated different classifications and counts of PMs' competencies (Almashyakhi, 2022; Abraham et al., 2001; Chong, 2013; Fanelli et al., 2020; Königová & Fejfar, 2012; Raišienė, 2014; Wickramasinghe & De Zoyza, 2011). For example, Abraham et al. (2001) have stated that outstanding PMs acquire key competencies such as good communication skills, interpersonal skills, flexibility, innovation, adaptability, problem-solving, result orientation, leadership skills, customer focus, teamwork, dependency, trustworthiness, quality-focused, technical expertise, business expertise, hard work, risk-taking, time management, purposeful, staff development, safety consciousness, safety development, imagination, proficiency in a foreign language, professional dress, uncompromising, and previous foreign experience. While Watson et al. (2004) have categorized PMs' competencies into seven key classifications that are self-management, general management, people management, operational, technical competencies, business competencies, and personal competencies. This indicates that PMs' competencies might vary depending on the situation, but they often add value to PMs' performance. While, Wickramasinghe and De Zoyza (2011) have explained that PMs' competencies cover a wide range of categories such as listening, coaching ability, negotiation, empathy with people, conflict resolution, customer relations knowledge, change handling skills, learning, ethical, risk-taking, quality focus, technology application skills, empowerment ability, holistic, creativity, safety focus, learning, flexibility, team player, time management ability, cost consciousness, customer focus, oral communication, written communication, pressure management skills, planning and scheduling, attitude to meet targets, achievement-oriented, strategizing ability, and positive vision. Then, Königová and Fejfar (2012) elaborated that PMs' competencies are about leadership, communicativeness, comportment, flexibility, decisiveness, organizational skills, proactivity, responsibility, loyalty, and self-confidence. Arditi et al. (2013) have put together a wider range of PMs' competencies which are initiative, sensitivity, resilience, achievement, risk taker, innovation, analytical thinking, planning, oral communication, customer focus, flexibility, adaptability, teamwork, quality focus, decision making, learning orientation, authority, presence, motivating other relationships, business aware-

ness, and developing individuals. At the same time, this amount of PMs' competencies has initiated the need to categorize them into groups such as creativity and sensitivity; achievement motivation; planning and organizing; strategic perspective; analysis and judgment; assertiveness and decisiveness; oral communication; managing staff; persuasiveness; energy and initiative; adaptability and resilience; distinct competencies; Problem analysis and decisiveness; business sense and integrity; and reading and written communication (Chong, 2013). Bucur (2013) has also mentioned that PMs' competencies include strategic thinking, influence and collaboration, results orientation, transformational leadership, learning, and team leadership. This has been followed by the argument of Raišienė (2014) who have emphasized that PMs' competencies include the ability to communicate, collaborate, make decisions in a team, overcome various contradictions, and assist employees to achieve better result. Although there are numerous PMs' competencies, scholars have pursued adding more (Shaikh et al., 2017; Fanelli et al., 2020). Lately, it has been found that conceptual skills; experience and workplace effectiveness; personal value; personal image; awareness of emotional and physical barriers; incentives and networks; career awareness are core PMs' competencies that would help in achieving successful SD outcomes (Almashyakhi, 2022; Shaikh et al., 2017). Recently, project manager competencies have been focused on seven main categories that are communication, leadership, human resources management, analysis, organizational design, costing, quality, and programming (Almashyakhi, 2022; Fanelli et al., 2020).

4.2. SD Projects

The majority of the world's societies acknowledge the importance of SD (Ciegis et al., 2011; Govindharaj, 2021; Sachs, 2012), as SD aims to obtain "people-centred development and ending poverty and distributional equity as key objectives; structural transformation of national economies and reforms in global economic governance to create an enabling environment for development" (Fukuda-Parr & Muchhala, 2020: p. 104706). This indicates that it is essential to find out a combination of environmental protection, social inclusion, and economic development, bearing in mind that the specific objectives would differ globally, between, and within different societies (Ciegis et al., 2011; Sachs, 2012).

Hence, for SD projects to be adopted and implemented successfully, an advancement in three main pillars of SD which are economics, social and environmental should take place (Ciegis et al., 2011). In particular, Secundo et al. (2020) have specified that the SD framework covers a wide variety of environmental, social, and economic concerns, including biodiversity, energy, climate change, equality, peace, gender, security, education, food supply, healthcare, economic growth, and sustainable production and consumption. They have emphasized that the main goal of SD projects is to offer active solutions for existing challenges such as energy, pollution, food security, ecosystem resilience, climate change, migration, and numerous other matters that impose the need for a cross-disciplinary perspective (Secundo et al., 2020). Accordingly, SD projects

are projects that encourage current generations to meet their needs without compromising future generations' ability to meet their needs as well (Govindharaj, 2021; Hassan, 2020; Remington-Doucette & Musgrove, 2015). In detail, SD projects respond adequately to current and future issues such as climate change, poverty, pandemics, and desertification that are, regularly, introducing high degrees of urgency, damage potential, and complexity (Govindharaj, 2021; Wiek et al., 2011). Therefore, the move forward toward SD projects requires transparent decisions that motivate a wide range of stakeholders to participate efficiently (Fukuda-Parr & Muchhala, 2020; Govindharaj, 2021; Secundo et al., 2020). In other words, the success of SD projects requires PMs with a unique set of competencies that enables them to overcome challenges and attain SD.

