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2024
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“Communication Agents Impacting Consumer Green Training and Competencies: Moderating Role of Creativity”

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DECLARATION

I, Konstantinos Georgios Piperidis, hereby declare that the work presented in this Master's dissertation is submitted in full fulfilment of the requirements for the degree of Master of Commerce in Marketing at the University of the Witwatersrand, Johannesburg. The dissertation, entitled "Communication Agents Impacting Consumer Green Training and Competencies: Moderating Role of Creativity", is entirely my own effort, conducted under the guidance of my supervisor, Professor Helen Inseng Duh. All sources used for reference have been duly acknowledged and cited in the appropriate sections of this dissertation. I affirm that this dissertation has not been submitted for any other degree or qualification to any other institution. The data, figures, and results presented in this dissertation are authentic and have been generated through rigorous research and analysis by myself. I also confirm that ethical considerations were adhered to throughout the research process, and all necessary permissions were obtained.

Signature:  Date: April 2024

ABSTRACT

Marketing management scholars are examining the extent to which knowledge, skills and competencies in environmental management assist in protecting the environment while gaining economic benefits. However, there are questions as to the communication agents developing the green training and resultant competencies. Thus, this dissertation employs the Ability-Motivation-Opportunity (AMO), Socialisation, and Natural-Resource- Based-View (NRBV) theories that guided the development of a conceptual model to examine the extent to which four socialisation agents (peer, family school, and media) impacted green training and ultimately green competencies. The research also examined the mediating role of green training and the moderating role of green creativity in how much green training drives green competencies.

Quantitative data was collected from 425 students and non-student respondents through online questionnaires. SPSS was used to examine descriptive statistics and SmartPls was used to conduct structural equation modeling (PLS-SEM) for the testing of the hypotheses. The results revealed that the socialisation agents (i.e., peer, family, school, and media) significantly impacted green training, which in turn significantly impacted six dimensions of green competencies (i.e., green knowledge, green skills, green awareness, green ability, green attitude, and green behaviour). Green training mediated all the relationships between the socialisation agents and green competencies. Consumer creativity significantly moderated the relationships between green training and the awareness and knowledge dimensions of green competencies even though negative. Environmentalists and consumer interest groups would benefit from this study by identifying the communication agents that can best train consumers to consider the environment in their consumption behaviours and develop competencies in assisting in environmental protection. Marketing practitioners and social marketers can also benefit from the knowledge of which communication agents can be best targeted to educate customers and develop their green competencies, while their green creativity makes its influence.

Keywords: Environmental management, green training, green competencies, Ability-Motivation-Opportunity (AMO) theory, Socialisation theory, Natural-Resource-Based-View (NRBV) theory, socialisation agents, peer, family, school, media, green creativity, consumer creativity, consumer interest groups, social marketers, environmentalists.

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CHAPTER 1: INTRODUCTION AND BACKGROUND TO THE STUDY

1.1. INTRODUCTION

Marketing, management, and even human resources scholars are increasingly developing research interests in sustainability and environmental protection issues. The interest follows myriads of environmental problems caused by business and human activities (Yafi et al., 2021). Some of the problems are plastic waste pollutants that harm aquatic and human lives, cause health problems (Moshood et al., 2022), carbon emissions, deforestation, chemical pollution and depletion of fossil fuels. Some of these cause climate change, flooding, melting glaciers and an increase in endangered species (Gull & Idrees, 2022). A comprehensive global report conducted by Sachs et al. (2022) ranks the sustainability development between 163 countries. They used 17 items to compare the progress of the measured countries, regarding sustainability measures such as well-being and good health, responsible consumption and production, affordable and clean energy, sustainable cities and communities, clean water and sanitation, and climate action. Among the participating 163 countries, South Africa ranked very low with a concerning 108 position. It was further stated by Van Den Bergh (2022) that only 58% of South Africans are living sustainably. With this average level of South Africans living sustainable and environmentally friendly lives, their levels of green training and competencies and the factors driving these are questionable. Considering general standards of individuals' well-being, solicitude for the environment, and consumers' increased awareness of current conditions of unsustainable global production that harm the environment, marketers and managers are not only seeking products that are amiable to the public and the environment but are also contemplating the training of staff and consumers for green competencies.

The concept of green consumer behaviour has progressively changed and become a refined discipline for researchers and marketers to adopt as a unique form of consumer research (Dangelico & Vocalleli, 2017; Jaiswal & Kant, 2018). The understanding or intention of consumer behaviour towards green purchases is that an individual will purchase products or services that are perceived as sustainable or environmentally friendly. The products and services must be also both beneficial and recyclable, and should not be viewed as harmful in the context of environmental and personal well-being (Whelan & Kronthal-Sacco, 2019). In response, businesses are expected to not only supply green products to satisfy consumer

demand but also to acquaint consumers with knowledge on environmental sustainability and to extrapolate the advantages of being pro-green (Joshi & Rahman, 2015). This form of marketing is pertinent in developing consumption which is sustainable and leads to a less pollutant form of consumption (Dangelico & Vocalleli, 2017). The green training of employees and consumers, Yafi et al. (2021, p. 1) contend, is "an economically sustainable and environmentally friendly approach in attempts to be green" in the production and consumption of goods and services. In a human resources context, they define green training as "a process of on-the-job training and further education designed to integrate the goals and objectives of environmental management" (p. 1). Studies show that green training enhances green competencies (Gull & Idrees, 2022; Yafi et al., 2021) and resultant organisational efficiency in resource usage (Gull & Idrees, 2022). These will further have an impact on performance within the environment in a green context (Yafi et al., 2021) in terms of being an environmentally responsible organisation meeting the goals of environmental protection (Gull & Idrees, 2022).

To the extent that green competencies create environmentally responsible organisations that meet environmental protection goals, Cabral and Dhar (2019) established a scale to measure the dimensions of green competencies. They define green competencies as "hierarchical dispositional constructs that are comprised of green knowledge, green skills, green awareness, green attitudes, green abilities, and green behaviour" (p. 888). The scale of Cabral and Dhar (2019) has 31 items which produced 6 green competency dimensions namely green knowledge, skills, attitudes, behaviour, awareness, and abilities. The development of the dimensions was guided by the natural resource-based view theory which posits that human resources, including employees and managers, are vital assets in organisations and when they develop green competencies, the organisation will achieve both the goal of reducing harmful impact on the natural environment as well as gaining competitive advantage and sustainable profits. Cabral and Dhar (2019) developed their scale from the perspective of human resources, but following Yue et al. (2020) report that the consumers' overconsumption also impacts resource depletion and environmental degradation, can Cabral and Dhar's (2019) green competencies scale and dimensions also apply to consumers?

In addition to the applicability of Cabral and Dhar's (2019) scale to consumers, what drives green competencies? In testing the nomological validity of the scale, Cabral and Dhar (2019) proposed and tested green training as a driver of green competencies. The green training was

in terms of developing knowledge of environmental sustainability policies and issues. They found that green training positively and significantly impacted all six dimensions of green competencies. Gull and Idrees (2022) and Yafi et al. (2021) also found that green training significantly impacted all six dimensions of green competencies, which are all good determinants of green performance by organisations. A study relating to companies involved in the food industry by Ahmed et al. (2020) revealed that having green competencies and adopting a green culture fundamentally influences the effectiveness of an organisation. Ahmed et al. (2020) also recommends that a principal constituent for green competencies is adequate training of employees, not limited to their knowledge of green embodiment but also their behaviour, attitude and skills in the practice.

While Dragonmir (2020) suggests that green training will encompass the process of consistent and active learning which expands to innate responsibility, socially, to secure our natural environment, Fernandes et al. (2020) opine that the emphasis lies in the ability of the enterprise to compellingly communicate to customers on the values of green marketing exercises and resultant green consumption. Yan and Xu (2010) had long questioned what communication/socialisation agents (i.e., family, peers, school, and media) can most effectively impact consumers to adopt green behaviours. Considering its convenience, interactive, and immediate nature, social media is found to entice the behaviour and green attitudes of individuals through exposure to sustainability-related information which administers environmental discipline (Chung et al., 2020; Sun et al., 2021). According to Essiz and Mandrik (2021), it is peer and family communication that impacts sustainable and environmental consumer attitudes and behaviours. Can green training received from these agents always directly impact green competencies? While Essiz and Mandrik's (2021) study shows this possibility, Joshi and Dhar (2020) suggest that it will depend on the green creativity developed from the training. Therefore, there is a need to test the relationships between the socialization agents, green training, creativity, and competencies.

1.2. PROBLEM STATEMENT AND RESEARCH QUESTION

The environmental problems caused by business and consumption activities ignite green marketing and consumer research and practices so that not only competitive advantage, business profits and consumer satisfaction are sustained, but environmental sustainability is

also guaranteed (Joshi & Dhar, 2020; Yafi et al., 2021). The strategic importance for all businesses to develop a sustainable organisation in both economic (i.e., profit generation) and environmental terms has generated studies in green marketing (Szabo & Webster, 2020), green retailing (Adhikari, Biswas, & Avittathur, 2019), and green supply chain management (Shahzad et al., 2020). In all these studies, marketing management scholars are examining the extent to which knowledge, skills and competencies in environmental management can assist in protecting the environment while economic benefits are gained (Gull & Idrees, 2022; Yafi et al., 2021).

Convinced that successful green management practices emanate from conveying required training, skills and green competencies towards employees, Cabral and Dhar (2019), Gull and Idrees (2022) and other scholars contend that green human resource practices are crucial. Guided by the Ability–Motivation–Opportunity (AMO) theory, these scholars speculate that human resource practices such as training impact employees' levels of motivation, abilities, and skills and create opportunities for better organisational performance. In terms of green performance, Yafi et al. (2021) developed a model suggesting that green training leads to Cabral and Dhar's (2019) six green competencies dimensions, which in turn lead to green environmental performance. Considering that decision-making goes through a hierarchical order of awareness, affection and purchase/behaviour according to the hierarchy of effects theory (Duffet, 2020), and Cabral and Dhar's (2019) six-dimension scale also offers a structured hierarchical dispositional green competencies construct, it has been the preferred scale to measure green competencies (Cabral & Dhar, 2021).

If green competencies generated from green training positively drive environmental performance by organisations, which communication channels or socialisation agents can be effective for the training? This is a question that Cabral and Dhar (2019) and Yafi et al. (2021) did not answer. Using the socialisation theory, Yan and Xu (2010), Essiz and Mandrik (2021), and Le, Tran and Hoang (2022) assert that communication/socialisation agents such as family, peers, school, and the media influence green attitudes and behaviours of consumers. How much, and which of the communications from these socialisation agents enhance green training before the development of green attitudes and behaviours needs examination. To enhance green competencies, green production, green brand image and green competitive advantage, Zameer, Wang and Yasmeen (2020) contend that green creativity is required from employees and

customers as well. They define green creativity as the ability to think in different ways towards a sustainable environment and convert new ideas into competencies and reality. Creative consumers are those who have an innovative mindset, proficient in adapting, modifying or transforming a product or service with the objective of most adequately fitting their demands (Snyder et al., 2019). With these abilities of a creative consumer, it is questionable whether green creativity will moderate the relationship between green training and competencies. It may be particularly possible following Joshi and Dhar's (2020) finding that green creativity is first impacted by green training before the competencies are developed. The research by Awan et al. (2019) also highlights that green creativity enhances/moderates green behaviours and resultant organizational sustainability in its three: economic, environmental and social dimensions. The study further states that creative thinking importantly drives green innovation which nourishes green skills for sustainability-related competencies (Abdelkareem et al., 2024).

Thus, the research question of this study is: How much does the green training from socialisation agents impact green competencies through the moderating effect of consumer green creativity?

1.3. PURPOSE STATEMENT

This study seeks to answer the question as to the extent to which green training, derived from socialisation agents, impacts green competencies and what is the moderating role of consumer green creativity. Thus, guided by the Ability–Motivation–Opportunity (AMO), the Natural-Resource-Based-View and socialisation theories, and integrating Cabral and Dhar's (2019) and Joshi and Dhar's (2020) models, the study's main purpose is to examine the impact of green training generated from socialisation agents (i.e., peers, family, school, and media) on green competencies (knowledge, skills, awareness, abilities, attitudes and behaviours). It also tests the moderating role of green creativity in the relationships between green training and the six green competencies dimensions.

1.4. RESEARCH OBJECTIVES

1.4.1. THEORETICAL OBJECTIVES

Deriving from the research problem and purpose of this study, the theoretical objectives are as follows:

1. To review the literature on the concept, essence and benefits of green training, consumer green creativity and competencies amongst employees and consumers (Chapter 2).
2. To conduct a literature review on the various models and theories explaining the varied drivers of green competencies, so that a conceptual model and hypotheses can be developed (Chapter 3).
3. To discuss the methods of data collection and analyses that will be appropriate in quantitatively testing the conceptual model and hypotheses (Chapter 4).

1.4.2. EMPIRICAL OBJECTIVES

The empirical research objectives are the following:

1. To examine the extent to which the socialisation agents (i.e., peer, family, school and media communications) impact green training (Chapter 5).
2. To test the relationships between green training and green competencies (knowledge, skills, awareness, abilities, attitudes, and behaviours) (Chapter 5).
3. To test the scale of Cabral and Dhar (2019) and assess whether his 6-dimensional scale could be applicable in a South African context (Chapter 5).
4. To test the relationship between consumer green creativity and green competencies (knowledge, skills, awareness, abilities, attitudes, and behaviours) (Chapter 5).
5. To assess how much creativity moderates in the relationships between green training and green competencies (Chapter 5).
6. To empirically test the conceptual model and hypotheses and present the results (Chapter 5).
7. To discuss the results, and implications and draw conclusions (Chapter 6).

1.5. CONTRIBUTION AND SIGNIFICANCE

This study has theoretical and practical/managerial contributions. Practically, and for competitive advantage, efficiency, and acceptable environmental performance, organisations need green competencies from their employees (Cabral & Dhar, 2019; Gull & Idrees, 2022), and from customers for ethical and environmentally concerned buying. For example, green competencies are needed from customers because green marketing has to be accompanied by green purchases of products which are friendly to the environment, to the same degree as green appliances and cars (Le et al., 2022; Yan & Xu, 2010; Dilotsotlhe & Duh**,** 2021). This study contributes by revealing how much green training and consumer creativity drive green competencies. Yafi et al. (2021) and Gull and Idrees (2022) found that green training leads to green competencies. This study informs marketing managers of the specific socialisation agents that can best train consumers with green skills. This is particularly important because Le et al. (2022) found that not all socialisation agents adequately train consumers with green competencies. Specifically, the media as they found, does not significantly drive green behaviour. This study will identify which of the socialisation agents will make a significant impact so that managers can partner with the agents for significant and impactful training.

Theoretically, there is a growing trend of research on the green training and competencies of employees through the approach of implementing green human resources management. Literature is limited on these concepts from the consumer and marketing management perspectives. This study is theoretically contributing to the context of consumers by examining whether South African consumers have green training and competencies and how much and which agents are training them into the green competencies. The study also theoretically contributes by enriching the ability–motivation–opportunity theory, from the perspective of all consumers including employees by identifying the socialisation agents that better communicate and train individuals to gain abilities, motivation, and skills for environmental protection. The Natural Resource Based View will also be enriched by this study by exposing the determinants of green training, creativity, and the six green competencies. The explanatory power of the socialisation agents is also tested empirically in the circumstance of green training, thus enriching the study of green consumer behaviour. By borrowing from theories of human resources management and socialisation, consumers' green competencies are explained from

an interdisciplinary perspective. Cabral and Dhar's (2019), Gull and Idrees' (2022) and Joshi and Dhar's (2020) models will also be enriched by adding the socialisation theory.

1.6. THEORETICAL FRAMEWORK

1.6.1. CABRAL AND DHAR'S (2019) AND JOSHI AND DHAR'S (2020) MODELS; ABILITY-MOTIVATION-OPPORTUNITY (AMO), SOCIALISATION AND NATURAL-RESOURCE-BASED-VIEW (NRBV) THEORIES

Guided by the AMO and NRBV, Cabral and Dhar's model suggests that green training leads to six dimensions of green competencies, while Joshi and Dhar's (2020) model posits that the green training goes further to impact green creativity. Green creativity according to its definition provided by Joshi and Dhar (2020) can moderate how much green training leads to green competencies. Discussions on the AMO and NRBV theories shed light on these relationships.

The AMO theory posits that the ability, motivation and subsequent taking of the opportunities to perform better in a job or task emanate from adequate training (Gull & Idrees, 2022). Kellner, Cafferkey and Townsend (2019) assert that AMO happens in a sequence that starts with a person's (A) ability, (M) motivation and then the (O) opportunities for (P) performance after abilities and motivation are gained. The application of this theory within a business context, and particularly within human resources, is directed explicitly to improve the performance of a firm in terms of productivity and profits. In the context of green performance and the Natural-Resource-Based-View (NRBV), Cabral and Dhar (2019) opine that the abilities and motivations provided by AMO are firm's resources in the form of green training and capabilities/competencies, which all enhance a firm's environmental success while giving them a favourable competitive positioning to serve the environmentally conscious and friendly publics. Thus, while the AMO emphasises the sequential move from abilities to motivations to take advantage of opportunities to perform better in a workplace, the NRBV holds that green opportunities for performance come from resources gained from green training and the resultant development of green competencies (Cabral & Dhar, 2019). The green training and competencies according to Gull and Idrees' (2022) finding lead to organisational efficiency in resource use and environmental protection. If gaining the training and abilities is that important

to the point that it becomes an asset for organizational efficiency and performance both in business profits and environmental protection, according to AMO and NRBV, it becomes important to study the socialisation agents responsible, and to be rewarded for effective training.

The socialisation theory as explained by Le et al. (2022, p. 3) is "a process by which consumers obtain skills, knowledge, and attitudes as they are forming the behaviour to be a mature consumer in the market". In the green perspective and enhancing AMO, consumer green socialisation is a procedure where a consumer obtains green training, knowledge, skills, motivation, and abilities to adopt green behaviours for environmental protection. The studies by Le et al. (2022), Essiz and Mandrik (2021) and Yan and Xu (2010) show that consumer green socialisation is powerful enough to ignite green behaviours. They suggest that the socialisation agents are the family, peers, school, and the media. These agents are briefly discussed in the next section.

1.7. STUDIED CONSTRUCTS

This section starts with the socialisation theory (i.e., peer, family, school and media communications) constructs and then describes the AMO (i.e., green training, and six green competencies) and creativity constructs.

PEER COMMUNICATION

Communication among peers has shown a strong influence towards the purchasing behaviour of green products (Muralidharan et al., 2016). The formerly mentioned study expresses the influence that peers retain towards reinforcing and modelling the buying behaviour of green products. Peer communication has been seen to have a positive impact on green purchase behaviour among adolescents and further exposes the willingness of consumers to pay for an ethical product which motivates their purchase behaviour (Le et al., 2022). The research by Collado et al. (2019) establishes the impact of peer communication and how this component shapes the sustainability behaviour of young adults, helping them to develop moral responsibility towards the environment.

FAMILY COMMUNICATION

Family communication is a fundamental aspect of consumer socialisation. The study conducted by Le et al., (2022) presents the impact of family association and its effect on making young consumers want to pay more towards products that are ethically produced; this shows that families positively influence the mind of an adolescent in creating ethically driven consumer behaviour. It is a prevailing understanding that parents hold the responsibility to shape and direct the adolescent life of a child, defining their very perceptions from a young age.

A further contribution to current literature shows that families do influence the green attitudes of the youth which helps in formulating a pro-environmental culture (Muralidharan et al., 2016). It is evident to acknowledge the impact that this has on brand and product preferences and consumer behaviour and patterns. Similarly, once a child has reached an age where they are capable of vocalising their desires, they create authority over their needs, deciding and persisting on what products they want to consume, and therefore, have their parents purchase them.

The efforts that families apply in their communication are interconnected between members and have significant influence over each other, this consequently dictates aspects such as store and product preferences, choice of brands and multifarious consumption values (Mandrik et al., 2018).

SCHOOL COMMUNICATION

Yan and Chang (2008) exposed that arranged student memberships and classes influenced the views of college students in how they perceive the environment and expanded their knowledge of consumer behaviour that is environmentally friendly. The schooling system is a compelling area to begin teaching individuals about the environment and the impact that their consumption patterns will have as they mature.