4.3. The Influence of PM Competencies on SD Projects

SD projects highlight the importance of environmental, social, and economic responsibility (Ciegis et al., 2011; Fukuda-Parr & Muchhala, 2020; Remington-Doucette & Musgrove, 2015; Secundo et al., 2020). Hence, competent PMs, who have the needed competencies, can increase the likelihood of completing SD projects successfully (Dudin et al., 2017; Silvius & Schipper, 2014). Accordingly, this section emphasizes the influence of PMs' competencies, found by Dziekoński (2017), on the successful adoption and implementation of SD projects.

4.3.1. Basic Managerial Skills

The "basic managerial skills" of PMs include the ability to think rationally (intellectual skills); be creative; deal with stress; work in a team; make decisions; assess the impact of actions taken; establish contacts; formulate goals; communicate; organize goals to subordinates; and motivate team members (Dziekoński, 2017). Each one of these competencies is related to the success of SD projects as follows:

- Intellectual skills: PMs should present effective intellectual skills when handling SD projects (Bruwer et al., 2018; Chung et al., 2016; Dudin et al., 2017; Dzhengiz & Niesten, 2019). In support, such skills will help them make valuable SD achievements; detect and resolve conflicts among stakeholders, recognize the dynamics of socio-ecological systems; value ethics, justice, equity, socio-ecological system integrity; and analyze how different systems could be improved in future to incorporate the environmental, economic, and social aspects (Chundu et al., 2022; Remington-Doucette & Musgrove, 2015).
- Creativity: scholars have pointed out that being creative helps PMs to complete SD projects successfully (Bruwer et al., 2018; Chung et al., 2016; Dudin et al., 2017; Dzhengiz & Niesten, 2019). Creativity is needed to achieve environmental innovations, as it enables PMs to alter present characteristics to initiate better solutions (Hassan, 2020; Silvius & Schipper, 2014), and commit to completing the challenging SD activities (Chung et al., 2016). In support, Chung et al. (2016) have mentioned that early compliance with environmen-

tal, social, and economic concerns could improve SD competitiveness, particularly, when a PM acquires creativity competencies.

- Dealing with stress: the ability to deal with stress is essential for PMs who are handling SD projects (Bruwer et al., 2018). To control stress, Wiek et al. (2011) have stated that PMs should have the ability to predict the consequences of their decisions prior to the execution of SD projects. They also should also be able to identify short- and long-term outcomes of the made decisions, in the context of immediate priorities and future concerns (Chundu et al., 2022; Silvius & Schipper, 2014). In turn, these points will help them deal better with their own stress, as well as the other stakeholders' stress.
- Working in a team: PMs would contribute to SD projects' success when working in a team with a degree of autonomy, innovativeness, and creativity (Dzhengiz & Niesten, 2019; Kyriakogkonas et al., 2022). They have pointed out that when PMs urge project team members to create sustainable ideas and innovations; participate in environmentally friendly activities; attend professional training sessions; implement effective environmental practices; and overcome challenging activities when working on SD projects.
- Making the decision: the ability to make decisions is an indispensable competence of PMs who aim to adopt and implement SD projects (Bruwer et al., 2018; Chung et al., 2016; Mukhopadhyay et al., 2011). PMs tend to make better decisions when they have a thorough understanding of financial capabilities (Bruwer et al., 2018); environmental, social, and economic procedures, policies, and regulations (Mukhopadhyay et al., 2011); project team members' skills (Mukhopadhyay et al., 2011); aims and objectives, strategic plan, resource allocation, and power delegation (Chung et al., 2016; Hassan, 2020).
- Assessing the impact of actions: to assess the impact of actions, PMs would develop an in-depth understanding of the different specifications and methodologies used to address the various challenges that could occur during SD projects (Chundu et al., 2022; Remington-Doucette & Musgrove, 2015; Silvius & Schipper, 2014).
- Establishing contracts: to establish contracts, PMs need to predict the influences of present decisions on the future; understand existing trends and analyze multiple scenarios of SD; deliberate alternative responses to a particular crisis before it occurs, as this would produce rational, logical, and informed contracts (Remington-Doucette & Musgrove, 2015).
- Formulating goals: to formulate goals efficiently, PMs should consider environmental, economic, and social goals (Chung et al., 2016); realize striving missions (Wiek et al., 2011); sustain continuous progress in all project phases (Dudin et al., 2017); advance policies to support environmental, social, economic growth (Chung et al., 2016); attain required documents or potential project plans (Dudin et al., 2017); develop measures for SD (Chung et al., 2016); achieve project strategic objectives (Dudin et al., 2017); and control managerial conducts as well as internal activities (Bruwer et al., 2018; Kyria-

kogkonas et al., 2022).

- Communicating: the adoption of SD project relies on the ability of PMs to communicate these ideas with project team members in a way that they always become motivated (Chundu et al., 2022; Dzhengiz & Niesten, 2019). Dudin et al. (2017) have agreed that it is important that the PM communicates effectively, for instance, a good presentation of a particular SD project could enhance the overall project outcome.
- Organizing goals to subordinates: it is necessary to organize goals for subordinates SD project team members. In other words, the goals, directions, and expectations should be provided in an organized matter, to encourage team members to understand the new technologies associated with SD (Chundu et al., 2022; Dzhengiz & Niesten, 2019). In clarification, PMs should communicate goals about different concerns such as strengths, weaknesses, success, and failure in a logical and organized way (Wiek et al., 2011). They also should explain thoroughly the different methods and techniques that could be followed to realize the best possible SD results (Silvius & Schipper, 2014; Wiek et al., 2011).
- Motivating team members: PMs motivate project team members to move forward from traditional project contexts to work towards suitable development contexts; obtain knowledge; encourage SD practices; meet environmental standards, regulations, and policies; share knowledge at managerial and project teams' levels; and boost positive attitudes such as leadership, communication, problem-solving, collaboration, debate, and negotiation skills (Chung et al., 2016; Hassan, 2020; Remington-Doucette & Musgrove, 2015; Silvius & Schipper, 2014).

4.3.2. Team Management Abilities

"Team management abilities" are critical for the success of SD projects (Remington-Doucette & Musgrove, 2015; Silvius & Schipper, 2014; Wiek et al., 2011). According to Dziekoński (2017), the PMs' "team management abilities" involve assertiveness; self-confidence; authority; integrity and honesty; help in solving problems; competence in the area project is implemented; focus on the goals; ability to resolve conflicts; ability to negotiate; ability to manage the scope, time, and cost of the project. Each one of these competencies is associated with the success of SD projects as follows:

- Assertiveness: PMs' assertiveness builds trust, encourages collaborations among project team members; helps in applying creative solutions for SD problems, and enhances project team members' competencies (Chundu et al., 2022; Dzhengiz & Niesten, 2019; Mukhopadhyay et al., 2011). Assertiveness also includes the responsibility of PMs to delegate a reasonable workload; clarify objectives and expectations; give enough time to complete tasks; provide timely feedback about work progress; and acknowledge meaningful achievements through consistent evaluations (Kyriakogkonas et al., 2022; Remington-Doucette & Musgrove, 2015).

- Self-confidence: PMs' self-confidence affects the project teamwork performance, as it encourages better leadership, communication, preparation, organization, negotiation, delegation, openness to diversity, empathy, conflict resolution, and tolerance towards disparities (Chundu et al., 2022; Dudin et al., 2017; Kyriakogkonas et al., 2022; Silvius & Schipper, 2014; Wiek et al., 2011).
- Authority: providing an adequate amount of authority to PMs is necessary, as this facilitates the process of developing excellent strategies, following governmental policies, act sensibly towards the environment; mitigating economic risks that could threaten the realization of project objectives, and use renewable material to enhance the overall SD outcome (Bruwer et al., 2018; Chung et al., 2016).
- Integrity and honesty: when PMs deal with integrity and honesty, project stakeholders' performance in SD projects will be improved (Dudin et al., 2017; Silvius & Schipper, 2014). The improvement will include better usage of advanced technologies, training for project teams, achievement of objectives, job satisfaction, identification of talented individuals, and improvement in the quality of products and services (Dudin et al., 2017). Dzhengiz and Niesten (2019) have added that when PMs act with integrity and honesty, project team members would be encouraged to produce sustainable ideas and innovations; engage in environmentally friendly activities; attend required training sessions; conserve resources; become responsible for social and environmental matters; implement effective environmental practices; participate in environment-oriented achievements; and complete challenging activities in work environments.
- Solving problems: in this concern, Bruwer et al. (2018) have mentioned that experience PMs often help in solving problems. In clarification, the methods and processes used to achieve SD in projects are new and could have several problems, particularly when used for the first time, which makes the ability to participate or help in solving problems fundamental (Bruwer et al., 2018; Hassan, 2020; Kyriakogkonas et al., 2022).
- Competence in the area project is implemented: Chung et al. (2016) have explained that it is crucial for PMs to present competence in the area project is implemented. PMs should be aware of details such as the society's quality of life, environmental protection capacities, what would happen to products after discarding them, how environmentally friendly products could be used, and environmental regulations (Dudin et al., 2017; Silvius & Schipper, 2014).
- Focusing on the goals: persuasive communication is important to convince the project team members and other stakeholders why and how to focus on the goals, particularly, when introducing and using new SD technologies (Mukhopadhyay et al., 2011). Remington-Doucette and Musgrove (2015) have added that effective collaboration among project stakeholders about SD goals and requirements is necessary to deliver SD projects successfully.