Corresponding to the research conducted by Adi et al. (2019) green programs implemented in schools is a developing trend which educates students about the progressive future of the environment. Such programs teach students concepts such as sustainable sourcing, green

environment and green construction. Students, therefore, have the opportunity to learn about the human influence of protecting nature by understanding safe packaging materials, construction materials and renewable energy.

Cultivating such an essential communication stream in a school develops the green habits of students from a young age and will also impact their staff and workers.

Media Communication

Muralidharan et al. (2016) review the impact of both new and traditional media which concludes no significant impact on millennial consumer environmental concerns or behaviour within the Indian and United States markets. The result of this investigation is due to the Indian market being a developing country, environmental conservation is not a primary concern; as for the United States, consumers harbour a negative perception towards mass media. This is due to deceptive advertising and a lack of credibility for the material being advertised. Furthermore, the study conducted by Yan and Xu (2010) found that all socialisation agents, except for media, had a positive influence on green product purchasing frequency. It appears therefore that media, as a communication agent has a negative connotation and influence on consumer behaviour, adapted towards the South African market, it will be interesting to observe whether media will have an impact on green training.

Green Training

The conception of green training is that it is the application of an eco-friendly and environmentally sensitive practice that is aimed at growing value in the green tenet (Teixeira et al., 2016). The development of green training is an invaluable element for organisations to incorporate into their human resource management green program, in its foundation to spread knowledge and educate corporations and stakeholders, as a means to establish sustainable and therefore, environmental ethics and goals that the organisation can use a guideline for their agendas (Yusoff et al., 2020). It should be conceived as genuine importance that green training be incorporated into workshops and seminars for the objective of bestowing crucial knowledge so that employees have the skills and ability to govern the environment cautiously so that there is an adoption of a pro-environmental ethos and behaviours that are sensitive to preservation (Hosain & Rahman, 2016).

While these training programs are being administered management needs to incorporate components that would be viewed as imperative; such as recycling, energy conservation and safety of the environment (Genty, 2021). Furthermore, during the primary phase of induction for newly incorporated employees, it is important to transcribe content which allows the employees to recognise the important policies and procedures that the organisation has adopted so that the trainees correctly grasp the concept of environmental sustainability and green management. This ensures that new employees will develop a committed approach, through the expressed values of the company, and provides further regulation towards pro-environmental practice (Tinuke et al., 2022).

CONSUMER GREEN CREATIVITY

Creative customers are competent in modifying, acclimating and transforming a product or service to more suitably fit their demands. According to Moreau and Dahl (2005) when a customer encounters an issue with a product or service that they have purchased, the individuals adapt by creating a solution to the problem on their own, through their experience and creativity. They can do this by allocating resources that meet their goals, thereby contributing to creating value (McColl-Kennedy et al., 2017a).

In terms of green creativity, Joshi and Dhar's (2020, p.3) define it as "the act of coming up with novel approaches, ideas and actions to develop green competencies and the innovation process converts the novel ideas into economically and environmentally viable businesses and consumer behaviours." It is the creative analysis of problem-solving and producing outcomes through creative acts that provide unique solutions to challenges and practical problems, contributing to the clever formulation of products and services (Snyder et al., 2019). Consumer creativity is also prevalent on a corporate level, whereby organisations provide green training on applicable topics involving the environment encouraging employee innovation and nurturing skills towards green creativity (Joshi and Dhar, 2020).

GREEN KNOWLEDGE

For businesses to be effective, retain a competitive edge and function at optimal capacity; knowledge plays an important role. The business environment is highly dynamic, and it is conceived that skilful use of knowledge depicts a formidable market leader (Shahzad et al., 2021).

The theory of green knowledge is studied to be knowledge that one applies, develops and creates to better master the challenges encountered in the market environment that will creatively overture solutions which use an eco-innovative approach (Tinuke et al., 2022).

Based on the study of Horbach (2019) there is the consideration that to succeed in developing a green economy, the use of green knowledge is a prerequisite. As is seen by the modern era, economies are making drastic changes, moving towards adopting sustainability; the endorsement of green knowledge is paramount to reducing carbon emissions and cultivating a culture circumscribed around sustainability and green image (Cheng, Yang & Sheu, 2020).

GREEN SKILLS

Examined literature was published regarding green skills and sustainability in manufacturing, which is most prominently present in developing countries (Linder & Williander, 2017). The meticulous definition of green skills is known as vivid skills, such as generic, vocational and professional skills and technical skills centred around knowledge, attitudes and values within an environment which is driven towards developing products or services that support environmental, economic and social practices within the organisation, community and business.

Adopting these skills encompasses a decisive role in creating sustainable economic benefits and literacy such as green awareness and competencies engaged in sciences, engineering, technology and mathematics with the incorporation of management and leadership skills directed towards green transitioning (Ling and Xu, 2020).

GREEN AWARENESS

Having awareness towards the impacts and benefits of being pro-green affects the behaviour of individuals which changes their lifestyle, and their preferences towards consuming products and services and increases their senses towards conservation of the environment, which modifies business operations.

Current research views the concept of green awareness from numerous backgrounds, for example; being an understanding of the ramification towards air pollution on the environment (He & Liu, 2018), the conscious awareness that occurs during the unsustainable process of a production procedure and consequently, the carbon footprint impact as a result of this (Garcia et al., 2019), having acknowledgement towards the consumption of energy within the process of production (Shrouf et al., 2017), finally, the awareness in cost-benefit associated with the risk of the environment (Peng and Liu, 2016).

Incorporating green awareness into organizations educates employees about the effects that they have towards the environment, this aims at developing their behaviour making the individuals more likely to adopt better practices, and initiating activity towards reducing any behaviour that they may have adopted to improve green ethics and values.

GREEN ABILITY

Abilities can be described as an individual's skills and qualities that provide them with the capability to achieve their goals. Using structured HRM department, the green abilities of colleagues can be nurtured, deliberated and directed towards environmental conservation. This signifies the employees' abilities to promote their colleagues' well-being and exhibit green behaviour within the firm.

The research conducted by Bürgener and Barth (2018) investigates the capabilities of sustainability competencies within the education system and permits close attention to education and training to generate change agents, committed to sustainability. This approach flows into providing abilities to students, dimensions of sustainability associated with problem solving and tasks, as educational exposure towards sustainable development.

GREEN ATTITUDE

The study conducted by Aysen (2017) conceptualises the different terms in which individuals interpret the environment; interchangeable terminology on this subject considers attitudes that are environmental, ecological, friendly to the environment and sustainable.

Antecedent research suggests that values are the primary source of administration in the development of attitudes towards the influence of behaviour (Cheung & To, 2019). The standard where behaviour and attitudes are developed stems from values (Rahman & Reynolds, 2019).

The green attitude that an individual possesses will delegate the demeanour shown in terms of favourability or unfavourability towards environmental issues. In essence, their behaviour will evaluate the environmental context and conceive a particular attitude towards the environment which determines the quality of their view.

GREEN BEHAVIOUR

Referring to the study conducted by Zhang & Dong (2020), it evaluates that several factors influence the behaviour towards green purchases, which are partitioned into three measures: influences of society, individual factors, and marketing and product attributes. Within these mentioned factors, the study has divided them into aspects of three, namely: lifestyle and habits, socio-demographics and psychological factors.

Consumer attitude is conceived to be the influential factor which directs the purchasing intention and behaviour of a customer; one of the most studied topics has been the relationship between green purchases and attitudes. A consumer's psychological factors mostly involve their values and beliefs, attitudes and environmental consciousness. (Shaman & Foropon, 2019).

The attributes of the product can be subdivided into the trust a consumer displays towards the product, the quality of the product, price and its perceived risks; while its marketing is composed of advertising, green word of mouth and eco-labelling. One's habits and lifestyle are depicted through their quality of lifestyle, health status and face consciousness. A consumer's social influence is a selection between their social capital and social norms. Social capital is

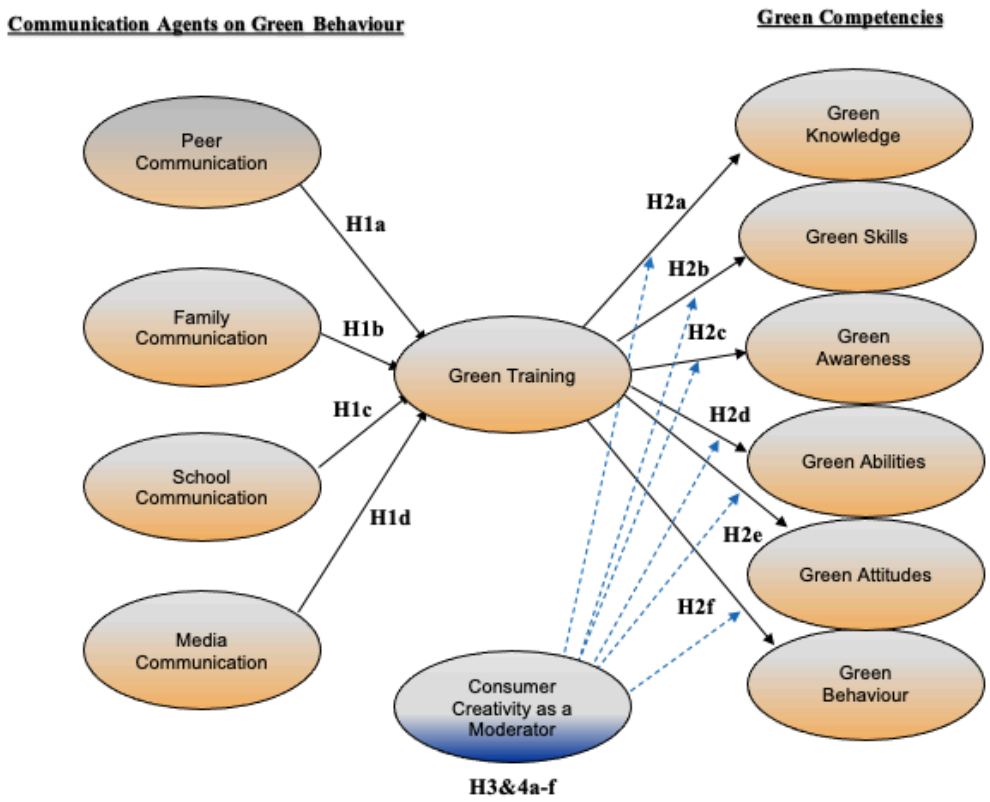
measured through place identity and social media. Social norms are the measurements from the viewpoint of the organisation, peers and culture. As for the socio-demographics they are primarily emulated by a consumer's age, family structure, gender, occupation and level of education (Zhang & Dong, 2020).

1.8. CONCEPTUAL MODEL AND HYPOTHESIS STATEMENT

1.8.1. CONCEPTUAL MODEL

Following the Ability–Motivation–Opportunity (AMO), NRBV, and socialisation theories, and integrating Cabral and Dhar's (2019) and Joshi and Dhar's (2020) models, a conceptual model (Figure 1) and hypotheses were developed. The model posits that green training developed from socialisation agents (i.e., peer communication, family communication, school communication, media communication) will positively impact six green competencies dimensions (i.e., green behaviour, green skills, green abilities, green knowledge, green attitudes, and green awareness) with consumer green creativity acting as a moderator.

Figure 1.1: Conceptual Model



1.8.2. HYPOTHESES

H1a-d: Socialisation agents in terms of (a) peer, (b) family, (c) school and (d) media communications will positively impact green training.

H2a-f: Green training will have a positive impact on (a) green knowledge, (b) green skills, (c) green awareness, (d) green abilities, (e) green attitudes, and (f) green behaviour (six dimensions of green competencies).

H3a-f: Consumer creativity will have a positive impact on (a) green knowledge, (b) green skills, (c) green awareness, (d) green abilities, (e) green attitudes, and (f) green behaviour (six dimensions of green competencies).

H4a-f: Consumer creativity will moderate how green training impacts (a) green knowledge, (b) green skills, (c) green awareness, (d) green abilities, (e) green attitudes, and (f) green behaviour (six dimensions of green competencies).

1.8.3. MODERATING ROLE OF CONSUMER CREATIVITY

Being the act of generating new ideas, approaches and actions, creativity has an important contribution to the process of innovation and is enhanced by training. Thus, the degree to which green training impacts innovative performances depends on the degree to which it influences green creativity (Joshi & Dhar, 2020). Ogbeibu et al. (2020) have tested to define whether the innovative performances in the green performance literature come from environmental dynamic capabilities or competencies. Although the study conducted by Cabral and Dhar (2019) concluded that green training does lead to green competencies (i.e., green skills, green knowledge, green awareness, green abilities, green behaviour, and green attitudes) directly, Joshi and Dhar's (2020) and Ogbeibu et al.'s (2020) study propose that green training can lead to green creativity, thus suggesting that green creativity can moderate the six green competencies.

1.9. RESEARCH DESIGN AND METHODOLOGY

1.9.1. RESEARCH DESIGN

Considering the nature of this study's research questions and objectives, quantitative methods were used to collect and analyse data. Apuke (2017) establishes that research using a

quantitative approach seeks to examine relationships between variables to generate statistical results. This entails analysing numerical data with the use of techniques that are statistical to conclude arising questions such as: how much, where, what, when, how many and who. Furthermore, it necessitates the journey of gathering numerical data to explain methods and rising concerns. Considering that quantitative research measures variables, test models and hypotheses, and explains relationships with surveys being part of its methods (Scarrer & Ramasubramanian, 2021), this study used surveys to collect data from an appropriate sample to test the proposed conceptual model and hypotheses.

1.9.2. Sampling Design

Sampling design is the specific method, procedure, or technique that a researcher follows or adopts when choosing a sample from a desired target population. Considering the inferential goals, the researcher needs to consider the right sample design so that an adequate and appropriate sample size can be obtained. The sample design can be a probability and non-probability sampling technique (Lakens, 2022).

Sample method

The two types of sampling techniques are probability and non-probability sampling. The probability sampling technique is defined by Sharma (2017, p. 749) as "a technique whereby an individual has the same or equal chances of being selected". The selection method can be readjusted mathematically and mainly uses random sampling. Even though this method requires more time and work, it is more accurate for generalisation (Sharma, 2017). Regarding the non-probability sampling, the respondents do not have a known chance of being selected. The commonly used methods of non-probability sampling are convenience and purposive sampling (Asiamah et al., 2017). Considering the survey used an online questionnaire, and there was no list of possible respondents for probability random sampling, a convenience non-probability method was used in this study. Since a screening question was used to target only consumers who have had some green training, the sampling technique was purposive. The convenience and purposive sampling methods have the advantage of easily accessing large sample sizes who are willing and available to take part in the study. Its main disadvantage is the cautious generalisation of the general population (Sharma, 2017).

Target Population

When conducting research and since it is costly and probably impossible to gather data from all members of the general population, the researcher can collect information or data from participants in a target population. The target population possesses specific characteristics of interest from which various types of sampling techniques (e.g., judgmental, purposive sampling methods) can be used. The characteristics can be in terms of age, level of education, gender, residential areas, consumption, shopping experiences etc. (Asiamah et al., 2017). Considering the aim was to collect data from respondents who have been exposed to some socialisation agents for green training and competencies in one way or the other, this study collected data from both females and males, between the ages of 18-55+ years old, who are students and non-students that reside within South Africa. As aforementioned, a screening question was used to purposively collect data from those who have been exposed to some form of green training.

Sample Frame

The sample frame seeks to accumulate statistical information, which is up-to-date, accurate and complete; that is extracted directly from the sample/target population. It holds properties that can be identified through elements of the chosen population having appropriate contact information (Kabir, 2016, p. 169). This study's sample frame comprised of consumers who have had some green training, have exposure to various media platforms and email, can be accessed through social media for the online questionnaire, young and old, female and males and live in South Africa.

Sample Size

The determination of a sample size, Lakens (2022) contends, is an important step in designing an empirical study. The right sample size and method provides valuable information and prevents biases or sampling errors. A sample size can be determined by a rule of thumb, statistical formula, or the method of analysis (Taherdoost, 2017, Lakens, 2022). For example, a study conducted by Siddiqui (2013) states that to conduct structural equation modelling, the recommended sample size should be between 200 to 400 participants depending on the complexity of the model to be tested. Following this recommendation, the sample size that was selected for this study is at least 300 individuals.

1.9.3. Data Collection Approach and Questionnaire Instruments Used

Once approval to conduct research was received from the university's ethics clearance committee, the data collection administration was through questionnaires that were distributed electronically, by using Google Forms. By developing a link to the questionnaire, the university's student email was utilised to gain access to the students of the Witwatersrand and further shared privately to WhatsApp groups, and social media platforms such as LinkedIn, Instagram and Facebook. The consideration that is undertaken during a questionnaire, is that respondents will be a widely scattered group of individuals that are heterogeneous. Similar to multiple studies conducted, such as Yue et al. (2020), Yafi et al. (2021) and Essiz and Mandrik (2021); the questions created in the questionnaire follow a 5-point Likert-type scale ranging from Strongly Disagree (1) to Strongly Agree (5). The socialisation agents (peer, family, school and media communications) were measured using a 4-item scale adapted from Yan and Xu (2010). Green training was measured using a 4-item scale adapted from Gull and Idress (2022). Consumer creativity featured a 4-item scale adapted from Dangelico, Nonino and Pompei (2021). Green competencies were adapted from Cabral and Dhar's (2019) and for all six dimensions: green knowledge, green skills, green abilities, and green behaviour were measured using a 4-item scale. Green awareness was also measured using a 4-item scale adapted from De Silva, Wang, and Kuah (2021, p. 713). While green attitude was measured using a 5-item (Cabral & Dhar, 2019).

The first section of the questionnaire focused on the demographic information of the respondents including their age, level of study, population group, financial status and a screening question to assess whether they have been exposed to green training. And the second section had the socialisation agents, green training, the six green competencies dimensions and consumer creativity constructs. There are several advantages of questionnaires in comparison to other forms of surveys. For example, questionnaires, especially online questionnaires are less costly and less laborious than those of a telephonic or verbal survey. Questionnaires also generally have regulated answers which means that the data will be simpler to capture and analyse. However, the response rate of questionnaires, especially online ones is lower (Kabir, 2016).

1.9.4. Data Analysis

Data analysis began with descriptive statistics whereby the characteristics of the sample was assessed followed by the calculations of constructs' means and standard deviations, and processed through IBM SPSS Statistics. Structural equation modelling (SEM) was the main method of data analysis because of the multivariate nature of the study. Dash and Paul (2021) distinguish two types of SEM: covariance-based SEM (CB-SEM and partial least square SEM (PLS-SEM). Dash and Paul (2021) describe their utility and state that CB-SEM is relevant towards a research objective which involves testing and conforming a theory, while PLS-SEM relates to prediction-based studies and theory development of a research objective.

Considering that the PLS-SEM's application is better for smaller sample sizes, theory development, and non-normal data and automatically calculates mediators and moderators, (Fauzi, 2022; Dash & Paul, 2021), it is the preferred method to test the proposed conceptual model. The SEM analysis started with assessing the measurement model which test's reliability and performs confirmatory factor analysis (CFA) to test the validity of constructs and model fit. To calculate the scale reliability, Cronbach alpha and composite reliability were used. Validity was tested through convergent validity using factor loadings and average variance extracted. Discriminant validity among constructs was also tested using a correlation matrix and with both the Heterotrait-Monotrait (HTMT) and Fornell-Larcker criterion (Lee et al., 2015). SEM then assessed the structural model or path modelling, which analysed the relationships between the constructs, testing the hypotheses.

1.10. DISSERTATION STRUCTURE

The following section will provide the context, structure and flow of the research paper. It underlines the headings that will appear within the research paper consisting of the Study outline, Research context, Literature review, Conceptual model and hypothesis, Data collection, analyses and testing of the conceptual model, Empirical testing of the conceptual model and hypothesis and finally a Discussion of the results, conclusion and recommendations.

1.10.1. Study Outline

The first chapter reveals the essence of the study and will provide content for the research paper. The structure of this chapter will display the introduction to the research, problem

statement and research gap, purpose statement, research objectives, contribution and significance, theoretical framework, studied constructs, conceptual model and hypothesis statement, research design and methodology, dissertation structure and ethical consideration.

1.10.2. Literature Review of Green Training and Competencies

Chapter two will review the literature on the concept, essence and benefits of green training and competencies among employees and consumers.

1.10.3. Conceptual Model and Hypothesis Development

This will comprise the third chapter of the thesis, which aspires to conduct a review of the various models and theories of current studies that explain the varied drivers of green competencies so that a conceptual model and hypotheses can be developed.