- Resolving conflicts: the ability to resolve conflicts leads to rich improvements in the performance and outcome of SD projects (Kyriakogkonas et al., 2022; Wiek et al., 2011). Scholars have emphasized that it is vital to focus not only on determining conflicts among stakeholders but also persist to find a meaningful solution to the root causes (Remington-Doucette & Musgrove, 2015).
- Negotiating: responsible PMs can negotiate about different issues such as introducing technologies that aim to minimize environmental harm and sharing ideas about SD with project team members (Chundu et al., 2022; Dzhengiz & Niesten, 2019). Wiek et al. (2011) have added that solving SD problems and generating new opportunities require PMs to acquire excellent negotiation skills and to communicate effectively among entrepreneurs, community leaders, politicians, scientists, and others.
- Managing the scope, time, and cost of the project: PMs are required to utilize their abilities to manage the scope, time, and cost of an SD project (Kyriakogkonas et al., 2022; Remington-Doucette & Musgrove, 2015). In clarification, Dzhengiz and Niesten (2019) have pointed out that managers should develop their critical thinking, environmental capabilities, ethical values, soft skills, and formal knowledge that enables them to accomplish better in SD projects. In specific, PMs are urged to innovate, motivate stakeholders to report deficiencies in technologies or resources, and enhance projects' environmental strategy (Kyriakogkonas et al., 2022; Dzhengiz & Niesten, 2019; Wiek et al., 2011). Effective management could go beyond that to entail advancements of human, technology, business resources, and the surrounding environment in a way that improves SD projects' performance and preserves the existing environment (Dzhengiz & Niesten, 2019; Remington-Doucette & Musgrove, 2015).

4.3.3. Emotional Intelligence Skills

Emotional intelligence is about the human ability to understand their own as well as other's emotions, but also to deal with the emotions of others (Dziekoński, 2017; Drigas & Papoutsi, 2018). There is an association between attaining emotional intelligence skills and the successful adoption and implementation of SD Projects (Silvius & Schipper, 2014; Wamsler & Restoy, 2020). Here, "emotional intelligence skills" comprise of expressing confidence; empathy; and aspiration (Dziekoński, 2017). Each one of these competencies is relevant to the success of SD projects as follows:

- Expressing confidence: the ability to express confidence while performing SD projects is fundamental (Chundu et al., 2022; Mukhopadhyay et al., 2011; Silvius & Schipper, 2014). Wiek et al. (2011) have added that it is essential for PMs to show a tremendous amount of confidence while dealing with SD problems and the new opportunities that may occur to solve them well.
- Empathy: showing empathy in a constructive manner allows PMs to deliver successful SD projects (Dzhengiz & Niesten, 2019; Kyriakogkonas et al., 2022). The reason is that empathy would enable PMs to influence project team mem-

bers positively to the extent to which they engage effectively in all required eco-friendly practices (Chundu et al., 2022; Dzhengiz & Niesten, 2019).

- Aspiration: the PMs' aspiration positively influences the project, so that they introduced solution to real-world problems (Kyriakogkonas et al., 2022; Remington-Doucette & Musgrove, 2015), creative techniques to resolve conflicts (Chundu et al., 2022; Dzhengiz & Niesten, 2019), collaboration among project stakeholders (Hassan, 2020; Wiek et al., 2011), and adequately control of all stages of SD projects (Bruwer et al., 2018; Silvius & Schipper, 2014).

4.3.4. Formal Skills

The PMs' "formal skills" are related to the success of SD projects (Bruwer et al., 2018; Dzhengiz & Niesten, 2019; Remington-Doucette et al., 2015). They include a flexible management style; experience in managing projects; the ability to use adequate project management methodology; and the ability to use project management software (Dziekoński, 2017). Each one of these competencies is related to the success of SD projects as follows:

- Flexible management style: PMs are seen as driving forces in encouraging project team members to adapt and respond to present and future social and environmental issues (Dzhengiz & Niesten, 2019). PMs, who present a flexible management style, help in building and controlling a collaborative project team that works efficiently toward accomplishing all SD requirements (Chundu et al., 2022; Dzhengiz & Niesten, 2019).
- Experience in managing projects: PMs' experience in managing projects allows them to facilitate, motivate, and solve problems to increase the potential of an adequate adoption and management of SD projects (Kyriakogkonas et al., 2022; Remington-Doucette & Musgrove, 2015; Silvius & Schipper, 2014).
- Using adequate project management methodology: one of the core project management competencies that are crucial to achieving SD is the ability to communicate methodologies and strategies (Bruwer et al., 2018; Chundu et al., 2022; Mukhopadhyay et al., 2011).
- Using project management software: PMs' ability to use project management software is strategically derived as a successful adoption of technology, which establishes a competitive advantage specifically when dealing with environmental, social, and economic concerns (Chung et al., 2016; Kyriakogkonas et al., 2022).

5. A Model for PMs' Competencies Influencing the Success of SD Projects

SD projects are important to enhance the quality of life (Remington-Doucette & Musgrove, 2015; Secundo et al., 2020). In support, they provide an integrated strategy to develop the economy, foster social inclusion, and conserve the environment (Fukuda-Parr & Muchhala, 2020; Secundo et al., 2020). However, a successful SD project requires PMs, who acquire robust competencies, to accelerate the accomplishment of the needed SD tasks and activities (Dzhengiz & Ni-

esten, 2019; Kyriakogkonas et al., 2022; Remington-Doucette & Musgrove, 2015; Silvius & Schipper, 2014; Wiek et al., 2011). Therefore, this research illustrates a model that presents the PMs' competencies that influence the adoption and completion of SD projects, as shown in **Figure 1**.

In detail, the model lists PMs' competencies that are frequently revealed inliterature to influence the success of SD projects (Bruwer et al., 2018; Dudin et al., 2017; Dzhengiz & Niesten, 2019; Kyriakogkonas et al., 2022; Mukhopadhyay et al., 2011; Remington-Doucette & Musgrove, 2015; Wiek et al., 2011). The model demonstrates four main categories of PM competencies that have been adopted from the model initiated by Dziekoński (2017). These main categories are project management skills; team management abilities; emotional intelligence skills; and formal skills (Dziekoński, 2017). First, project management skills include intellectual skills; creativity; dealing with stress; working in a team; making decisions; assessing the impact of actions taken; establishing contacts; formulating goals;

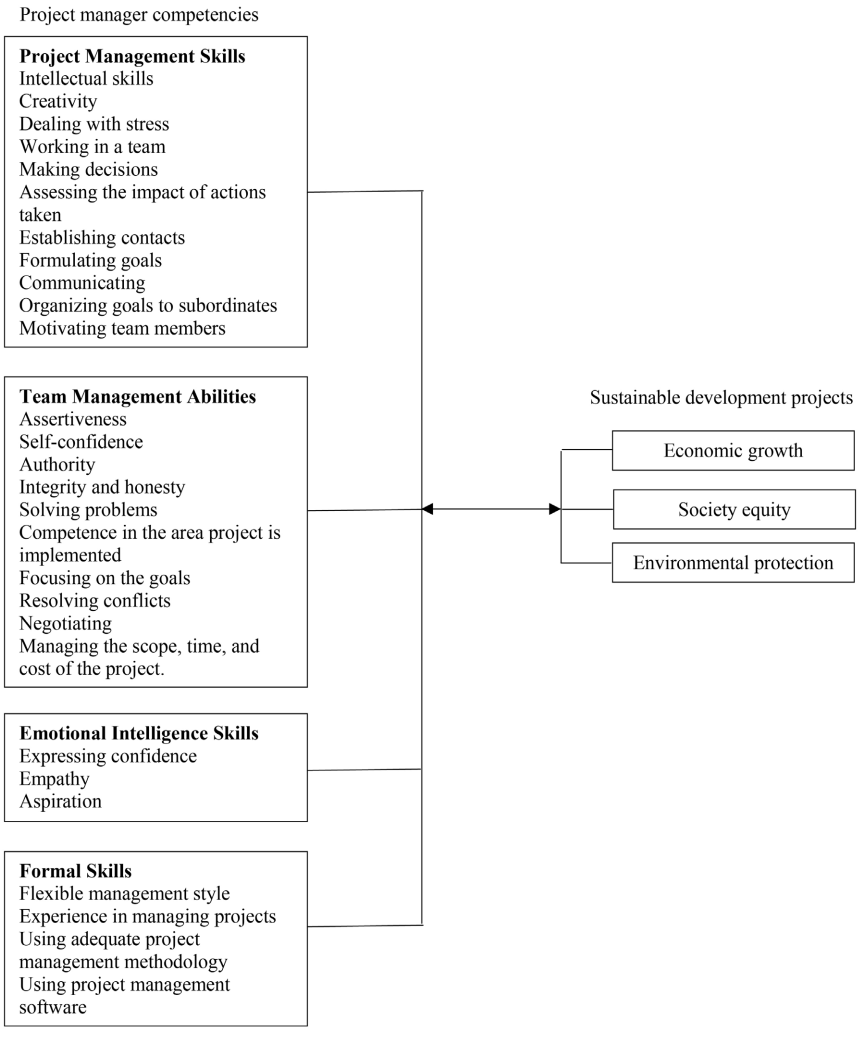

Figure 1. A model emphasizing PMs' competencies influencing the success of SD projects (Dziekoński, 2017; Dzhengiz & Niesten, 2019; Fukuda-Parr & Muchhala, 2020; Remington-Doucette & Musgrove, 2015; Secundo et al., 2020; Wiek et al., 2011).