1.10.4. Methodology, Data Collection Procedure and Analyses Process

Chapter four will discuss the methods of data collection and analyses that will be appropriate in quantitatively testing the conceptual model and hypotheses.

1.10.5. Empirically Test the Conceptual Model and Hypotheses and Present the Results

The fifth chapter of the research paper intends to empirically test the conceptual model and hypotheses and present the results with the use of IBM SPSS Statistics and the SmartPls software to statistically interpret the research findings. The chapter aims to examine the extent to which the socialisation agents (i.e., peer, family, school and media communications) impact green training, to test the relationships between green training and green competencies (knowledge, skills, awareness, abilities, attitudes, and behaviours) and to assess how much creativity moderates the relationships between green training and green competencies.

1.10.6. Discussion, Conclusion and Recommendation

The final chapter, which is chapter six, will provide an overview of the results found. An analysis of academic implications will transpire from the results found, managerial

implications, and study limitations. The final section of this chapter will consist of recommendations and suggestions for further research and conclusion.

1.11. ETHICAL CONSIDERATION

It is significant to adhere to ethical norms during the undertaken research for several reasons. The aim of the research is promoted by ethical norms and is directed towards desired outcomes such as avoidance of error, knowledge and truth. Because the process of conducting research depends on a high amount of cooperation and coordination among the various participant within the institutes and disciplines, the standard is maintained by ethics which promotes respect, trust, fairness and collaborative work (Kabir, 2016).

The research undertaken for this study must therefore be conducted in a respectful and considerate manner. The researcher will disclose all information regarding the nature and intent of the research to create trust among participants. Once this is accomplished informal or formal agreement must be obtained from the individuals willing to participate in the study. Interested parties' information and participation will remain confidential and the questionnaire that is used as a basis for gathering data will be validated by the University of Witwatersrand's ethics committee so that there is certainty that ethical conduct is upheld during research.

CHAPTER 2: THE CONCEPT, ESSENCE AND BENEFIT OF GREEN TRAINING, CREATIVITY AND COMPETENCIES AMONG EMPLOYEES AND CONSUMERS

2.1. INTRODUCTION

After introducing and providing the background of the study in Chapter 1, this chapter provides deeper insights into the concept, essence and benefits of green training, creativity, and competencies. The chapter starts by defining and discussing the concept and outcomes of green training. It then assesses how much South African employees and consumers are green-conscious, after which green creativity and competencies are discussed in terms of their importance, dimensions, predictors, and outcomes. The chapter ends with a summary of studies on green training, creativity, and competencies.

2.2. GREEN TRAINING

2.2.1. DEFINITION AND VARIOUS CONCEPTUALISATIONS OF GREEN TRAINING

To gain better insight into green training, several prevailing concepts, and definitions are provided in this section. This draws from examples from current literature to gather a holistic perspective of green training and construct a consensus on how the concept is understood. Definitions and conceptualizations will be provided in the perspectives of employees and consumers.

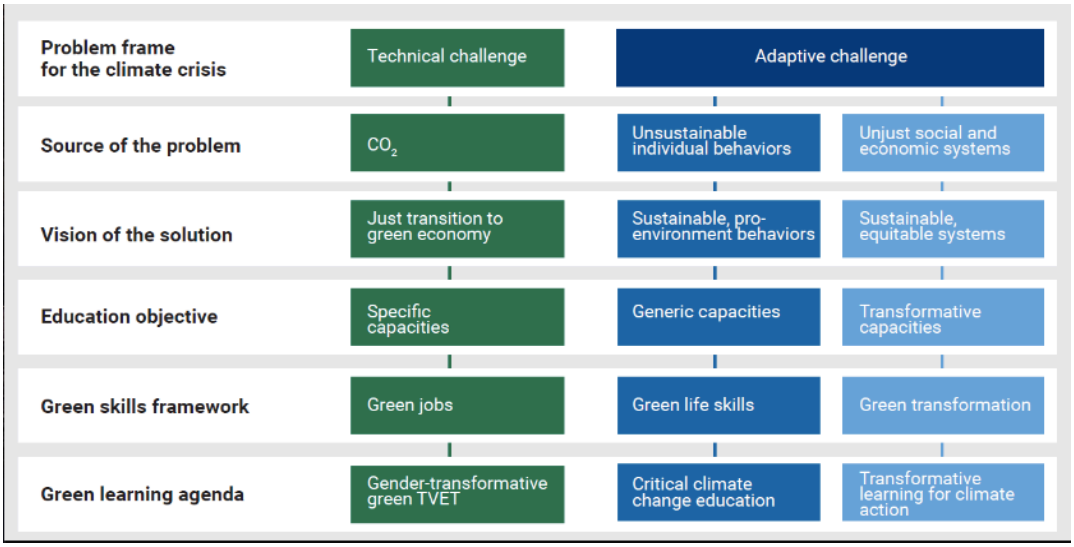
In the employee perspective, Teixeira et al. (2016) have provided an elaborate description of green training, which is determined as a fundamental component that will broaden the competencies of a human resources department and can be used as a methodology to globally transform sustainability. The author further elaborates that green training is a type of environmental-related training that enables all employees to integrate the company's performance with environmental issues. The incorporation of green training is a vital constituent towards green human resource management, and it is concerned with creating awareness of sustainable practices, designing a procedure of education, and implementing sustainable objectives and goals, to form part of the organisational culture. It involves the process of training within the workforce and education which is designed towards integrating principles of environmental management (Yusoff et al., 2020).

Masri and Jaaron (2017) and Cabral and Dhar (2019) also conceptualise green training in the green human resource management perspective. Masri and Jaaron (2017) refer to it as the use of human resource management application that is used to strengthen the endorsement of environmental sustainability methodologies and to positively influence the commitment of employees towards alleviating environmental issues. Green training can be effectively executed by applying workshops which is capable of improving the environmental knowledge and performance of employees and encouraging them towards participating in the organisation's green programs. This can have a fundamentally positive impact on the organisation as it influences the voice of employees and ideas to be heard and materialised towards achieving sustainability (Darvazeh et al., 2022). One of the most concise interpretations to green training has been provided by Ullah (2017) which "consist of employee working methods that reduce waste, proper utilization of resources, conservation of energy and reduces the causes of environmental degradation".

From the consumer perspective, literature is lacking on consumer green training, even though consumers are important contributors to achieving sustainable and environmental protection goals through green products consumption and their ability to choose and purchase eco-friendly products and services (Akhtar et al., 2021). Consumers who have been trained especially from their experiences to be green consumers are those who, 1) consume products with environmental protection consideration, 2) show loyalty towards green products that preserve the environment, 3) refuse to buy/pay for environmentally harmful products and services, 4) engage in pro-environmental behaviour by recycling and reducing household waste, 5) boycott retailers and manufacturers who do not comply with environmental standards, 6) spontaneously promote environmental conservation (Akhtar et al., 2021, p. 3).

Kwauk and Casey (2021) provide a practical example of green training with relevant assertions. The process clearly shows the benefit of implementing the training and how it is used to solve environmental problems. As seen from the following Figure 2.1 below, applies a technical challenge with the source of the problem being an excessive amount of CO2, and steps followed by incorporating a green transitioning to solve the issue. And an adaptive challenge that presents the concerns of unsustainable behaviour and unjust social-economic systems, with steps involving the incorporation of green training to transform these challenges.

Figure 2.1: Model Implementing Green Training for Green Skills (Kwauk & Casey, 2021)



From the various definitions and conceptualisations of green training and from an employee's perspective, green training can conclusively be defined as equipping employees with a sustainability mindset through workshops, which will imprint new information throughout the organisational culture; advance action towards effective use of resources and environmental consideration, and formulate pro-green objectives that will improve brand image, increase productivity, reduce costs and maximise profits. From the perspective of a consumer, green training is the adoption of sustainability and pro-environmental motives by use of socialisation agents, that will make customers green conscious and influence them to participate in behaviour that is beneficial to the environment, such as consuming green products and thus preventing the use of products which are harmful to the environment, reducing water usage, avoiding littering, recycling and energy conservation. These actions produce desirable outcomes which are discussed in the next section.

2.2.2. Studied Outcomes of Green Training

It has previously been stated that adopting an environmentally conscious approach and incorporating green training within a firm will lead to organisational efficiency and achieving green competencies (Cabral & Dhar 2019; Gull & Idrees, 2022). Cabral and Dhar (2019) further report that green training may increase an organisation's environmental performance

and result in being a more effective competitor in the market. It initiates green knowledge which leads to competitive advantage, green innovation, green performance, and a reduction in negative environmental impact (Abbas & Khan, 2022). Green training also enhances green skills which provides individuals with the capacity to influence climate justice, climate action, and climate empowerment (Kwauk & Casey, 2022). It generates green abilities that will equip an employee or consumer to enhance or develop their performance to accomplish environmental conservation. Green awareness creates enlightenment in perception, feelings and consciousness regarding environmental conservation and it will aid in the learning of facts and concepts about the ecosystem and environment (Mishra, 2017). Furthermore, according to Cabral and Dhar's study, green training facilitates green attitudes which will reflect a person's belief system, thought process and emotional state that will allow them to continue positive feelings, and create a determination towards contributing to activities that influence the conservation of the environment. And lastly, green training will lead to green behaviour which will transform an individual, allowing them to embody a green ideology and effectively implement green practices in the workplace or within their general lifestyle (Aboramadan, 2020).

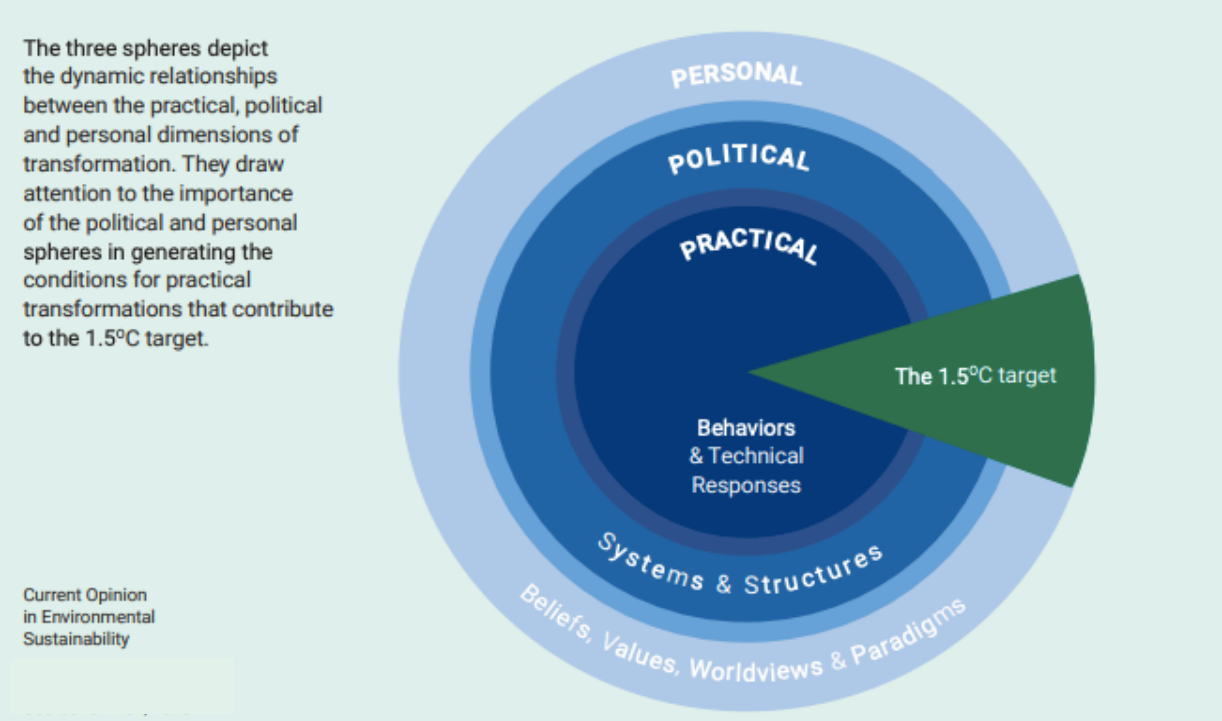
According to the research conducted by Fapohunda et al. (2022) the process of green training involves development practises that advance towards the reduction of waste, resource utilisation; which is both effective and efficient, preservation and conservation of energy, and the curtailing actions of sustainable debasement. Furthermore, it is associated with an organised practice that extends green training towards the induction of new employees. This will increase their commitment towards the protection of the environment since the information received from the training would have been extensive enough to encourage the employees to support the policies and procedures integrated by the organisation with the primary objective towards environmental sustainability. To expand further on the positive outcome that recycling waste material has on the environment, Yusoff et al. (2020) assert that it leads to a cleaner and more sustainable environment, which then provides better quality of air and ensures that it contributes to the improvement of public health.

When green training is applied to an organisational environment it will assist employees to perform effectively, contribute towards enhancing their capabilities to adopt unique information that can be used for innovation and improve the overall competitive performance

of the business (Obaid & Alias, 2015). The quest undertaken by an organisation to obtain a competitive advantage has compelled their manufacturing process to be conscious, more attentive and show importance towards empowering employees to embrace behaviour that is magnanimous towards the environment, to transform sustainability goals and consequently foster sustainability development (Chung, 2020)

The comprehensive mission, when introducing the goal of sustainability, intends to establish good health amongst the workforce to ensure that they are thoroughly educated, and nurture their proficiencies and awareness which is needed to construct productive employees and citizens who are proactive in their contribution towards a green society. The strategic procedure would ultimately involve the inclusion of several sectors: the government, public and private sector, non-government and philanthropic organisations, multi-national enterprises, and societal individuals. The magnitude of interaction and collaboration to this extent and between all the mentioned agents represents a movement towards the achievement of sustainable consumption, the integration of an eco-friendly process of production and the development of a healthy and harmonious society (Chams & García-Blandón, 2018). An example of the synergetic global efforts of multiple sectors operating towards a common goal and implementing green training for this purpose, which appears in the study administered by Kwauk and Casey (2022), is the drive towards achieving the 2016 Paris Agreement. This is a legally binding international treaty that operates in unison with 196 parties and encourages countries to adopt sustainable practices and take climate action to keep global warming to less than 1.5 degrees Celsius, as it stands, this global goal is deemed to be achieved by the year 2030. The following Figure 4 below is an indication of the spheres of transformation that begin from an individual consciousness (personal transformation) that has the greatest effect on environmental adoption. An influence in processes, policy and institutions (political transformation), and reformative change (practical transformation), which are aimed at achieving the 1.5 degrees Celsius target.

Figure 2.2: The Three Transformational Spheres (O'Brien, 2018)



2.2.4. How Much are South African Consumers and Employees' Green Conscious

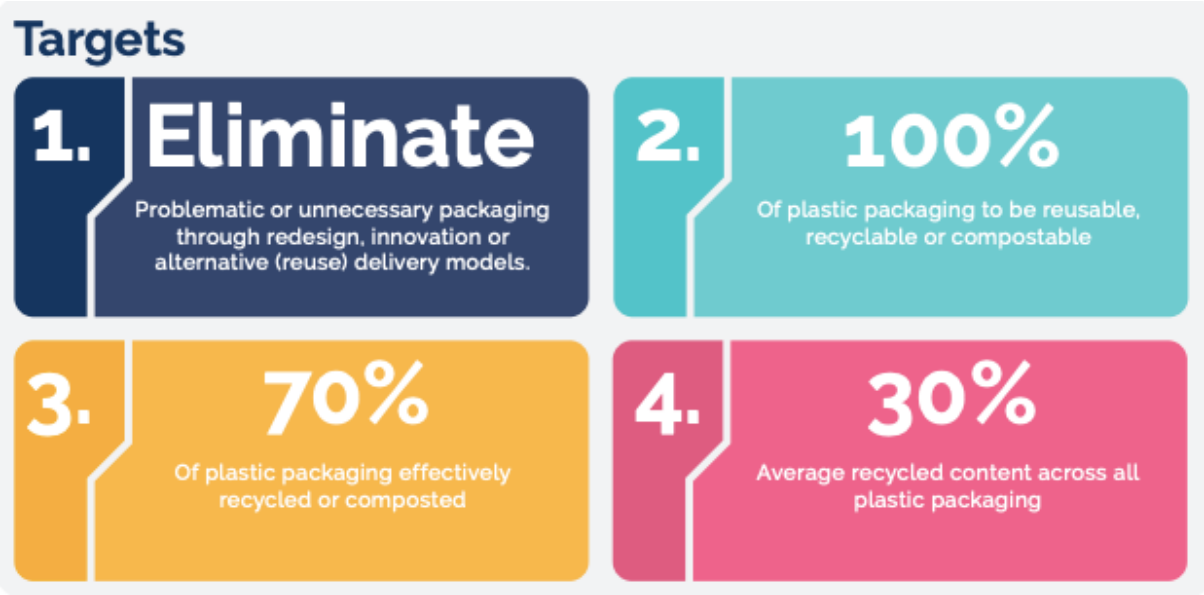
The concept of green consciousness constitutes an interest, attitudes and opinions towards the problems within the environment, and to possess an awareness which encourages the prevention and improvement of environmental pollution and deterioration as a result of human misconduct. It can be defined in numerous ways but is understood as an intrinsic factor which influences a person's consumption behaviour in an eco-friendly manner. The theory can be split into attitudes, knowledge, recycling degree, recycling behaviour type, and an individual's participation in activities that will reduce environmental degradation (Kim & Lee, 2023).

A study conducted by Mkhize and Ellis (2020) drew information from 317 South Africans above the age of 18. The sample exhibited only moderate levels of environmentally considerate consumer behaviour. Aspects of the statistical analysis from the research have been evaluated as the perspective to understand where this segment of the population in South Africa resides regarding green consciousness. 35.7% of individuals declared that they purchase products that are formed from recycled paper, 33.1% buy products made from recycled glass, and 37.7% participate in the purchase of recyclable products. 41.1% stated that they would be willing to

reduce their amount of driving so that they can save fuel. 74.8% were in agreement that they made a concise effort to reduce the amount of electricity that was used. 41.4% disclosed that products were purchased that had been packaged in reusable containers. 51.6% stipulated that the number of products used that were made of scarce resources was reduced. Individuals that made use of recycle bins were 37.5%, and 40% of them made use of recycling centers. Among the feedback from these targeted South Africans, the only convincing green-conscious behaviour is related towards an attempt to reduce the usage of electricity, meaning that the other results are rather concerning and show a lack of conditioning or will to be sustainable.

However, the positive that can be extracted from the above study is that there is some prevalence of green consciousness, which perhaps merely needs to be nurtured, taught, or trained. This directive can be seen in initiatives such as the SA Plastics Pact (2023), which operates in line with the Ellen MacArthur Foundation for a new plastics economy vision which is dedicated to ensuring that the country transforms its way of using and disposing of plastic, and aims at spreading green consciousness across South Africa. Their agenda of objectives which they intend to meet by 2025 can be viewed in below Figure 2.3, which has been appropriated from their annual report for 2021-2022.

Figure 2.3: Annual Report Targets (SA Plastics Pact, 2023)



Ambitious drivers of sustainable awareness such as the SA Plastics Pact (2023) are fundamental for the growth of the country, considering that 54% of South African adults have stated that they are dedicated to making better environmental decisions as a result of increased single-use plastic amidst the COVID pandemic (Mastercard, 2021). The findings of the research that was carried out by Mastercard, 81% of adult South Africans have said that they have become more mindful as a result of the pandemic, regarding the impact they have on the environment, with the majority of respondents (89%) being Gen Z.

Although, according to Mastercard (2021), up to 98% of South Africans are prepared to personally address the underlying issues of sustainability, the evidence is concerning as to the effect and impact which individuals and organisations take to become environmentally conscious and further, to look after the environment. South Africa currently ranks poorly on the global sustainability index at 218th (Mulhern, 2020). This means that even though the sample respondents from Mastercard indicate an aspiration to improve environmental circumstances, the current state of the country does not reflect similar practices. This can be viewed by the below Figure 2.4 which represents the global sustainability standings and ranking of South Africa, taking into consideration the following tested variables: policy, pollution, climate change, oceans, biodiversity and energy. All of which South Africa has received a low score, excluding the rankings prescribed towards climate change and energy.