communicating; organizing goals with subordinates; and motivating team members (Dziekoński, 2017). Scholars have highlighted that PMs, who acquire such competencies, achieve positive outcomes when managing SD projects (Chung et al., 2016; Dudin et al., 2017; Silvius & Schipper, 2014). Second, team management abilities that cover assertiveness; self-confidence; authority; integrity and honesty; solving problems; competence in the area project is implemented; focusing on the goals; resolving conflicts; negotiating; and ultimately managing the scope, time, and cost of the project (Dziekoński, 2017). Each one of the listed PMs' competencies under this category leads to a successful implementation of SD projects (Bruwer et al., 2018; Chung et al., 2016; Dzhengiz & Niesten, 2019; Hassan, 2020; Mukhopadhyay et al., 2011; Remington-Doucette & Musgrove, 2015; Wiek et al., 2011). Third, emotional intelligence skills cover expressing confidence, empathy, and aspiration (Dziekoński, 2017). The literature review emphasizes that each one of the PMs' competencies listed under this category impacts the adoption and completion of SD projects in a positive way (Kyriakogkonas et al., 2022; Mukhopadhyay et al., 2011; Silvius & Schipper, 2014). Last, formal skills comprise of flexible management style; experience in managing projects; using adequate project management methodology; and using project management software (Dziekoński, 2017) Similarly, researchers have agreed that the PMs' competencies, under this category, positively influence the success of SD projects (Bruwer et al., 2018; Chung et al., 2016; Dzhengiz & Niesten, 2019; Mukhopadhyay et al., 2011; Remington-Doucette & Musgrove, 2015; Wiek et al., 2011).

Nevertheless, the model illustrates that PMs who acquire the demonstrated competencies in **Figure 1** have a better likelihood to improve the economy, enhance society's equity, and protect the environment from any potential harm while managing SD projects (Dzhengiz & Niesten, 2019; Kyriakogkonas et al., 2022; Remington-Doucette & Musgrove, 2015; Wiek et al., 2011). On the other side, PMs, who lack the competencies shown in **Figure 1**, have less potential to act positively while managing SD, which might lead to negative outcomes when achieving the SD (environmental, social, and economic) targets (Bruwer et al., 2018; Hassan, 2020; Mukhopadhyay et al., 2011; Wiek et al., 2011).

6. Conclusion

PMs' competencies are essential to adopting and implementing SD projects successfully (Bruwer et al., 2018; Chung et al., 2016; Dzhengiz & Niesten, 2019; Kyriakogkonas et al., 2022; Remington-Doucette & Musgrove, 2015; Wiek et al., 2011). This study has mentioned the main four categories of PMs' competencies, adopted form (Dziekoński, 2017), and has clarified how they could influence the success of SD projects. The categories are project management skills, team management abilities; emotional intelligence skills, and formal skills (Dziekoński, 2017). Each one of these categories includes a list of PMs' competencies that could increase the success level of SD. Specifically, not only when PMs acquire them but also when they utilize them successfully in SD projects. Considering that the

achievement of SD projects would lead to environmental protection, social equity, and economic growth (Bruwer et al., 2018; Chung et al., 2016; Dudin et al., 2017; Dzhengiz & Niesten, 2019; Kyriakogkonas et al., 2022; Mukhopadhyay et al., 2011; Remington-Doucette & Musgrove, 2015; Wiek et al., 2011). Accordingly, the model of this study provides a simple illustration of PMs' competencies that could lead to the successful adoption and implementation of SD projects.

This study contributes to the existing project management and SD literature. In the field of project management, the research provides a list of effective PMs' competencies that can enhance the adoption and implementation of SD projects. While, in the area of SD projects, the study highlights the importance and challenges of each element of SD (environmental protection, social equity, and economic growth), which require a competent project manager. On the other side, there are four main limitations to be acknowledged. First, the literature review could not consider all existing PMs' competencies and only focused on the competencies summarised by (Dziekoński, 2017). Second, the information used to build the model relied on earlier research, and the findings could change if an empirical study was conducted. Third, the introduced model applies (specifically) to SD projects. This indicates that it could not be generalized for other types of projects. Last, the key terms, such as project manager competencies and sustainable development projects, were used to search for relevant articles from only two databases that are ADU Online Library and Google Scholar. Nevertheless, future research could examine the proposed model empirically and establish an advanced model that could study the influence of other PMs' competencies on SD projects.