Figure 2.4: Global Sustainability Index (Mulher, 2020)



According to Hoosain et al. (2023), many countries in the world have progressed further than South Africa in terms of adopting and implementing practices of environmental consciousness. The author believes that to improve current circumstances, education needs to be incorporated within the sectors of the country that include the government; regarding creating stricter policies, and incentives or financial assistance for businesses. South Africa is confronted with obstacles towards reaching a more sustainable environment, but achieving specific long-term plans can be accomplished through sufficient green training, global partnerships, and private and public compliance. This research paper aims to assist in accomplishing these goals by furthering the current literature relating to South African sustainability, creating environmental consciousness in both the organisational and public context, and influencing behavioural changes amongst individuals in the country.

2.3. GREEN CREATIVITY AND COMPETENCIES

2.3.1. WHAT IS GREEN CREATIVITY AND COMPETENCIES?

With the concern for global warming and pollution impacting general health standards, the development of environmentally concerned stakeholders has transitioned businesses to adapt their operations (Singh, et al., 2020). This advancement requires organisations to come up with innovative ways to create new product and service solutions that are eco-considerate and sustainable, which establishes the necessity for green creative outcomes and competencies. This evolved global standard of being environmentally responsible, forces businesses to harness green human resource management, or green training, which meets the expectations of stakeholders to develop organisational green creativity, that enhances brand reputation and corporate image (Huo et al., 2020).

The role of green creativity and competencies has not received significant attention, although its importance is piercing boundaries towards sustainable development and green innovation. Several well-established and innovative companies have integrated green creativity and competencies, through the use of collaboration with competitors such as PepsiCo, Coca-Cola, Red Bull and Unilever, collectively working towards sustainability. They have successfully reduced carbon emissions of up to 43.5 million metric tons of CO_2. by effectively transitioning from fluorinated gas refrigerators (Awan et al., 2019). The use of green creativity and competencies has further shown great prevalence in the automotive industry, influencing a

major stride towards progressive green transitioning with companies like Tesla producing electric cars and multiple other brands incorporating fully electric or hybrid ranges into their product lines such as BMW, Lamborghini and Mercedes-Benz; implementing crucial environment-friendly creativity decisions (Jia et al., 2018). Referring to Awan et al. (2019) the behaviour of companies that implement green creative approaches is anecdotal evidence that this adoption is necessary for developing green innovative solutions. Similarly, Sustainable Energy Africa (2024) is focusing its efforts to develop long-term electricity scenarios and enabling climate action by citizens, local businesses and organisations, through the setup of data systems, stakeholder engagement, and creating action significant areas such as energy efficiency in buildings, grid decarbonisation and climate resilience.

Figure 2.5 has effectively captivated a thorough description with multiple facets of green competencies, providing a depiction of the process involved when incorporating the competencies into an organisation. Bianchi (2020) reports the starting phase of reimagination is developing a structure of variables which leads toward the strategy pathway, which requires the adoption of various departments to assimilate the vision of the business, and lastly is the implementation pathway that leads to numerous beneficial outcomes such as sustainable consumption, eco-efficiency, eco-effectiveness, sustainability systems, and social responsibility.

Figure 2.5: Green Core Competencies (Bianchi, 2020)



Huo et al. (2020) has a point of convergence towards environmental pollution and its effect on restricting China's development. As a result, the current president, Xi Jinping introduced 5 development concepts to improve the conditions in the country which are: coordination, openness, innovation, sharing, and green. has utilised the concept of developing green competencies as an essential ideology for the progression of the economy and expresses that to achieve this direction, the focal point for ecological and environmental protection includes green creativity. The development and incorporation of thinking creatively is a progressive trend within the global context that is aimed at supporting value chains, management of supply chain relationships, and initiatives involving sustainable development. Creativity performs a

fundamental role in the improvement of processes and the design of products with the application of novel ideas (Awan et al., 2019). The research paper published by Jiang et al. (2021) introduces a multi-dimensional model which was constructed based on nine studies, that elaborates on the 4Ps of green creativity as seen in Figure 2.6 below.

Figure 2.6: Four Dimensions of Green Creativity (Awan et al., 2019)



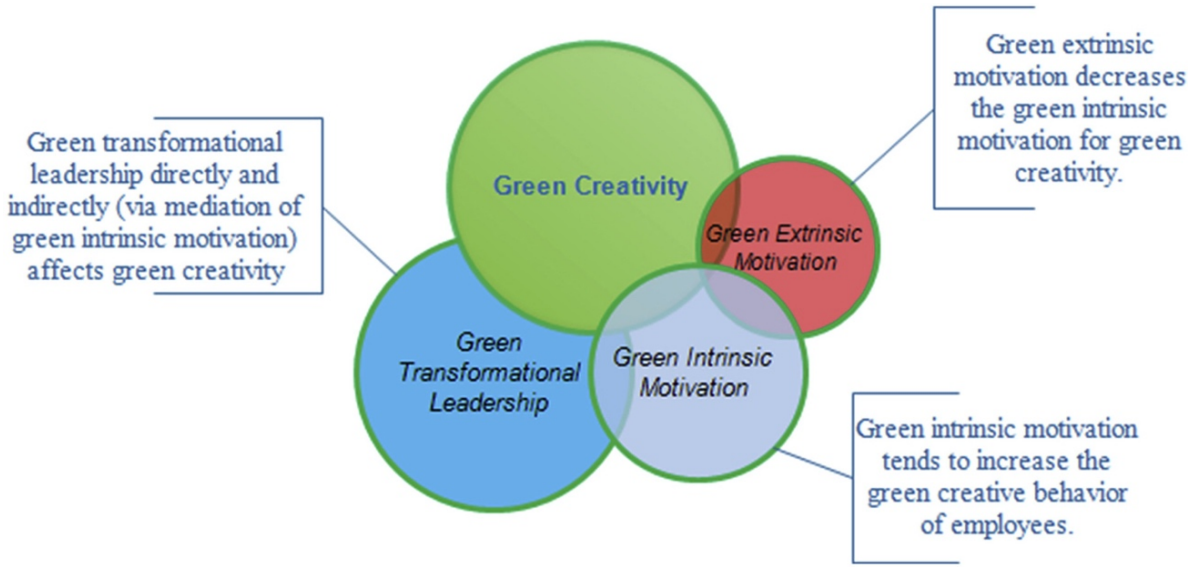
The first aspect which is green creative motivation relates to a person's intrinsic desire to develop useful and novel ideas regarding green products. Employees who are strongly motivated by such intrinsic desires have a certain perception to act within the environment and utilise their creative ideas to effectively improve green products. Green creative thinking relates to a person's cognitive style and flexibility of thought. It conceptualises one's cognitive capabilities to develop useful and novel ideas about a green product. Within an organisational context, it defines an employee that thinks about green-related problems elaborately, lastingly, flexibly, and fluently. Green creative behaviour relates to the ability to carry out activities that lead to the improvement of novel and valuable thoughts regarding green products. Considering

the process of creating green products is complex and dynamic, the procedure for carrying out certain activities relates to effective communication, learning new skills and sharing knowledge. The final and most important dimension is green creative outcome, which is the capacity to achieve creative goals and objectives that have been defined through the motivational, cognitive and behavioural processes (Jiang et al., 2021).

2.3.2. Importance of Green Creativity and Competencies

A study accomplished by Li et al. (2020) investigated the use of green transformational leadership to generate green extrinsic and intrinsic motivation which influences green creativity. Figure 2.7, focuses on the mentioned components (green transformational leadership, green intrinsic, and extrinsic motivation) and highlights the purpose of green creativity, and further, the study that was done by Li et al. (2020) develops an understanding of the influence that these components have on creativity and the importance that creativity has on green competencies.

Figure 2.7: Green Creativity, Extrinsic and Intrinsic Motivation and Transformational Leadership (Li et al., 2020)



The concept of green transformational leadership, which can also be referred to as environmental transformational leadership, is a leadership style which assimilates the incorporation of green training, and it aims towards motivating and empowering employees to obtain green implemented goals, promote green cultural change in the business, and transform green vision that promotes the adoption of green competencies (Mittal & Dhar, 2016; Cabral

& Dhar, 2019). According to Li et al. (2020), green intrinsic motivation is influenced by green behaviour and relates to the way a person conducts themselves, fabricating sustainability because it is naturally gratifying. An example is a person who has green awareness and love for the environment, which will influence employees' green behaviour to manufacture products and services which are environmentally friendly. This further draws upon green skills, abilities, knowledge, and attitudes to prevent damage that is caused by an organisation's policies and actions. This passion for preservation is a vital quality of green intrinsic motivation, and it can guide individuals to have more creative ideas to develop new environmentally friendly products and services. It can therefore be seen that the use of environmental responsibility for green creativity proposes a relationship between organisational efficiency; to produce innovative and sustainable solutions, which leads to achieving sustainable development (Huo et al., 2020). The notion of green extrinsic motivation is associated with conducting acts that benefit the environment as a means of reducing waste, improving efficiency, and conservation because the result of acting in this manner could lead to favourable outcomes such as public approval, reward or avoiding punishment. This type of motivation involves the operation of green competencies, leading to pro-environmental activity (Li, et al., 2020).

As specified by Huo et al., (2020), the notion of green creativity is described as a form of innovation that assists in balancing and enhancing economic benefits and contributing to environmental pollution reduction through the use of resource efficiency, which facilitates harmony in the development of the organisation's ecological environment and economy. It should be the primary objective of an organisation to maintain a vision that pursues environmental protection and sustainability which places the responsibility on the business to incorporate green creativity and competencies to assist employees in their venture to recognise and accept the vision that has been portrayed for a better future of the firm, economy and public. Within South Africa, this can be seen by a commitment to reducing carbon emissions and achieving carbon neutrality by 2050 to combat climate change and will be achieved through policies such as the incorporation of carbon capture and energy-efficient appliances. These are examples of creative green competencies in practice, important in developing sustainability in South Africa (Bekun, 2024; Feng, 2022).

2.3.3. Dimensions of Green Competencies

Various dimensions of green competencies have been identified. The dimensions varied from those taught at the university as students and consumers, as a personality trait or acquired from society and those gained from organizations as employees. In terms of the dimensions gained from the university training, Murga-Menoyo (2014) identified four dimensions: 1) generic competencies, 2) generic competencies for sustainability, 3) specialised green skills for green economy and 4) "top up' existing green competencies for sustainability. The generic competencies are necessary for every citizen and applied to everyday life, which corresponds to instrumental, systemic or interpersonal profiles. Generic competencies in sustainability are necessary for social behaviours which will reinforce a sustainable economy. Specialised green skills are competencies of technical profile that are required to make green job performance possible. Lastly, "top up" competencies relate to dynamizing leadership in social processes to continuously educate and update professionals.

In the context of personality traits and societal influence, Subramanian et al. (2016) identified three green competencies: natural, acquired, and effective green competencies. They define natural green competency as one's observation and mentoring received during the formative stage of green behaviour from social groups such as friends, relations, or parents. Acquired green competencies are the accumulation of knowledge and skills acquired from prior experience on environmental issues which creates a strong conviction and feeling to behave in an environmentally friendly manner, and effective green competencies are the combination of natural and acquired green competencies.

Studies in green human resource management and in the context of employees, Cabral and Dhar (2019 and 2021) identified six green competencies dimensions including attitudes, behaviours, knowledge, skills, awareness and abilities. Table 2.1 provides definitions of the competencies as follows.

Table 2.1: Six Dimensions of Green Competencies

Green Competencies	Author/s	Description
Green Knowledge	(Vargas-Hernandez & Vargas-González, 2023)	Providing a human being with the ability to rationally comprehend the nature, qualities, and relationships of natural resources used to maintain environmental balance.
Green Skills	(Lodge, 2021)	Skills needed to support sustainability in society. Hard skills can be sustainability, auditing, and environmental sustainability. Soft skills are green management, planning and communication.
Green Awareness	(Sullivan, 2019)	Understanding of environmental protection and actions relating to environmental degradation.
Green Abilities	(Cabral & Dhar, 2021)	A persons capacity to incorporate acquired practical expertise with theoretical knowledge, to solve sustainable issues within the environment.

Green Attitudes	(Alvarez-Garcia et al., 2019)	The degree of which a person assumes responsibility towards the natural environment through collective, individual and government actions.
Green Behaviour	(Varela-Candamio et al., 2018)	A pro-green approach is formulated by statutory control conditions from social norms that arise through intrapersonal values.

2.3.4. Predictors and Outcomes of Green Creativity and Competencies

Green training being a predictor of green competencies is consistent with the findings of several authors (Cabral & Dhar 2019; Cabral & Jabbour 2020; Gull & Idress 2022; Yafi et al., 2021). Although the variables tested in their conceptual models have minor distinctions. Gull & Idress (2022) found that the outcome of green training is green competencies and that both variables will lead to organisational efficiency. Similarly, Yafi et al. (2021) established that green training will lead to green competencies, however, it was further stated that green training leads to the development of green motivation, and all the variables tested are outcomes of green environmental performance. Whilst Cabral and Jabbour (2020) reveal that green training is a predictor of not only green competencies, but proactive environmental management maturity, and environmental performance: the moderating role of environmental commitment; the model used by Cabral & Dhar (2019) only tests, and demonstrates the outcome of green competencies from green training.

Meanwhile, studies in an organisational context measure the use of green creativity in green training and influencing sustainability. Huo et al., (2020) demonstrate the use of commitment to human resource management, leading to green human resource management which predicts green creativity. Jia et al., (2018) tested the relationship that transformational leadership, green human resource management and green passion had on predicting green creativity which were

all positive and supported. Joshi & Dhar (2020) exhibit the outcome of green creativity from green training, whilst Mansoor et al., (2021) illustrate green management initiatives such as green strategy and green HR practices being a predictor for green creativity. Lastly, Ogbeibu et al., (2020) applied a green human resource management bundle comprising green recruitment and selection, green performance and compensation, and green involvement and development which predicts green creativity.

2.3.5. Summary of Green Training, Creativity and Competencies

An approach of greening a management team and creating a sustainable organisational philosophy has gained momentum among scholars and the industry as an attempt to reduce the effects of hazardous products and industrial waste that are caused by conventional products and services, and the result of traditional business practices (Li, et al., 2020). The use of green training, creativity and competencies has been shown to be beneficial in creating organisational performance, competitive advantage, reducing environmental degradation and improving sustainability; which means that it has become indispensable. Below Table 2.2 is a list of studies that have researched the use of green training, creativity or competencies as a means to conduct a summary of several authors and their findings.

Table 2.2: Summary of Studies Relating to Green Training, Creativity and Competencies

Author	Studied Construct	Perspective	Country	Key Finding
(Gull & Idrees, 2022)	Green training, Competencies & Organisational efficiency	Management /GHRM	Pakistan	Grounded by the Ability-Motivation-Opportunity theory, the study found that by adopting green training in an organisation, will lead to both green competencies and organisational efficiency.

(**Ogbeibu et al., 2020)**	Green Training & Green Creativity	GHRM	Malaysia	The results show that technological turbulence, green recruitment and selection and green training, involvement and development are positive predictors of green team creativity. Green performance and compensation have a negative impact on green team creativity, while green team creativity positively predicts green product innovation, and environmental dynamic capability negatively predicts green product innovation. Technological turbulence reinforces the positive impact of green recruitment and selection on green team creativity and reduces the positive impact of green training, involvement and development on green team creativity.
(**Huo et al., 2020)**		GHRM	China	The researches establish that commitment to HRM indirectly affects green creativity, whilst GHRM intermediates the process. Environmental regulations has a positive relationship between commitment to human resource management (COHRM) and GHRM, and moderates GHRM in the relationship between COHRM and green creativity.

(**Joshi & Dhar, 2020)**		Management /GHRM	India	The findings show that green training has an impact on organisational green creativity, directly and indirectly, and green dynamic capabilities influences green creativity via the moderating role of resource commitment to influence greater creative outcomes.
(Cabral & Dhar 2019)	Green Training & Green Competencies	GHRM	India	In accordance with the Natural Resource-Based View, the study develops a green competencies scale comprising of: green knowledge, skills, abilities, awareness, attitude, and behaviour. The study posits that green training is a predictor of the 6 competencies and through testing, substantiates these findings.
(**Cabral & Jabbour 2020)**		GHRM	India	Results from this study indicate that environmental performance is an outcome of green training. Both proactive environmental management maturity and green competencies can mediate the relationship between green training and environmental performance, and environmental commitment can moderate proactive environmental management maturity and environmental performance.

(Yafi et al., 2021;)	Green Training & Environmental performance	GHRM	Malaysia	This research reveals that green training will lead to green environmental performance, and both green competencies and green motivation positively mediate the relationship between green training and environmental performance.
(**Kuo et al., 2022)**		Management /GHRM	Pakistan	By applying the Social Learning theory and Resource-Based view, the study reveals a significant and positive influence of green HRM practices (green compensation and reward, green performance management and appraisal, green training and development, and green recruitment and selection) on green innovation and additionally on environmental performance.
(Jia et al., 2018)	Green HRM, Transformational Leadership & Green Creativity	Management /GHRM	China	With implementation of the Ability-Motivation-Opportunity theory, the study found that transformational leadership will inspire employees' green passion through influencing GHRM, which then has a positive effect on employees green creativity.
(Mansoor et al., 2021)		GHRM	Pakistan	The study's findings reveal that green management initiatives (green strategy, and green HR practices) and green transformational leadership (TFL) lead to green creativity. Furthermore, TFL successfully

				mediates the relationship between green management initiatives and green creativity.

2.4. CONCLUSIONS

This chapter has reviewed the current literature on green training, competencies and creativity, and highlighted many imperative components that any current organisation would need to adapt to maintain competitive advantage, enhance their brand image and customer loyalty, increase efficiency, reduce waste, and improve and maintain environmental conditions. The practice of applying green training, competencies, and creativity are approaches of cause and effect; the cause of environmental degradation due to business practices that have been harmful to the planet has called for the effect of adaptation for better output. South Africa is progressing at a slower rate than several other countries, raising concern for the country's welfare and future. South African organisations need to develop their green training, which is applied through a green human resource management department or green management department, which will then lead to green competencies and green creativity, that can be harnessed to develop creative outcomes for innovative problem-solving, and green products and services. However, this should not be limited to the internal environment of the organisation, considering businesses have influence and reach in the market, they should make use of their resources to effectively green train consumers as this will have a greater impact in the pursuit of sustainability.

CHAPTER 3: MODELS AND THEORIES EXPLAINING VARIED DRIVERS OF GREEN COMPETENCIES: CONCEPTUAL MODEL AND HYPOTHESES DEVELOPMENT

3.1. INTRODUCTION

This chapter reviews models and theories that provide some explanations of the diverse factors influencing the development of green competencies. It analyses the conceptual models of previous studies to develop an understanding of the types of relationships amongst the studied constructs so that this study's conceptual model and hypotheses can be developed. The chapter starts by discussing the models and theories of previous studies. It then selects and discusses the theories and models relevant to the current study, after which the current study's conceptual model and hypotheses are developed.

3.2. MODELS AND THEORIES USED BY PREVIOUS STUDIES TO EXPLAIN GREEN COMPETENCIES

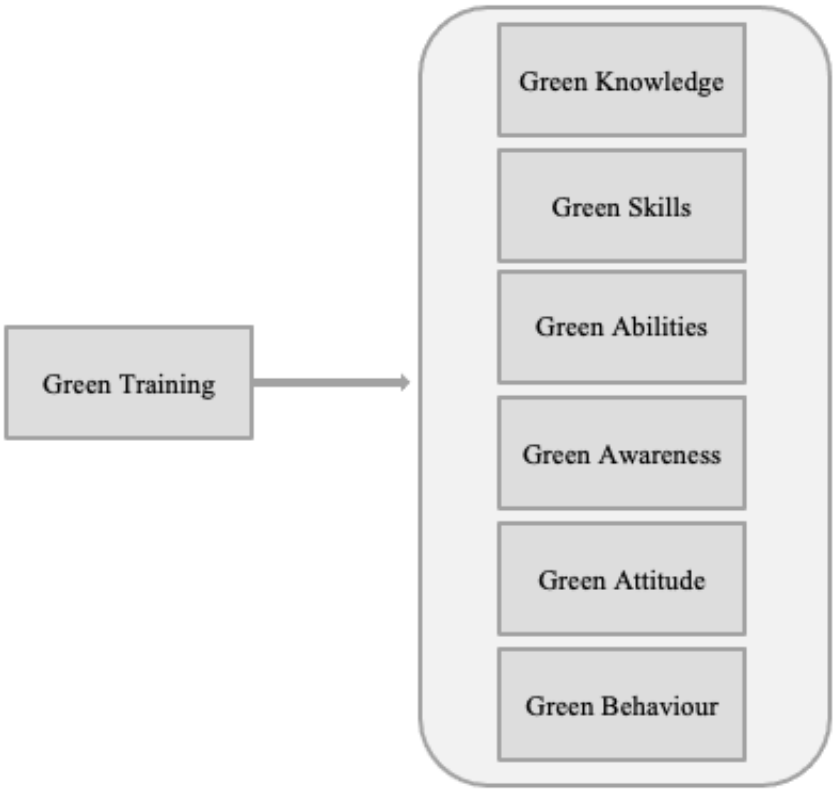
3.2.1. CABRAL AND DHAR'S (2019) MODEL AND APPLIED THEORIES

Cabral and Dhar (2019) believe that to gain a competitive advantage in the market, an organisation must incorporate green human resource management (GHRM) into their operational practices. The achievement of GHRM requires employees green training and competencies. Thus, Cabral and Dhar (2019) developed a green competency scale which is a 29-item and multi-dimensional scale. A factor analysis of the 29 items comprise 6 dimensions, namely: attitudes, behaviour, skills, knowledge, abilities and awareness. Guided by the Natural Resource-Based View theory, Cabral and Dhar (2019) used the green training to test the nomological validity of their green competencies scale. The model (Figure 3.1) posits that green training positively impacts the 6 dimensions of green competencies. A sample of 268 tour operators in India was used to test the model. The results revealed that green training positively and significantly impacted all 6 dimensions of green competencies with green attitudes dimension most impacted. Considering the quality of the scale, it has been adapted in Pakistan (Gull & Idrees, 2022; Yahya et al. 2022), Malaysia (Yafi et al., 2021) and in China (Awan et al., 2023). Sieg and Dreesman (2021) conducted a study involving bumblebees that required participants to nurture the bumblebees to promote environmental awareness of the

harm occurring to insects, which is viewed as green training. This study incorporated dimensions to identify relationships between pro-environmental behaviour intentions and knowledge, attitude, interest, fear, and learning enjoyment of participants. The above-mentioned studies, along with Abdelkareem et al. (2024) have incorporated the same competencies developed by Cabral and Dhar to test their theories, as it provides a comprehensive framework for understanding and analysing factors that influence sustainable behaviour which is why it was found as a reliable and relevant dimension to include for this study.

However, a systematic literature review conducted between 2017 and 2023 by Suharyani and Nurhayati (2023) revealed that there are limited studies in the test of Cabral and Dhar's (2019) model and in explaining green competencies. Studies are particularly lacking in green competencies from a consumer perspective (Murga-Menoyo, 2014). Thus, this study will test the scale, and model, and examine other predictors from the perspective of consumers.

Figure 3.1: Cabral and Dhar's (2019) Model

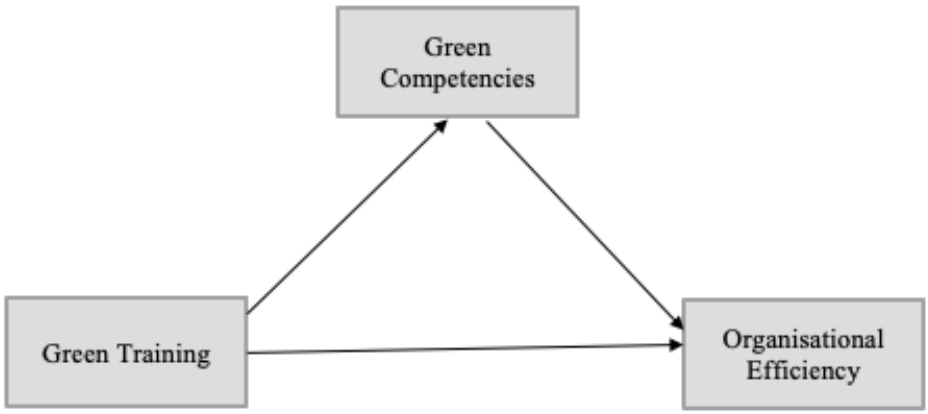


Following Cabral and Dhar (2019), this study will also apply the NRBV theory which suggests that the improvement of a firm's positioning and green performances is based on their green resources (green training of their employees), commitment of green resources and resultant capabilities (instilling green competencies) (Cabral & Dhar, 2019; Joshi & Dhar, 2020).

3.2.2. Gull and Idrees' (2022) Model and Applied Theories

Like Cabral and Dhars' (2019) model, Gull and Idrees' (2022) model proposes that green training will lead to green competencies. It additionally suggests that the green competencies will drive organisational efficiency which they define as "the relationship between inputs and outputs whereby a lower ratio of input to output assumes an efficient system or an organization" (p. 109). Gull and Idrees (2022) emphasise the significance of integrating green training into organisational operations by incorporating it in green management practices as a means to develop organisational efficiency. Their study further examines the mediating effect of green competencies in the relationship between green training and organisational efficiency. The authors made use of the Ability-Motivation-Opportunity (AMO) theory to support the arguments. The theory posits that people gain ability from adequate training, which gives them the motivation to take opportunities for better job performance, thus producing efficiency (Gull & Idrees, 2022). Their conceptual model is observed in Figure 3.2.

Figure 3.2: Gull and Idrees's (2022) Model



Gull and Idrees (2022) tested their model using a cross-section and quantitative approach which specifically focused on ISO – 14001 certified textile manufacturing organisations. Their data was collected from 235 employees at the managerial level with the use of purposive sampling. The sample was collected from individuals within Pakistan. They found that incorporating green training is imperative for allowing environmentally conscious organisations to accomplish their objectives regarding resource efficiency and achieving protection of the environment. Furthermore, they found that if a firm equips its employees with green competencies through training, it will enable them to adopt eco-efficient practices within the business, which has also been established to increase the overall performance of the hotel industry and environmental performance (Cabral & Jabbour, 2020).

This study conducted by Gull and Idrees exposes an undeniable business strategy to facilitate levels of abilities, awareness, attitudes, behaviours and knowledge among their employees to add value towards environmental protection and enhances businesses within the Pakistani textile sectors. Competent workers will feel an increased drive-in motivation and will more likely be explorers of opportunities which reduce issues that are currently experienced within the environment, and this will inspire organisations to include green management practices as a method to overcome challenges and will be a cause to strengthen a green managerial structure. Relating to a viewpoint for practicality, organisations that manufacture textiles would want to establish green management practices and consistent policies to meet the expectations of progressive international stakeholders and retain competitive positioning within the global market.

3.2.3. Ogbeibu et al.'s (2020) Model and Applied Theories

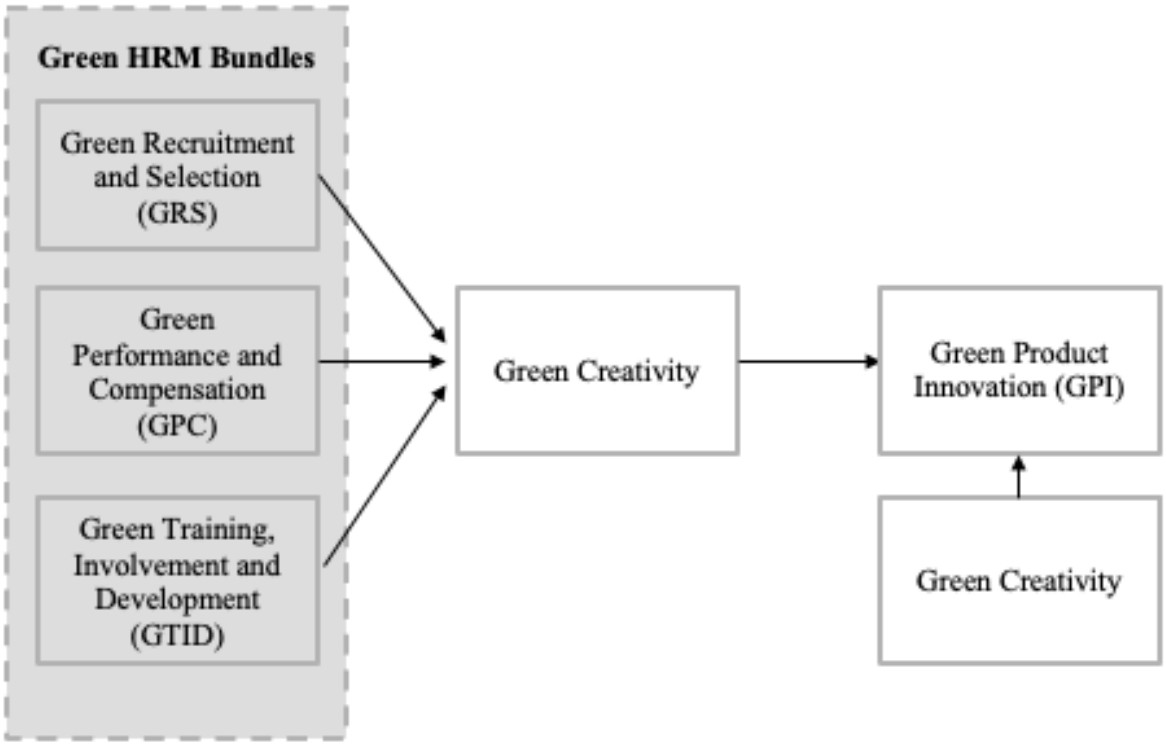
Ogbeibu et al.'s (2020) model posits that green human resources practices including green recruitment, performance and green training positively impacts green creativity, which with environmental dynamic capability (or green competencies) impact green product innovation. The proposal of these relationships was guided using the stakeholder theory. According to Harrison et al. (2015), it is a theory which is practical and aims at managing the expectations of stakeholders, that is an efficient approach as it influences the behaviours and attitudes of stakeholders which can encourage their purchasing behaviour, motivate them to share valuable

information or encourage them to work harder and remain loyal to the organisation. Ultimately the theory is effective at harnessing stakeholder energy to fulfil organisational objectives.

Ogbeibu et al. (2020) tested their model using cross-sectional survey of 229 respondents from 31 Malaysian manufacturing organisations and analysed the data using SmartPLS3 (partial least square path modelling). Their results showed that the three GHRM practices studied, and which included green training were positive and significant predictors of green creativity. They surprisingly found that the relationship between environmental dynamic capabilities or competencies had a negative influence on green product innovation. Ogbeibu et al. (2020) suspected that this result could be most likely be due to the result of the organisations' policy regarding reward and compensation which had not been correctly implemented, resulting in a reduced motivation to adopt green behaviour and practice.

An effective practice can be seen in a study conducted in Pakistan by Yahya et al. (2022) which found that green competencies consist of variable skills that are significant in contributing towards the external environment and boosting the accomplishment of green innovation. While creativity is referred to as one's ability to construct original ideas, innovation is involved with implementing the ideas (Stone, n.d.). Seeing as there are similarities between creativity and innovation, a study in the Sri Lankan manufacturing sector conducted by Pandithasekara et al. (2023) has concluded that sustainability learning capabilities or competencies successfully mediate the role between sustainability control systems and green creativity. This means that businesses should include sustainable competencies within a business's core values to achieve green creativity. Furthermore, this paper states that managers of an organisation should implement policies and systems to influence the behaviour of employees, aligning them to the sustainable goals of the business. This is achieved through sustainability control systems which comprise: interactive control systems, diagnostic control systems, boundary systems, and belief systems; which will then lead to green competencies. Their conceptual model can be seen in Figure 3.3 below.

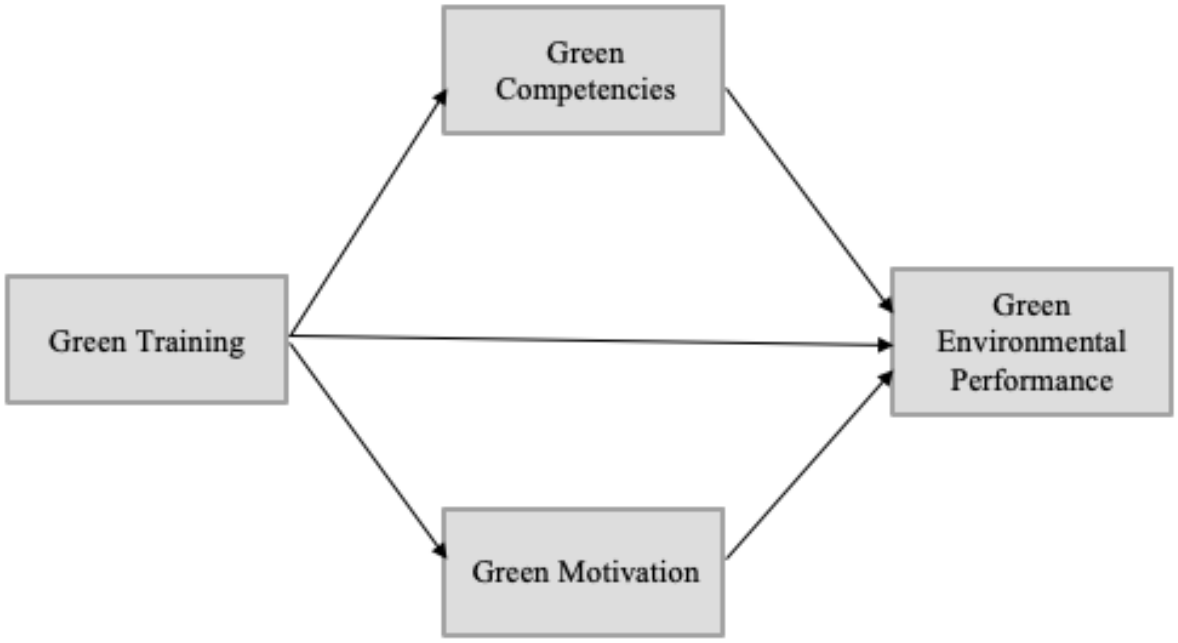
Figure 3.3 Ogbeibu et al.'s (2020) Model



3.2.4. YAFI, TEHSEEN AND HAIDER'S (2021) MODEL AND APPLIED THEORIES

Yafi et al.'s (2021) model (Figure 3.4) proposes that through the mediation of green competencies and motivation, green training will impact green environmental performance positively. They used the lenses of the AMO and NRBV theories to propose the impact that green training has on green environmental performance. Yafi et al. (2021) opine that the training and resultant motivation and opportunities that AMO theory suggest will be an organisational resource with an environmental/natural mindset (NRBV) that strengthen the outcome of green environmental performance.

Figure 3.4: Yafi et al.'s (2021) Model



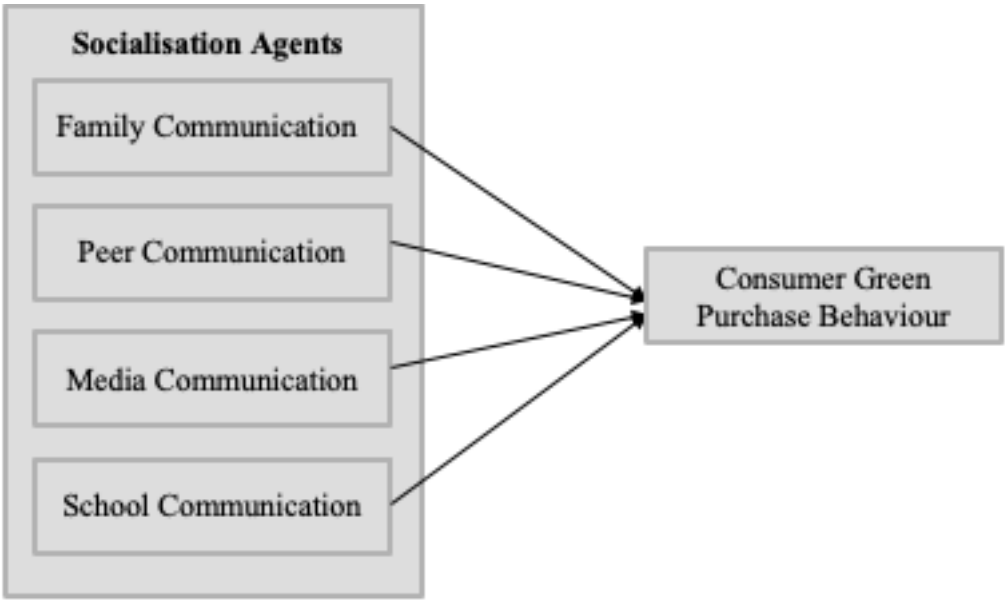
Yafi et al. (2021) tested their model using an online survey administered to Malaysian private and public universities. Thus, the collection of data was a convenience sampling method from which 305 responses were gotten. The analyses were conducted using Smart PLS version 3 and Statistical Package for the Social Sciences (SPSS) version 25. It was uncovered that the relationship between environmental performance and green training was significantly and positively mediated by green competencies and motivations. In terms of direct relationships, Yafi et al. (2021) found that green training positively and significantly impacted all six dimensions of Cabal and Dhar's (2019) green competencies. Green training also directly impacted green environmental performance, which they reported are consistent with the research findings of Kuo et al. (2022). Yafi et al. (2021) advice that universities should provide sufficient green training to promote green competencies, which with green motivation will drive green environmental performances.

3.2.5. Yan and Xu's (2010) Model and the Socialisation Theory

The theory of consumer socialisation is a framework for analysing the influences and sources of people's learning to play the role of consumers in society (Chinchanachokchai & Gregorio,

2020). Guided by the consumer socialization theory, Yan and Xu's model (Figure 3.5) proposes that socialisation agents such as the media, school, peers, and family communications that affect parents' influences will positively influence green purchase behaviours of consumers.

Figure 3.5: Yan and Xu's (2010) Model



To test their model, Yan and Xu (2010) surveyed and collected data from 224 students who were enrolled at a major university in the northeastern United States in a business-related course and the hypotheses were then tested using multiple regression analyses. They found that the participants were influenced by all four studies' socialisation agents. However, family communication made the greatest impact stemming from the fact that parents who frequently communicate the importance of green behaviour, especially in terms of recycling, green cars, energy-efficient bulbs, environmentally friendly clothing and other green products, tend to make strong family influence on green purchases. This means that if a family communicates more often about the advantages of sustainability and green purchases, their children will align themselves with this preferred behaviour. These findings confirm the socialisation theory, especially in understanding students' green purchase behaviours.

A further study which used similar socialisation agents by Ragelinene and Gronhoj (2021) focused on the influence of social media, siblings and peers on consumption and found that specifically, the agents of peers and siblings have a significant impact on the increased intake

of fruits and vegetables, leading to the maintenance of a healthier diet. Social media was perceived to have a potentially unconscious effect; since the respondents couldn't confidently remember reviewing edible product items, although they stated that it would lead them to consume healthier or unhealthier food, depending on what their adverts exposed them most to.

Although these findings continue to confirm the applicability of the socialisation theory in predicting and influencing the behaviour of individuals, especially those situated in both the United States and Lithuania, the theories applicability in the context of green training and South Africa is yet to be tested.

3.3. THEORIES SELECTED TO UNDERPIN THE CURRENT STUDY, HYPOTHESES AND MODEL DEVELOPMENT

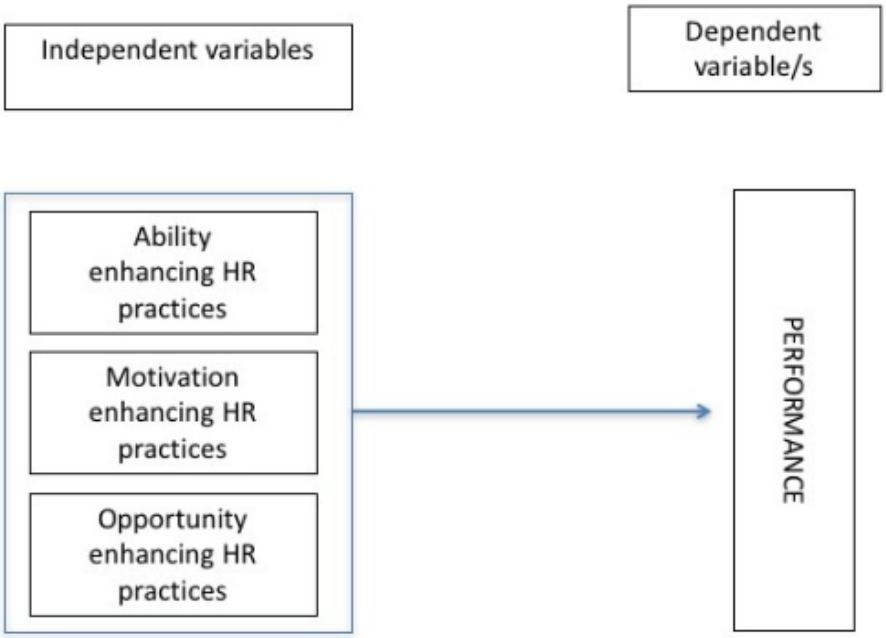
Following the discussions in section 3.2, three theories: Ability–Motivation–Opportunity (AMO), the Natural-Resource-Based-View and socialisation (as applied by Yan & Xu, 2010) theories, and two models: Cabral and Dhar's (2019) and Joshi and Dhar's (2020) models were found useful and selected for the achievement of the objectives of this study. These theories and models also guided the development of the conceptual model and resultant hypotheses of this study. The next sub-section discusses the three selected theories.