Conflicts of Interest

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

References

Abraham, S., Karns, L., Shaw, K., & Mena, M. (2001). Managerial Competencies and the Managerial Performance Appraisal Process. *Journal of Management Development, 20,* 842-852. https://doi.org/10.1108/02621710110410842

Aczel, B., Szaszi, B., Sarafoglou, A., Kekecs, Z., Kucharský, Š., Benjamin, D., & Wagenmakers, E. J. (2020). A Consensus-Based Transparency Checklist. *Nature Human Behaviour, 4,* 4-6. https://doi.org/10.1038/s41562-019-0772-6

Almashyakhi, A. M. (2022). An Evidence-Based Review of e-HRM and Its Impact on Strategic Human Resource Management. *Journal of Human Resource and Sustainability Studies, 10,* 542-556. https://doi.org/10.4236/jhrss.2022.103033

Anvari, A., Soltani, I., & Rafiee, M. (2016). Providing the Applicable Model of Performance Management with Competencies Oriented. *Procedia—Social and Behavioral Sciences, 230,* 190-197. https://doi.org/10.1016/j.sbspro.2016.09.024

Arditi, D., Gluch, P., & Holmdahl, M. (2013). Managerial Competencies of Female and Male Managers in the Swedish Construction Industry. *Construction Management and Economics, 31,* 979-990. https://doi.org/10.1080/01446193.2013.828845

Boyatzis, R. (2008). Competencies in the 21st Century. *Journal of Management Development, 27,* 5-12. https://doi.org/10.1108/02621710810840730

Bruwer, J., Coetzee, P., & Meiring, J. (2018). Can Internal Control Activities and Managerial Conduct Influence Business Sustainability? A South African SMME Perspective. *Journal of Small Business and Enterprise Development, 25,* 710-729. https://doi.org/10.1108/JSBED-11-2016-0188

Bucur, I. (2013). Managerial Core Competencies as Predictors of Managerial Performance, on Different Levels of Management. *Procedia—Social and Behavioral Sciences, 78,* 365-369. https://doi.org/10.1016/j.sbspro.2013.04.312

Chong, E. (2013). Managerial Competencies and Career Advancement: A Comparative Study of Managers in Two Countries. *Journal of Business Research, 66,* 345-353. https://doi.org/10.1016/j.jbusres.2011.08.015

Chundu, M., Masara, E., & Mucheri, T. (2022). Contribution of Social Entrepreneurship to Sustainable Community Development in Zimbabwe. A Case of Virtuous Women Trust Operating in Harare. *Journal of Human Resource and Sustainability Studies, 10,* 380-402. https://doi.org/10.4236/jhrss.2022.103023

Chung, L., Lo, C., & Li, P. (2016). The Interaction Effects of Institutional Constraints on Managerial Intentions and Sustainable Performance. *International Journal of Production Economics, 181,* 374-383. https://doi.org/10.1016/j.ijpe.2016.01.001

Ciegis, R., Kliucininkas, L., & Ramanauskiene, J. (2011). Assessment of State and Tendencies of Sustainable Development in Lithuania. *Management of Environmental Quality: An International Journal, 22,* 757-768. https://doi.org/10.1108/14777831111170858

Drigas, A., & Papoutsi, C. (2018). A New Layered Model on Emotional Intelligence. *Behavioral Sciences, 8,* 45. https://doi.org/10.3390/bs8050045

Dudin, M., Vysotskaya, N., Frolova, E., Pukhart, A., & Galkina, M. (2017). Improving Professional Competence of the Staff as a Strategic Factor for Sustainable Development of Companies. *Journal of Business & Retail Management Research, 12,* 133-142. https://doi.org/10.24052/JBRMR/V12IS01/IPCOTSAASFFSDOC

Dzhengiz, T., & Niesten, E. (2019). Competences for Environmental Sustainability: A Systematic Review on the Impact of Absorptive Capacity and Capabilities. *Journal of Business Ethics, 162,* 881-906. https://doi.org/10.1007/s10551-019-04360-z

Dziekoński, K. (2017). Project Managers' Competencies Model for Construction Industry in Poland. *Procedia Engineering, 182,* 174-181. https://doi.org/10.1016/j.proeng.2017.03.157

Fanelli, S., Lanza, G., Enna, C., & Zangrandi, A. (2020). Managerial Competences in Public Organisations: The Healthcare Professionals' Perspective. *BMC Health Services Research, 20,* Article No. 303. https://doi.org/10.1186/s12913-020-05179-5