3.3.1. ABILITIES MOTIVATION AND OPPORTUNITY THEORY (AMO), NATURAL-RESOURCE-BASED-VIEW (NRBV) AND SOCIALISATION THEORIES

3.3.1.1. Abilities, Motivation and Opportunity Theory

Expressed as AMO = P, the Ability, Motivation and Opportunity theory has been formulated by Applebaum et al. (2000) and implemented within an HRM context as an attempt to explain the multiplex connection between the management of people and how they will perform in the future. The theory postulates that the abilities of employees may be improved through training, their motivation via performance-based compensation, and their opportunity can be enhanced through self-directed team membership. The total effect of these practices may amount to an increase in organisational profitability, team performance, and an improvement of individual productivity (Kellner et al. 2019). The framework of this theory is presented in Figure 3.6

Figure 3.6: Ability, Motivation and Opportunity theory as presented by Kellner et al. (2019, p. 7)



The AMO theory has been used in literature as a tool for organisations to create strategies around human resource training to instill levels of competencies and abilities required to increase overall performance outcomes (Cabral &Dhar, 2019; Gull & Idress, 2022). Applying the AMO, Rizvi and Garg's (2020) model proposes that AMO in terms of employees' developed green abilities, green motivation, and provided green opportunities coupled with green transformational leadership will positively impact environmental performance through the mediating effect of a green culture. Testing their model, Rizvi and Garg (2020) found that organisations can improve their environmental performance by implementing strategies that increase employees' green ability, motivation, opportunities (GAMO) and green transformational leadership (GTFL) with some mediation effect of green culture. Furthermore, Chin et al. (2023) found that AMO is crucial in developing the organisational climate. Enhancing HRM through this theory adds value by shaping and reinforcing employees' ethical standards. It enhances their rarity since they're deeply involved in the organisation's strategies, policies and practices; they become inimitable and are difficult to replace since organisations have different processes of training, development and practice.

Based on the above studies conducted, and further studies such as Yafi et al. (2021), AMOs theory has established a theoretical foundation and practical implementation as an organisational, and more specifically, green human resource management tool to enhance the firm's performance and improve the state of the environment. However, this research paper has uncovered an opportunity to apply this theory from a consumer perspective and develop insight into the effects of training individuals to develop green competencies, influencing them to adopt and apply green practices. Scales have been developed for green competencies, and current research has determined the predictors from an HR perspective in terms of training their employees. This study contributes by testing the scale from a consumer perspective, it also looks at the predictors and the agents that will train consumers in green training.

3.3.1.2. The Natural Resource-Based View (NRBV) Theory

The NRBV developed by Hart (1995) suggests that organisations should incorporate environmentally considerate decision-making into their business operations and manage their resources accordingly as a means to obtain their sustainable objectives, in an attempt to develop stronger competitive capabilities in the market. The NRBV is extended from the Resource-Based-View (RBV) theory which focuses on human resources as a core foundation, rare organizational assets and value derived from human resources and capabilities that maximise profits and sustain competitive advantage. The NRBV extends RBV to connect the organisation and to its natural setting (Cabral & Dhar, 2019).

The NRBV theory has been applied to understand green competencies among employees and managers and in the context of green human resources to reduce harmful environmental impact and sustain the business's competitive advantage and future performance (Cabral & Dhar, 2019 and 2021). Research has also used the NRBV to find green paths to increasing profits through the reduction of pollution levels and an increase in performance and ecological sustainability by incorporating environmental management control systems, which are measurements of sustainability effects, organisational capabilities, and environmental strategies (Rehman et al., 2022).

Research using the NRBV theory has mainly focused on human resources management. Its application to consumer behaviour is lacking, especially in the context of consumers' capabilities and intentions to act in environmentally sustainable ways.

3.3.1.3. The Socialisation Theory

The third theory used in this research paper is the socialisation theory which was constructed by Moschis and Churchill (1978). With this theory, Moschis and Churchill (1978, p. 6010) posit that socialization is "a process whereby adolescence learn attitudes, skills and knowledge that is consumer related, and it is particularly focused on the development of trends related to behaving and thinking which constitutes as consumer behaviour". They demonstrate the socialisation theory in the conceptual framework for consumer socialisation presented in Figure 3.7.

Figure 3.7: The Consumer Socialisation Theory by Moschis and Churchill (1978, p. 600)

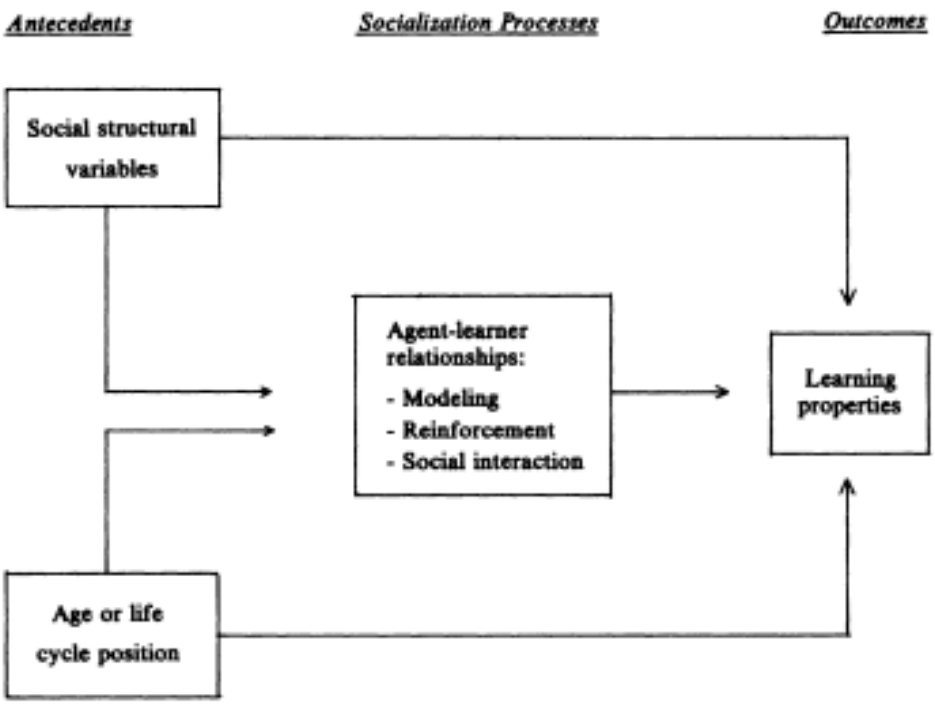


Figure 3.7 shows that the antecedents of the socialisation process are pre-existing structures that comprise sex and class for the social variables, and level of maturity as the age or life cycle position. The socialisation agent-learner relationships are examined, and the agents measured in the process were mass media, parents, school and peers; which leads to the outcome of learning properties that are consumer and purchase behaviours (Moschis &Churchill, 1978; Yan & Xu, 2010). On testing their socialisation theory and resultant model, Moschis and Churchill (1978) found significant relationships between the acquisition of consumer learning properties and the influence of family, mass media and peers, however, school was a weak predictor and showed little impact on influencing consumer-related cognitions.

Alternative results in the study conducted by Rageliene and Gronhoj (2021), related to children's eating habits found that the influence of parents is significant in dictating the availability of healthy foods and setting food choice preferences. Regarding peers, the quantitative results identified a positive influence in instances where the children would eat at locations that had the availability of healthy foods. However, the qualitative findings indicated a negative effect on healthy consumption. Lastly, social media indicated that viewing beverages and snacks that were advertised would affect the children's desire to consume the products. A further study using the socialisation theory was tested in Puerto Rico by Alvarez and Tippins (2019) which intended to understand how the agents influenced their financial decision-making. The study found that parents had the most significant impact on spending behaviour followed by media, school, and peers.

As indicated above, studies have been conducted using socialisation agents to determine different aspects of consumer behaviour. However, there is a gap in the current literature to best understand which agents can be used to drive green training, causing consumers to adopt the required skills to practice sustainability, which this paper seeks to fulfil.

3.3.2. Conceptual Model Development

As aforementioned, the AMO, NRBV, socialisation theories, Cabral and Dhar's (2019) and Joshi and Dhar's (2020) models were used for the development of the conceptual model for this research paper. The AMO and NRBV theories guided the forging of the relationships between green training, creativity and competencies while the socialisation theory suggests that

the four socilisation agents can communicate and provide consumers green training. The resultant conceptual model for this study is presented in Figure 3.8.

Figure 3.8: Conceptual Model of the Current Study

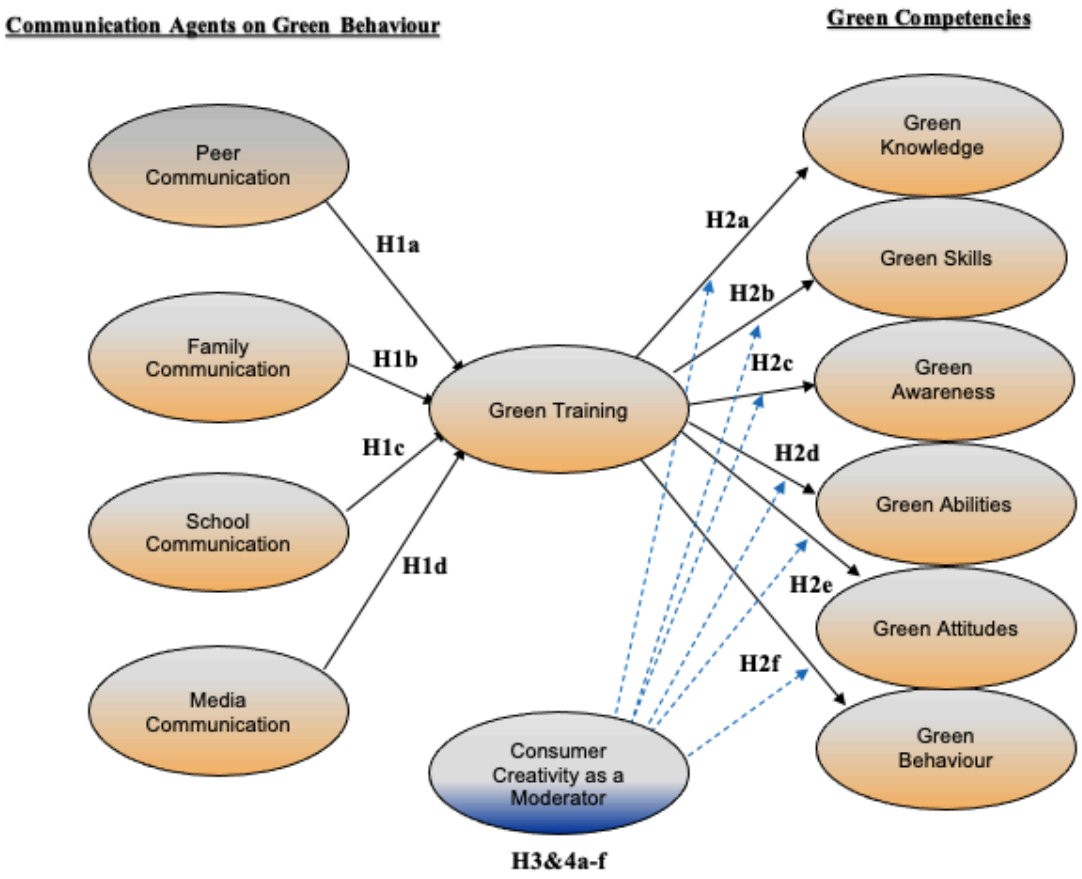


Figure 3.8 proposes that green training generated from socialisation agents of peer, family, school, and media will positively impact Cabral and Dhar's (2019) six green competency dimensions. As suggested by Joshi and Dhar's (2020) model and by Ogbeibu et al.'s (2020) model consumer green creativity will moderate the relationship between green training and competencies. The generated hypotheses are defended with empirical literature in the next sub-section.

3.3.3. HYPOTHESES DEVELOPMENT

Based on the conceptual model in Figure 3.8, the following hypotheses were developed.

3.3.3.1. Relationships between socialisation agents and green training

Socialisation agents such as peers, friends, siblings, and social media have been tested in Lithuania to examine their influence on the healthy food consumption behaviour of children (Rageliene & Gronhoj, 2021). The results revealed that peer influence made a greater impact than siblings on the Children's healthy eating behaviour, especially after social media exposed the food and drinks of interest to the children. The siblings made a strong impact in terms of eating healthy food together with other family members. The impact of socialisation agents on peers, school, media, and family were tested with a sample of 198 Puerto Rican college students. The findings showed that all four socialisation agents influenced the students' financial behaviour and acquisition of spending knowledge (Alvarez & Tippins, 2019).

A study in Indonesia conducted from a sample of 192 students by Garaika et al. (2020) indicates that the socialisation of mass media, family relational patterns, and friends has a significant impact on compulsive buying behaviour. On the contrary, a study targeting the Indian population which gathered 253 respondents, and a segment from China of 255 respondents by Muralidharan and Xue (2016) found that in India, family and peers had a positive influence on consumer buying behaviour, but not media exposure. And in China, only family communication influenced consumer purchasing behaviour. Further studies found that media as a communication agent had no impact on millennials' environmental interests or behaviour within the United States and India (Yan and Xu, 2010; Muralidharan et al., 2016). Regarding the media; television was concluded to have a significant influence on purchasing products within a family, but the internet was found to not have a similar influence. Furthermore, the effect of parents and peers had a positive influence on the buying behaviour of Arab children from a sample of 80 individuals (Ghouse et al., 2020).

In South Africa Matjila et al. (2021) tested the impact of peer influence, personal attitude, advertising and parental influence on youth alcohol consumption behaviour. It was found that personal attitude and advertising had a statistically greater impact, followed by peer and parental influence. This indicates that socialisation agents are a relevant measurement tool to implement in the South African market. Generally, it has been proven that socialisation agents

influence the behaviour of individuals, although the agents that will make the greatest impact need further examination in various cultures and contexts. Particularly, the use of socialisation agents and the impact that they have on green training has yet to be tested empirically. Thus, the following is hypothesised:

Hypotheses 1a-d*: Socialisation agents in terms of (a) peer, (b) family, (c) school and (d) media communications will positively impact green training.*

3.3.3.2. Relationships between green training and competencies

The effect of green training on green competencies has been mainly studied in the field of green human resource management for employees' resource management efficiency, waste reduction, recycling behaviour, energy efficiency and general green performances. For example, green training has been found to directly impact the six aforementioned green competencies dimensions within the Indian market (Cabral & Dhar, 2019; Cabral & Dhar, 2021). The effects of green training were also tested in the Italian healthcare sector among 260 healthcare professionals. It was found that through the training, employee job satisfaction and pro-environmental behaviour increased (Pinzone et al., 2019), which should resultantly increase in green competencies (Yafi et al., 2021).

In the Indian hospitality industry, Cabral and Jabbour (2020) collected data from 303 Indian respondents to examine the relationships between Cabral and Dhar's (2019) 29-item green competency scale and green training. They found that green training significantly and positively impacted green competency. An identical study conducted in the Malaysian private and public sectors between 5 major research universities from a sample of 305 individuals indicated that green competencies can successfully mediate the relationship between green training and green environmental performance. This is indicative of the significant direct relationship between green training and competencies (Yafi et al., 2021). Like Cabral and Jabbour (2020) who examine green competencies unidimensionally, Gull and Idress (2022) used 350 employees at the managerial level in Pakistan and examined the relationship between green competencies and green training. They found a significant and positive relationship. In Poland, Bombiak (2018) denotes the significant importance of using green training in organisations' green and sustainable practices. From these studies, it is therefore clear that the use of green training will lead to the six green competencies, even though they are all in the

context of green HRM. Nevertheless, in a consumer and South African context, the following can be hypothesised.

Hypotheses 2a-f*: Green training will have a positive impact on (a) green knowledge, (b) green skills, (c) green awareness, (d) green abilities, (e) green attitudes, and (f) green behaviour (six dimensions of green competencies).*

3.3.3.3. Relationship between consumer green creativity and green competencies

The study conducted by Yoon et al. (2020) found that the relationship between creativity and knowledge derived a positive relationship, whereby creativity was a significant factor in promoting knowledge creation. Bagheri et al. (2020) studied creativity in terms of individual and team creativity self-efficacy and found that both impact innovative work behaviour in Iran. Ogbeibu et al.'s (2020) in Malaysia also revealed that green team creativity also significantly impacted green product innovation. Before the innovative outcomes happen, Joshi and Dhar (2020) show that there must be a relationship between green creativity and green competencies. Defining green creativity as "Green creativity can be understood as the innovative ideas necessary for the development of environmentally friendly goods, services, and processes" (p. 15), Papademetriou et al. (2023) reports that it is key to green HRM, especially as it develops green competencies. Although these findings are all from the context of green human resources with rare studies in the consumer context, it can be insinuated that consumer green creativity can lead to Cabral and Dhar's six dimensions of green competencies. Thus, the following hypothesis is formulated:

H3a-f*: Consumer creativity will have a positive impact on (a) green knowledge, (b) green skills, (c) green awareness, (d) green abilities, (e) green attitudes, and (f) green behaviour (six dimensions of green competencies).*

3.3.3.4. Consumer creativity as a moderator in the relationship between green training and competencies

Studies have indicated that green training leads to green competencies (Cabral & Dhar, 2019 and 2021) and that the relationship between green training and organisational performance can be mediated by green competencies (Cabral & Jabbour 2020; Yafi et al., 2021)). It has also been found that the relationship between green training and organisational efficiency can be

mediated by green competencies (Gull & Idrees, 2022). Since these studies have a direct and mediating effect on establishing green competencies, the study by Joshi & Dhar (2020) states that the relationship between green training and green creativity can be mediated by green dynamic capabilities or competencies. While Joshi and Dhar's (2020) model shows that green training can lead to both green creativity and competencies, or green dynamic capability as Ogbeibu et al. (2020) terms it, green creativity mediates in the relationship between green training and the competencies (Ogbeibu et al., 2020). Arslan et al. (2021) also show the mediating role of green creativity but in the relationship between environmental consciousness and green energy conservation. Joshi and Dhar (2020) report that the degree to which green training will lead to green innovative practices through competencies depends on the level of creativity. This is indicative of the moderating role of green creativity. While Joshi and Dhar's (2020) model shows that green resource commitment will moderate in the relationship between green competencies and green training, we propose green creativity will moderate in the green training-competencies relationships. Thus, and in the context of consumers yet to be studied, it can be hypothesised:

Hypotheses 4a-f*: Consumer creativity will moderate how green training impacts (a) green knowledge, (b) green skills, (c) green awareness, (d) green abilities, (e) green attitudes, and (f) green behaviour (six dimensions of green competencies).*

3.4. CONCLUSION

This chapter reviewed literature on green training, creativity and green competencies to understand their conceptualization, benefits, predictors and outcomes. Various models and theories were discussed to identify those relevant to this study. It was found that the Abilities Motivation and Opportunity Theory (AMO), Natural-Resource-Based-View (NRBV), and Socialisation Theories were useful and underpinned this study.

Based on these theories, two models and previous literature, a conceptual model was developed that delineated the hypotheses and relationships between the socialisation agents of family, school, peer and media, and green training, the 6 green competencies: attitudes, behaviour, skills, knowledge, abilities and attitudes, and the moderating role of creativity; which serves as

a framework for the study, assists in guiding the research approach and aids in the development of hypotheses to test and explore the relationships, between variables.

Overall, the chapter has forged preparation for the research process, of which the subsequent chapters will delve deeper into discussing the methods of data collection, analyses and empirically testing the conceptual models and hypotheses and presenting the results.

CHAPTER 4: RESEARCH DESIGN AND METHODOLOGY

4.1. INTRODUCTION

This chapter delves into the research design and methods adopted to test the conceptual model and hypotheses developed in chapter 3. There will be a discussion of the overall research approach, which includes the selection between quantitative, qualitative, or mixed methods, and the justification behind a quantitative method selection. Additionally, the chapter discusses the research design, sampling design, data collection methods, and data analysis techniques employed in this study. Furthermore, insights will be provided into the ethical considerations and measures taken to ensure the protection of participants' rights and confidentiality. The limitations and potential biases of the chosen methodology will also be acknowledged and addressed to ensure transparency and credibility. The chapter starts with the research paradigm.

4.2. RESEARCH PARADIGM

Generally, research is the interaction through which the researcher achieves answers to research questions (Khatri, 2020). The term has also been defined according to Ugwu et al., (2021) as something that an individual embraces to figure out concepts in a systematic way. Based on the provided definitions, research is a tool for resolving cultural issues, solving problems, and acquiring information. A research paradigm is understood as philosophical or theoretical grounds for the work of research (Khatri, 2020). It comprises three components: methodology, epistemology, and ontology. The process of selecting components depends on the preference of order of the researcher. Ontological assumptions are defined as the study of the existence or nature of reality, which then links to the epistemological assumptions that are associated with how one comes to know the reality or truth about something, and then proceeds to the methodological assumptions that investigate findings out of a concept with the use of procedures, research approaches, design and methods (Ugwu et al., 2021). Axiology is also a research paradigm component that is involved in undertaking ethical measures that must be considered in the research process (Kharti, 2021).

Saunders et al. (2019) outline five major management research paradigm philosophies that delineate different ways/approaches of carrying out research and observing the world. One of the approaches which is applied in this research paper is the positivism approach. This approach

relies on reason and observation to understand the natural human or social behaviour and provide scientific generalisations and study outcomes (Ugwu et al., 2021). Two other approaches are critical realism and interpretivism. Critical realism focuses on explaining events that are experienced or seen, regarding underlying structures that shape reality. Interpretivism focuses on the difference between humans and physical phenomena since they contribute to creating meaning, and an interpretivist will study the meaning. Postmodernism, which is another approach, emphasises power relations and the role of language, which seeks to question acceptable means of thought and vocalise differing marginalised views. The final approach is pragmatism which asserts that for concepts to be relevant, they need to support action (Saunders et al., 2019).

According to Bianchi (2021), there are two main research approaches: the deductive research approach which uses positivist philosophy to test theories and models and the inductive approach which builds theories. Since the current research will test theories and models, it used a deductive research approach derived from a positivism philosophy. Two of the key methodological choices according to "research onion" are quantitative (positivist paradigm) and qualitative (interpretivist paradigm) designs (Bianchi, 2021). These two designs are discussed in the next section.

4.3. CHOICE BETWEEN QUANTITATIVE AND QUALITATIVE RESEARCH

Quantitative research is one of the methodological choices that Bianchi (2021) identifies from the "research onion". The other two methods are qualitative and a combination of both, which is mixed a method. Kandel (2020) reports that qualitative research is an interpretivist and subjective research approach which makes generates meanings from phenomena by "collecting, analysing and interpreting data through observation of what people do and say" (p. 2). Qualitative data is collected by using methods, such as in-depth interviews and focus groups to make meaning from human, and social problems, and the attitudes of the social world. Questions using qualitative methods are open-ended, results are exploratory and provide deeper insights than what quantitative data provides (Kandel, 2020; Bianchi, 2021). While qualitative methods ask the why question, quantitative methods often ask the relationships between measurable variables (Bianchi, 2021).

Kendel (2020, p. 4) provides the differences between qualitative and quantitative research methods as presented in Table 4.1.

Table 4.1: Distinction Between Qualitative and Quantitative Research (Kandel, 2020, p. 4)

Qualitative	Quantitative
Observations are uncontrolled and naturalistic.	Observations are obstructive and controlled.
The nature is subjective, as what is found can be influenced depending on the interest and attitude of the researcher.	The nature is objective since it is impossible for the researcher to influence the results.
Generally conducted through the use of a smaller population group.	Conducted with a larger sample size.
The focus is ascribed to behaviour, natural setting and words.	The focus is aimed at a controlled setting that has meaning and numbers.
Meaning and process orientated.	Result and product orientated.
Emphasises implication, interpretation, meaning and causes.	Emphasises the description of events, mathematical analysis, measurements and statistics, and quantitative scores.
Holistic and flexible.	Specific and rigid.
It is inductive (described as a circumstance that leads to something else) and orientated towards discovery.	It is deductive (aims to prove a scenario by deriving reason and conclusions) and orientated towards verification.
Investigation proceeds by separating subjects or speculations from proof and putting together information to introduce a reasonable and predictable picture.	Using tables, statistics, charts, and analysis, the process indicates how the variables relate to the hypotheses.
Examples: Heuristic, phenomenological, and philosophical studies.	**Examples:** Co-relational studies, experimental, and surveys.

Kendel (2020, p. 2) defines quantitative research as “the attempt to explain phenomena through numerical data collection, which is mathematically analysed, objective, controlled, product orientated and obstructive that is aimed at quantifying different conditions or issues”. Quantitative research uses systematic ways, mathematic models, and statistical analyses to test relationships, models, hypotheses, and theories. Considering that the current research seeks to test relationships, theories and models with relationships and hypotheses, it uses quantitative methods.

4.4. RESEARCH DESIGN

The overall plan or strategy researchers develop to address their research questions or goals is called the research design. It includes coming to conclusions about different parts of the research interaction, including the sort of study to be conducted, data collection methods, sample selection, and data analysis techniques. Research design gives a structure to coordinating and directing examination efficiently and systematically.

Jansen (2023) outlines the most common research design types selected when conducting a qualitative or quantitative study. For a qualitative study, a researcher can utilise a phenomenological, grounded theory, ethnographic or case study design. Since this study is using quantitative methods, this section discusses quantitative designs delineated by Jansen (2023). They are descriptive, experimental, correlational, and quasi-experimental. The author further provides an explanation of each: descriptive research design is the systematic gathering of information that describes the current conditions of existence, characteristics, or behaviours without the manipulation of any variables as is done with an experimental design. An experimental research design is utilised to decide whether a causal relationship exists between at least two factors. As the researcher, some of the variables are controlled (independent variables) while influencing one variable (dependent variable). Doing so permits a notice of the impact of the effect between the relationships which allows the researcher to make determinations about possible causality. Correlation design is adapted by a researcher that seeks to find and measure the relationship and distinct similarities between variables without manipulation. Lastly, a quasi-experimental design is used when the purpose of the experiment involves recognising causal relationships, however, one can't (or doesn't have any desire to) arbitrarily relegate members to various groups (for common sense or moral reasons), the

researcher therefore, depends on existing groups or prior conditions to frame samples for comparison.

4.5. SAMPLING DESIGN

The sampling design refers to the systematic plan or strategy employed to select a representative subset, or sample, from a larger target population. It involves careful consideration of various factors such as the target population, sample frame, sample size, sampling method, ethical considerations during data collection, and study limitations. The sampling design starts with describing the target population as provided in the next subsection.

4.5.1. TARGET POPULATION

Casteel and Bridier (2021) identify a target population as a conceptually bounded and specific group of participants that can potentially be used, which a researcher could access and that exemplifies the characteristics of the population of interest. To find actual success in characterising the target population, all of the limited contemplations should be considered iteratively to ensure that the end depiction of the selected group is adequately comprehensive to support and provide sufficient information to the reader. Once the general population has been established, a researcher should select specific criteria to determine the target population required (Asiamah et al., 2017).

To gather data which provided the most relevant results to this study, the target population consisted of South Africans between the ages of 18-55+, who have had previous exposure to some form of green training, either by personal experience, through school, media, peers and family. Kemp (2023) estimates that there are approximately 60.14 million individuals that make up the South African population and according to Statista (2022), an estimated 43 million are between the ages of 18-55+. To capture this age group and those with some green training exposure, a screening question was added to the questionnaire. It required only individuals who have been exposed to some form of green training to participate, which involves knowledge, exposure or training around the efficient use of resources such as water and electricity, waste (e.g., plastic bags) reduction, energy and electricity conservation, and environmental protection.

4.5.2. Sample Frame

The group of units from which the sample is recruited is known as the sample frame, and it is an operationalised representation of the target population. It is the exact gathering of units - frequently people - that will be requested for their support in the review (Casteel & Bridier, 2021). Kölln et al., (2019) identify four sample frame designs which researchers follow that consist of telephone-based sampling, which is a list containing an individual's telephone numbers, person-based sampling which requires the names of people, address-based sampling which seeks the addresses of people, and area-based sampling which focuses on the geographic location of the sample. Considering the sample comprises South Africans, the sampling frame design for this study is are-based sampling, and more specifically will require respondents to be between the ages of 18-55+, both male and female from all racial population groups which have completed a diploma or matric, undergraduate and/or post-graduate qualification. The individuals will also be exposed to the screening question to ensure that they have some knowledge, exposure or experience in green training.

4.5.3. Sample Size

Kaur (2021, p. 48365) refers to sample size as the mathematical estimate of how many subjects or units will be included in a study, or it is deemed as a process of selection in the number of replicates or observers to be included as part of a statistical sample. The author states that a reasonable sample size must be captured to allow an appropriate level of analysis, increase the accuracy of results, and allow validity for the significance of the test. If a sample size is too small it can risk successfully answering the research questions, it can fail in the detection of important associations or effects, and it may associate it imprecisely. If it is too large it can make the study more costly and difficult, impact time constraints, decrease the accuracy or limit the availability of participants.

Althubaiti (2022) recommends avoiding unrealistically large samples when collecting data, but opting for a medium to large scale and not deciding to select a sample based on minimum effect for practical significance to provide more useful insights. Although PLS-SEM considers varied ranges of sample sizes including smaller sample sizes compared to covariance-based SEM (CB-SEM), there are some recommendations on deciding on sample sizes. One of the key recommendations is the type of data analysis to be used. For example, for CB-SEM, a 5:1

respondents-to-items/indicators is recommended (Legate et al., 2023). Thus, if CB-SEM were to be used to analyse the data for this study, its 49 items would require 5x49 items = 245 respondents. However, PLS-SEM, according to Legate et al. (2023) is robust, solves many limitations of CB-SEM, better analyses complex models, and uses "an algorithm that iterates between the measurement model and structural model estimations to minimise the residuals and optimise variance explained" (p. 95) will be used for this study. With these qualities, Legate et al. (2023) recommend that sample size determination should consider the inverse square root approach. With this approach, the significance levels and path coefficients that render relationships significant are considered. According to Legate et al. (2023) recommendation, a significance level of 1% (or 99% confidence level), 5% (95% confidence level), and 10% (90% confidence level) for a path coefficient between 0.11 and 0.20 results should have minimum sample sizes of 251, 155, and 113 observations respectively. Thus, with a sample size of above 251, a regression coefficient of 0.11 and 0.2 can produce significant relationships. For this reason, the selected sample size for this study was 300 respondents.

4.5.4. Sampling Method

The sample used for data collection is extracted from the sample frame with one of two methods: probability (random) sampling or non-probability (non-random) sampling. With probability sampling every single unit that is used comprises a known probability or chance of being selected; whereas with non-probability sampling a unit is chosen or withdrawn without having a specific probability (Althubaiti, 2023).

Several methods can be selected from the two sampling techniques mentioned above. Regarding probability sampling Casteel and Bridier (2021) outline several methods that are simple random sampling; which is the simple process associated with the selection of individuals by drawing their information from a hat. Systematic sampling: which selects sample members from a large population according to a randomized starting point but with a fixed, periodic interval. Satisfied sampling: this is a process of dividing the total population into smaller groups. And cluster sampling, which divides a population into clusters which are often geographically bound locations, and then randomising the selection of samples from these groups.

Non-probability sampling can generally be obtained faster and for a lower financial input compared to probability methods (Rahman, 2022). For this reason, this research process will utilise convenience and purposive sampling approaches. Convenience sampling is preferred by researchers for survey research considering that it is straightforward and fast to gather findings (Rahman, 2022). It consists of choosing participants based on their vicinity to the researcher and selecting individuals from an ideal sampling frame (Casteel & Bridier, 2021). Purposive sampling is used by researchers when the aim is to locate respondents with specific traits, characteristics or qualities (Rahman, 2022). Since the questionnaire consists of a screening question that requires individuals to have had some form of experience, or exposure to green training this technique has also been adopted. The remaining methods of non-probability sampling which a researcher can select from according to Casteel and Bridier (2021) are volunteer sampling: which is based on a participant's self-involvement to participate in the research and provides data and snowball sampling: which refers to the process of existing participants providing referrals for potential individuals to be involved based on specified traits.

4.5.5. Ethical Consideration Before Data Collection

Ethical considerations are paramount when collecting data, especially involving human subjects, to gather information from human participants for research without ethical approval would mean that the researcher is not in line with the institution's Staff Code of Conduct (Fleming & Zegwaard, 2018). Permission has been granted to collect data for this research process from the University of the Witwatersrand. Researchers are expected to obtain an ethical clearance certificate from the University Ethics Committee which grants consent to gather data from participants and can be viewed in the appendix at the end of this research paper. The ethics approval was granted with ethics number H23/06/37. The ethics clearance obligate the researchers to ensure that the rights, privacy, and well-being of participants are protected throughout the data collection process. Bhandari (2023) identifies several ethical issues that a researcher must consider when conducting research that must be followed by researchers: participants' information is kept anonymous and hidden, and no personally identifiable information is gathered, they are aware of the purpose and risks involved (if any) when completing the questionnaire, the participants are free to opt-out at any point during the research collection process if they feel the need to, and the work conducted in this research paper is per the plagiarism guidelines enforced by the university.

Ethics are essential to maintain trust between researchers and participants, protect participant welfare, and ensure the integrity and credibility of the research findings. Adhering to ethical principles is a fundamental responsibility for all researchers conducting data collection involving human subjects.

4.6. DATA COLLECTION AND ANALYSIS

After obtaining ethics clearance, the data had to be collected. As mentioned by Kabir (2016), to answer stated research questions, test constructed hypotheses, and evaluate outcomes; data needs to be collected. Data collection is the "systematic process to gather and measure information on variables of interest" (Kabir, 2016, p. 202). Essentially, there are two types of data, which are primary and secondary. Primary data has been collected first-hand by the researcher and it is considered newly sourced; while secondary data is the accumulation of pre-existing data that is readily available for the researcher to use. This study collected both secondary and primary data. Secondary data was collected from academic journals, a few books, previous dissertations, and online sources. Google Scholar provided a rich source of academic secondary information. Primary data was collected using online surveys.

A questionnaire was used for the primary data collection. The questionnaire can be administered in various ways, including face-to-face, online, and telephonically. Each of these methods has its advantages and disadvantages. For example, a face-to-face questionnaire administration has the advantage of being able to adapt to the conversation by detecting distress and responding appropriately, providing a more structured interview, developing rapport and providing more authentic responses, and the disadvantages are in the maintenance of sufficient participants, finding a location with limited disruptions, and being time-consuming (Lobe et al., 2022). An online questionnaire administration has the advantage of being cost-effective, and convenient and the possibility of accessing a larger sample of respondents, easier access to participants, and the collected data are easier to process and analyse (Saleh & Bista, 2017). Moreover, the respondents who have had exposure to green training are a widely scattered group of individuals that are heterogeneous and will be costly to get access to them through face-to-face questionnaires or telephonically. However, an online questionnaire has some disadvantages, two of which are poor response rate and the difficulty of getting the desired

sample frame. For this study, a screening question was used to exclude potential respondents who have not been exposed to some sort of green training. Considering the advantage of an online questionnaire, it was the chosen method of data collection for this study. This study's questionnaire was structured based on the variables in the conceptual model and was created using online Google Forms.

The link to the questionnaire was posted and shared on social media spaces, such as LinkedIn, Facebook, Instagram, WhatsApp groups of young adults and adults, and to students' email addresses. The questionnaire link was shared only after ethics clearance was obtained. Access to the University of the Witwatersrand students (i.e., those of the Faculty of Commerce, Law and Management) was used by obtaining the Registrar's Research Permission Letter and compiling a structured email, containing the formalities of the research information and questionnaire procedure, to the Office Administrator which was then shared to approximately 39 823 students. Once sufficient data was collected from the respondents, the data was extracted directly from Google Forms into an Excel spreadsheet that was then imported into SmartPls for data cleaning and analyses. Two steps were followed to conduct the data analyses: the measurement model and the structural model.

4.7. MEASUREMENT INSTRUMENTS

Designing a measurement instrument for data collection involves careful planning and attention to various factors to ensure the instrument is effective in gathering the required information. A well-structured and effective instrument selection and design will influence the reliability and quality of data collected which determines the value of insights gathered from the study.

The measurement instrument used for this study was obtained from previous studies. The socialisation agents (peer, family, school, and media communications) were measured using a 4-item scale adapted from Yan and Xu (2010). Green training was measured using a 4-item scale adapted from Gull and Idress (2022). Consumer creativity featured a 4-item scale adapted from Dangelico, Nonino and Pompei (2021). Green competencies were measured from scales adapted from Cabral and Dhar (2019) and De Silva, Wang, and Kuah (2021). The six-dimension green competencies scale had five dimensions (green awareness, green knowledge, green skills, green abilities, and green behaviour) measured using a 4-items scale and one

dimension (green attitude) measured using a 5-items scale. Similar, to multiple studies conducted, such as Yue et al. (2020), Yafi et al. (2021) and Essiz and Mandrik (2021), a 5-point Likert-type scale ranging from (1) Strongly Disagree, (2) Disagree, (3) Neutral, (4) Agree, and (5) Strongly Agree were used.

The first section of the questionnaire had the demographic information of the respondents including their age, level of study, population group, financial status, and a screening question to assess whether they have been exposed to green training. The second section had the socialisation agents, green training, the six green competencies dimensions and consumer creativity constructs.

4.8. DATA ANALYSIS APPROACH

Data analysis consists of a process that converts the data that has been gathered into meaningful and understandable information (Taherdoost, 2020). The employment of comprehensive analysis is necessary to interpret and examine the data collected in pursuit of the research objectives. Through the application of rigorous quantitative methods, the aim is to gain deeper insight into the presented research questions and provide a nuanced understanding of the phenomena under investigation (Taherdoost, 2020). The data captured on an Excel spreadsheet was first analysed to obtain the descriptive statistics of the constructs' mean and demographic characteristics after coding, cleansing, and inputting the data into the SPSS.

The main data analysis method was structural equation modelling (SEM) because of the multivariate nature of the study. Legate et al. (2023, p. 91) define SEM as "a family of related statistical methods and procedures that combine elements of regression and correlation analyses in a way that enables researchers to simultaneously analyse relationships among variables". Two SEM approaches are used to model and test relationships between variables and constructs. They are the CB-SEM and PLS-SEM. While both approaches test hypothesised relationships, CB-SEM better estimates how much the theoretical model fits the sample data in terms of model fit. However, the PLS-SEM has merits such as its robustness for complex model, flexibility, applicability for various sample sizes, better prediction ability, and most of all, its ability to automatically test mediation and moderation (Legate et al., 2023). Considering

these qualities, PLS-SEM is becoming increasingly popular in business research and was thus the preferred SEM approach used for this study.

The PLS-SEM was conducted in two steps: the measurement model after thorough data coding and cleansing and the structural model. The measurement model conducts confirmatory factor analyses to measure constructs' reliability, validity, and model fit. The structural model tests the relationships between constructs, including mediation and moderation effects (Hair et al., 2019).

4.8.1. Data Coding and Cleansing

Linneberg and Korsgaard (2019) describe coding as an operation that identifies segments of meaning in data and involves labelling them with a specific code. Furthermore, Taherdoost (2020) defines coding in research as a process of converting the data into numerical values, which utilises a document that comprises information on the responses, an explanation of variables, the format of the variables, and measures. Relating to this study, the document is an Excel spreadsheet which is a numerical form that predominantly focuses on the coding scheme of a 5-point Likert-type scale. The reading of the spreadsheet begins with the first column which indicates numerical values in ascending order that shows the number of respondents. The sheet then flows towards the questions proposed in Section A that consist mainly of demographic information that expands from columns A1 – F1 and describes the age category, gender, level of study, population group, financial status, and the screening question to confirm their experience or knowledge of green training. The remaining columns, which total 54 (including the previously mentioned columns), reflect the 12 variables that appear in the conceptual model and measure each scale between 1 – Strongly Disagree to 5 – Strongly Agree. For example, the data captured under each title for Peer communication will be represented as PC1, PC2, PC3, and PC4, will appear in columns J1 – M1, and the range of numerical values will depend on how strongly each respondent feels about the question presented.