Fukuda-Parr, S., & Muchhala, B. (2020). The Southern Origins of Sustainable Development Goals: Ideas, Actors, Aspirations. *World Development, 126,* Article ID: 104706. https://doi.org/10.1016/j.worlddev.2019.104706

Govindharaj, Y. (2021). A Theoretical Evaluation of Enabling Humans with Social Justice, Conceptualism, and Sustainable Development. *Journal of Human Resource and Sustainability Studies, 9,* 503-523. https://doi.org/10.4236/jhrss.2021.94032

Hassan, A. (2020). Managerial Competencies Required to Achieve Sustainable Development Projects: A Proposed Model for Managers. *Environmental Management and Sustainable Development, 9,* 68-86. https://doi.org/10.5296/emsd.v9i3.17603

Königová, M., & Fejfar, J. (2012). Evaluation and Development of Managerial Competencies. *Scientific Papers of the University of Pardubice. Series D, Faculty of Economics &*

Administration, 22, 68-80.

Kyriakogkonas, P., Garefalakis, A., Pappa, E., & Kagias, P. (2022). Sustainable Project Management under the Light of ESG Criteria: A Theoretical Approach. *Theoretical Economics Letters, 12,* 1517-1538. https://doi.org/10.4236/tel.2022.126083

Liikamaa, K. (2015). Developing a Project Manager's Competencies: A Collective View of the Most Important Competencies. *Procedia Manufacturing, 3,* 681-687. https://doi.org/10.4236/tel.2022.126083

Mashhoodi, M. (2010). Competency Approach in Human Resource Management. *Tadbir Journal, 215,* 14.

Mukhopadhyay, K., Sil, J., & Banerjea, N. (2011). A Competency Based Management System for Sustainable Development by Innovative Organizations. *Vision: The Journal of Business Perspective, 15,* 153-162. https://doi.org/10.1177/097226291101500206

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Moher, D. (2021). The PRISMA 2020 Statement: An Updated Guideline for Reporting Systematic Reviews. *BMJ, 372,* n71. https://doi.org/10.1136/bmj.n71

Raišienė, A. (2014). Leadership and Managerial Competences in a Contemporary Organization from the Standpoint of Business Executives. *Economics & Sociology, 7,* 179-193. https://doi.org/10.14254/2071-789X.2014/7-3/14

Remington-Doucette, S., & Musgrove, S. (2015). Variation in Sustainability Competency Development According to Age, Gender, and Disciplinary Affiliation. *International Journal of Sustainability in Higher Education, 16,* 537-575. https://doi.org/10.1108/IJSHE-01-2013-0005

Sachs, J. (2012). From Millennium Development Goals to Sustainable Development Goals. *The Lancet, 379,* 2206-2211. https://doi.org/10.1016/S0140-6736(12)60685-0

Secundo, G., Ndou, V., Vecchio, P., & De Pascale, G. (2020). Sustainable Development, Intellectual Capital and Technology Policies: A Structured Literature Review and Future Research Agenda. *Technological Forecasting and Social Change, 153,* Article ID: 119917. https://doi.org/10.1016/j.techfore.2020.119917

Shaikh, A., Bisschoff, C., & Botha, C. (2017). A Theoretical Model to Measure Managerial and Leadership Competence of Business School Managers. *Journal of Economics and Behavioral Studies, 9,* 149-165. https://doi.org/10.22610/jebs.v9i6.2012

Silvius, A. G., & Schipper, R. P. (2014). Sustainability in Project Management Competencies: Analyzing the Competence Gap of Project Managers. *Journal of Human Resource and Sustainability Studies*, *2,* 40-58. https://doi.org/10.4236/jhrss.2014.22005

Wamsler, C., & Restoy, F. (2020). Emotional Intelligence and the Sustainable Development Goals: Supporting Peaceful, Just, and Inclusive Societies. In L. F. Walter, *et al.* (Eds.), *Peace, Justice and Strong Institutions* (pp. 215-225). Springer. https://doi.org/10.1007/978-3-319-71066-2_123-1

Watson, S., McCracken, M., & Hughes, M. (2004). Scottish Visitor Attractions: Managerial Competence Requirements. *Journal of European Industrial Training, 28,* 39-66. https://doi.org/10.1108/03090590410513884

Wickramasinghe, V., & De Zoyza, N. (2011). Managerial Competency Requirements That Enhance Organisational Competences: A Study of a Sri Lankan Telecom Organisation. *The International Journal of Human Resource Management, 22,* 2981-3000. https://doi.org/10.1080/09585192.2011.588038

Wiek, A., Withycombe, L., & Redman, C. (2011). Key Competencies in Sustainability: A Reference Framework for Academic Program Development. *Sustainability Science, 6,* 203-218. https://doi.org/10.1007/s11625-011-0132-6