The data cleansing phase consists of the process of identifying and rectifying information that is inconsistent, irrelevant, inaccurate, incomplete, corrupt or duplicated, and helps to maintain data quality, accuracy and reliability (Joshi, 2023). Considering that the results can be directly exported from Google Sheets into Excel, this relieves the influence of human error corrupting

the data accidentally and exposes the researcher to the only possible dilemma of needing to eliminate rows which have incomplete answers. This will ensure that the data is valid, accurate, complete, and consistent.

4.8.2. Descriptive Analysis Using SPSS Statistics

In the article published by Green et al. (2023), they refer to the purpose of descriptive statistics as a means of summarising numerical and categorical data that is informative and depicted both graphically and numerically. It is the foundation of a quantitative study and the predecessor of inferential statistics that applies certain properties in a set of data which makes predictions and inference that stems beyond the data. The authors make further reference to several commonly used methods to describe numerical data that will be calculated in this research paper and consist of the mean, median and standard deviation. In choosing the measures of centre, the median and mean are considered to extract information about the data. The median is informative in providing a central tendency in a distribution of data, while the mean is an arithmetic average, that can be calculated through the addition of all values and dividing them by the total number of values. While the standard deviation measures the variability of spread and indicates a distance of observation from the mean. It can be calculated using the following formula:

$$s = \sqrt{\frac{\sum_{i=1}^{n} (x_i - \overline{x})^2}{n-1}}$$

Graphically, the demographic information from the respondents will be presented in the form of pie charts. Separate charts are conferred which show the frequency of occurrence in the percentage of participants based on the selected age category (18-24, 25-34, 35-44, 45-54, 55+), gender (male, female, other), level of study (matric and diploma graduate, undergraduate, postgraduate), population group (white, black, coloured, Indian, other), financial status (very well-off, somewhat well-off, not so well-off, not well-off at all), and whether the participants have been exposed to, have knowledge of, or been trained with any green training practices (yes, no).

4.8.3. Measurement Model Through Confirmatory Factor Analysis

Hair et al. (2020, p. 102) define confirmatory factor analysis (CFA) as "a statistical process that is associated with the examination of item reliability, reliability of constructs, measurement of goodness of fit, and quantitative measurements of discriminant and convergent validity". The name was developed since the constructs had been based on common variances and were referred to as factors, and the process allowed researchers to evaluate multi-item constructs. When CFA is applied, it creates a meaningful theory involving the relationships between variables and how they relate to the theoretical concepts. What this depicts is that a researcher will test the hypotheses, which have been proposed that a theoretical relationship exists between the variables and their underlying latent constructs, and the objective is to confirm the measurement properties between a set of variables for measuring a particular and operationally defined latent construct.

4.8.3.1. Reliability tests of measurement scales

Reliability is present when a researcher conducts a study that has previously been completed and the data gathered yields the same results, this can therefore be understood as the replication or repeatability of research findings that show consistent outcomes (Edwin, 2019). A measurement reading that shows high reliability does not always ensure that it is accurate, however, it does provide a reason for making inferences about changes and when instrument readings are not reliable, it makes it difficult for the researcher to distinguish genuine changes in readings between measurements (Taber, 2018). To check the reliability of the scale items, a researcher can use Cronbach's alpha and composite reliability.

Cronbach's Alpha

It has commonly been reported that Cronbach's alpha assists in the development of scales that intend to measure attitudes and several other affective constructs, and it is used as an indicator to evaluate instrument quality (Taber, 2018). It describes how reliable a sum (or an average) of measurements q is, where q measurements can be represented as alternative forms, occasions, raters, or test items/questionnaires. The most common circumstance is the measurement representation of multiple test items/questionnaires and it is then specified as a measure of

"internal consistency" (Bonett & Wright, 2014). The coefficient range is presented on a scale between 0 – 1 and is generally acceptable at a value above 0.7. Below Table 4 presents the coefficient and reliability ranges of Cronbach's alpha that is between 0-1 and defines their level of acceptability in reliability:

Table 4.2: Reliability Range and Coefficient of Cronbach's alpha (Arof et al., 2018)

Cronbach's Alpha Coefficient	Reliability Level
More than 0.90	Excellent
0.80 – 0.89	Good
0.70 – 0.79	Acceptable
0.60 – 0.69	Questionable
0.50 – 0.59	Poor
Less than 0.50	Unacceptable

Composite Reliability

Composite reliability is also used to measure internal consistency in scale items and the values range between 0 and 1. Tentama and Anindita (2020) recommend the reliability coefficient to have a value greater than 0.70. A value that is ≥ 0.7 is necessary to obtain construct reliability. According to Haji-Othman and Yusuff (2022) the composite reliability formula is as follows:

$$\rho_c = \frac{\left(\sum_{i=1}^{n} L_i\right)^2}{\left(\sum_{i=1}^{n} L_i\right)^2 + \left(\sum_{i=1}^{n} var\,(e_i)\right)^2}$$

Li = standardised outer loading of item i of a construct.

ei = measurement error of item i.

var(ei) = variance of measurement error that is defined as $(1 - Li^2)$.

4.8.3.2. Validity tests of measurement scales

Validity is the extent of an instrument measuring what it is intended to measure (Edwin, 2019), or the accuracy in the outcome and interpretation of specific results when conducting a test (Karakaya-Ozyer, 2018), On measuring validity, discriminant and convergent analysis needs to be validated (Fauzi, 2022).

Convergent Validity

The way different variables correlate with alternative items of the same construct is how convergent validity is defined (Haji-Othman & Yusuff, 2022; Jain & Chetty, 2021). It refers to how closely related the measures/items are to the construct that they intend to measure or how they converge with that construct (Edwin, 2019). To establish convergent validity, average variance extracted (AVE) and factor loadings are used. The definition of AVE according to Haji-Othman and Yusuff (2022) is the squared loadings mean value of an item that is associated with a particular construct. It is used as a measurement of the sum of the squared loadings which is divided by the number of constructs and has a minimum acceptable value of 0.50 (Hair et al., 2019). The individual item reliability check is reviewed by the standardised factor loadings (outer loadings), which is the description of the correlation between the measurement item and construct and are acceptable at > 0.5. This therefore means that a factor value that is < 0.5 will need to be removed from the model (Purwanto & Sudargini, 2021). However, for attitudes and consumer behaviour studies, a factor loading and AVE of 0.4 can be acceptable. The AVE can be understood by the following formula:

$$AVE = \frac{\sum_{i=1}^{n} Li^2}{n}$$

Li = standardised factor loading.

i = number of items.

Discriminant Validity

While items need to converge or correlate to form a construct in the case of convergent validity, for discriminant validity, each construct has to be different from other constructs (Edwin, 2019). This can be obtained through a demonstration which exposes the indicators of a construct being dissimilar. It can exist when the measurements of various variables are significant and only have a slight correlation, or when they do not correlate at all (Engellant et al., 2016). The Heterotrait-Monotrait Ratio of Correlations (HTMT) and Fornell-Larcker criterion are used to test discriminant validity (Fehan & Aigbogun, 2021).

4.8.4. Structural Model or Path Modelling

Path modelling in PLS is understood as a Structural Equation Modelling methodology that consists of composite and factor models that are used to test estimate recursive and non-recursive structural models, construct measurements, and assessments of model fit (Henseler et al., 2016). It comprises multiple regression models that are simultaneously estimated, which can be moderation, mediation, or interactional relationships amongst the tested variables (Dash, 2021).

Involved in this process is the evaluation of the structural model to identify the relationship significance between the variables, which can be seen through path coefficients that indicate the strength of relationship between constructs (Purwanto & Sudargini, 2021). Additionally, *p*-values are assessed to determine whether hypotheses are significant either at typically $p < 0.05$ (95% confidence level), or $p < 0.01$ (99% confidence level or $p < 0.09$ (90%) confidence level, especially when sample sizes are low (Hair et al., 2019). The following table outlines the levels of significance of the *p*-value:

Table 4.3: P-values and Levels of Significance (Schmidt & Osebold, 2017 and Legate et al., 2023)

Level of Significance	Specification
$p > 0.05$	Not significant
$p \leq 0.05$ (95% confidence level)	Significant
$p \leq 0.01$ (99% confidence level)	Very significant
$p \leq 0.001$ (99% confidence level)	Highly Significant
$p \leq 0.09$ (90% confidence level)	Weakly significant

4.8.4.1. Model Fit

An assessment of fit for a proposed model in SEM is of preeminent importance for a researcher since it is a process of establishing support for the connecting relationships between the examined variables. Selecting the relevant test statistics is dependent on factors associated with the distributional characteristics of the study's sample data, the proposed model features, and the magnitude of sample size (Marcoulides et al., 2019).

When analysing data with PLS-SEM model fit is assessed with Chi-squared (χ^2), Standardised Root Mean Square Residual (SRMR), Normative Fit Index (NFI), R-squared (R^2), Q-squared (Q^2) and the Variance Inflation Factor (VIF). The index, and level of acceptance can be observed in Table 4.4 below, and an explanation of each index will follow.

Table 4.4: Model Type, Index, and Acceptance Level Value (Baki, 2017; Dash & Paul, 2021; James et al., 2021; Manfrin et al., 2019; Ozili, 2022)

Index	Ideal Threshold
Chi-squared (χ^2)	p-value > 0.05
Standardised Root Mean Square Residual (SRMR)	$0 \leq SRMR \leq 0.10$
Normative Fit Index (NFI)	> 0.90

R-squared (R^2)	$0.10 < R^2 < 0.99$
Q-squared (Q^2)	> 0
Variance Inflation Factor (VIF)	$VIF \leq 5$

Chi-squared (χ^2)

Dash and Paul (2021) state that to assess the overall model fit, the chi-square value is examined. The purpose is to evaluate the disparity between the sample and matrices of covariance that have been fit in the model, and it will generally be considered as badness of fit measure. Essentially it is used to determine whether there will be a significant association between two tested variables. The below formula to calculate Chi-squared was extracted from the article published by Suresh (2023).

$$\chi^2 = \sum_i \frac{(O_i - E_i)^2}{E_i}$$

Standardised Root Mean Square Residual (SRMR)

The SRMR is utilised for the transformation of the predicted covariance matrix and the sample covariance matrix into correlation matrices (Ringle et al., 2022). It provides a statistical test of close fit and an alternative to RMSEA as its value can be substantively interpreted (Shi et al., 2018). Baki (2017) reported a perfect fit to be: $0 \leq SRMR \leq 0.05$, and an Acceptable fit as $0.05 \leq SRMR \leq 0.10$. The formula stated by Asparouhov and Muthen (2018) can be observed below:

$$SRMR = \sqrt{\frac{S}{p(p+1)/2+p}},$$

Normative Fit Index (NFI)

Similarly referred to as the Bentler-bonnett normed fit index, the NFI is used to analyse the disparity between the values of chi-squared from the proposed and the null model (Costa & Sarmento, 2019). The meaning of the null model is that all of the measured variables are uncorrelated which is seen as the worst-case scenario (Dash & Paul, 2021). The formula can be seen below, extracted from the paper submitted by Costa and Sarmento, (2019).

$$NFI = 1 - \frac{X^2\ (proposed\ model)}{X^2\ (null\ model)}$$

R-squared (R^2)

Gelman et al. (2018) state that R^2 is a well-known statistical measure for linear regression and generalised linear models to establish model fit. Furthermore, it can be used to establish variability between variables, so if the R^2 value from the model is 0.50, then half of the observed variation is explained by the model's inputs. It has been established by Ozili (2022) that an R^2 between 0.10 – 0.50 is acceptable when some or the majority of the explanatory variables are statistically significant, and is similar for values between 0.51 – 0.99. The formula according to Gelman et al. (2018) can be observed below:

$$R^2 = \frac{V_{n=1}^{N}\,\hat{y}_n}{V_{n=1}^{N}\,y_n},$$

Karch (2023) affirms that the R-squared quantifies the proportion of variance of the dependent variable, and is known to overestimate the quantity of variance in the population that is arguably more relevant; while estimating the amount of variance explained in the population, the R-squared adjusted can be reviewed.

Q - squared

The statistical measure of Q-squared is used to examine the predictive relevance of the exogenous latent variables on the reflective endogenous latent variable (Silva et al., 2023). A meaningful predictive relevance value should be > 0 (Manfrin et al., 2019)

4.8.3. Collinearity Statistics

Variance Inflation Factor (VIF)

According to Daoud (2017) when there is a correlation between the predictions, the coefficients of the standard error of predictors increase, which influences the variance of the predictor's coefficients to enlarge. In order to calculate this inflation in variance, the VIF can be used. To detect collinearity in a multivariable model, the recommended threshold should be ≤ 5 (James, 2021). The formula according to Daoud (2017) to calculate the VIF can be used below:

$$VIF = \frac{1}{1 - R_i^2}$$

4.9. STUDY LIMITATIONS

Limitations for any specific study concern potential shortcomings that are typically beyond the researcher's control and can be portrayed as an "imposed" restriction. Potential study limitations can consist of assumptions related to the underlying theories, measurement errors, population or selected sample, causal relationships between variables, interpretation of results,

data collection and analysis, and the corresponding formulated conclusions (Theofanidis & Fountouki, 2019).

In the study conducted by Queiros et al. (2017), they reveal certain disadvantages when conducting a quantitative study and using questionnaires as a collection process technique, which relates to this paper: the data collected from respondents is as reliable as the quality of answers provided by the individuals and is dependent on their lack of bias, honesty and full disclosure when answering the questionnaire, the rigidity and structure of the questionnaires can influence the accuracy of results and the questions are formulated subjectively based on the researcher's knowledge and comprises of close-ended questions that give respondents no opportunity for explanation, and the nature of questionnaire results in a limited depth of answers since it does not capture the behaviour and changes in the emotion of respondents when answering questions.

Part of the research process is identifying limitations and applying careful study design, statistical techniques, transparent and accurate reporting, and acknowledging potential shortcomings which ensures that the research can focus on minimising the reduction in quality, credibility and applicability of their quantitative research findings.

4.10. CONCLUSION

This chapter delved into the essential components of conducting a research study within a specified research paradigm. Quantitative research was highlighted as the chosen approach, which emphasises the process of collecting, analysing and interpreting the use of numerical data for analysis. The research design, sampling design, and measurement instrument design were carefully crafted to ensure the study's validity and reliability. The chapter also discussed the data collection and analysis procedures, accentuating the systematic and meticulous approach taken. Finally, the chosen data analysis approach was identified, which will play a crucial role in extracting meaningful insights from the gathered data. By addressing these key elements, this research endeavours to contribute significantly to the existing body of knowledge within the field of green consumer behaviour and aims to shed light on the phenomena under investigation.

CHAPTER 5: DATA ANALYSIS AND RESULTS PRESENTATION

5.1. INTRODUCTION

This chapter presents the results from testing the conceptual model and hypotheses developed in Chapter 3. The data used to test the model was collected digitally through an online questionnaire from 425 respondents residing in South Africa. The chapter starts with results produced from descriptive statistics through the SPSS Statistics software. It then presents the PLS-SEM results obtained from SmartPls. The PLS-SEM analyses were done in two phases: 1) the measurement model, which tests reliability and performs confirmatory factor analysis (CFA) to test the validity of constructs and model fit. 2) the structural model that tests the relationships between constructs. The constructs were 4 measures of socialisation agents which are communications from peers (PC), family (FC), school (SC) and media (MC); the mediating variable of green training (GT); and Cabral and Dhar's (2019) six green competencies dimensions: green knowledge (GK), skills (GS), awareness (GW), abilities (GA), attitudes (GD) and behaviour (GB); and the moderating role of consumer creativity (CC).

5.2. DESCRIPTIVE STATISTICS

5.2.1. DEMOGRAPHICS

5.2.1.1. Age Group

Figure 5.1: Response Statistics about the Age Category

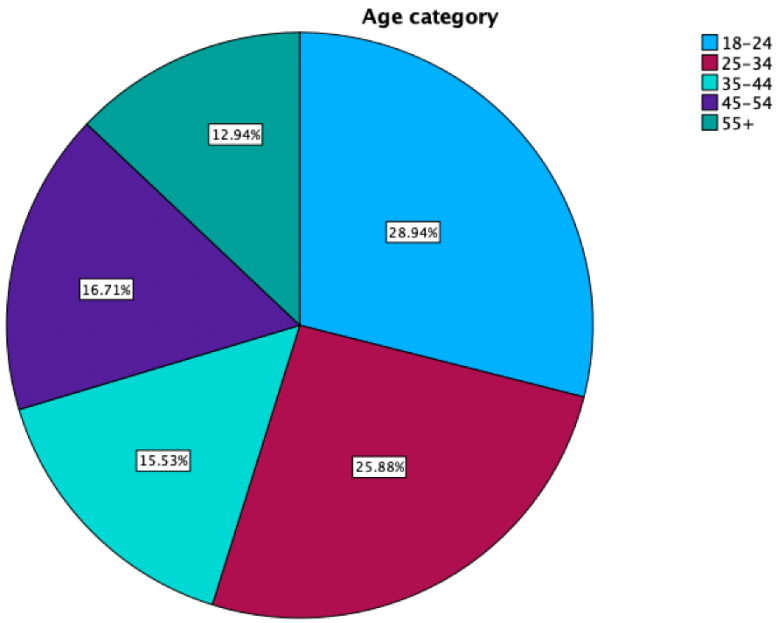


Table 5.1: Age Category Data Results

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-24	123	28.9	28.9	28.9
	25-34	110	25.9	25.9	54.8
	35-44	66	15.5	15.5	70.4
	45-54	71	16.7	16.7	87.1
	55+	55	12.9	12.9	100.0
	Total	425	100.0	100.0	

The data shows that the survey had a diverse distribution of participants across various age ranges. The largest groups (54.8%) are the 18-24 and 25-34 age categories. The 18-34 age group are viewed by Duh, Yu and Ni (2021) as comprising young adult college/university students (18–24 years old) and young adult professionals (25–34 years old), who according to Nguyen, Lobo and Nguyen (2018) are environmentally conscious and an attractive market for green products. Thus, it will be good to assess how much they have green training and competencies. Close to half (45.1%) of the respondents are between the adult ages of 35-55+ and it will be good to study how much they have embraced green behaviours.

5.2.1.2. Gender

Figure 5.2: Response Statistics about Gender

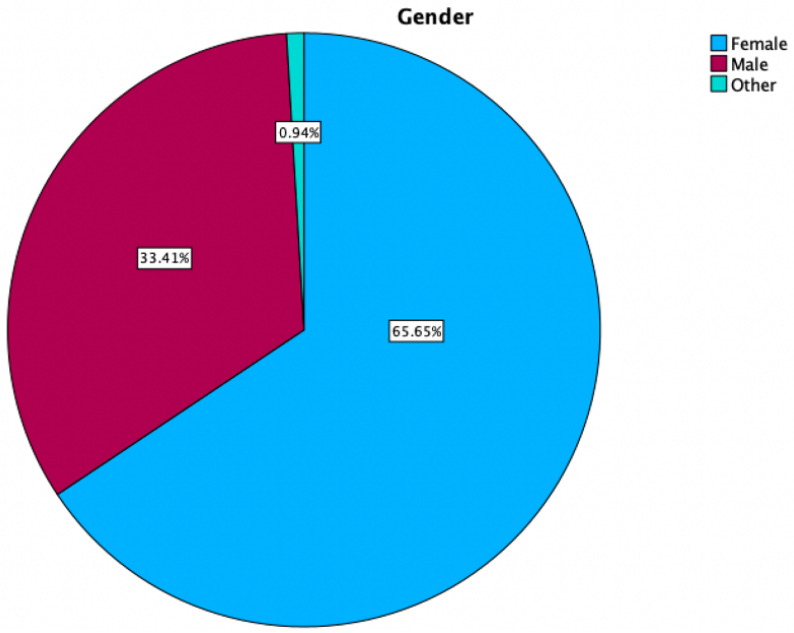


Table 5.2: Gender Data Results

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	279	65.6	65.6	65.6
	Male	142	33.4	33.4	99.1
	Other	4	.9	.9	100.0
	Total	425	100.0	100.0	

The data highlights the gender distribution within the surveyed population. Table 5.2 shows that the majority (65.6%) of respondents are female, followed by male participants (33.4%) and 0.9% of respondents who decide not to reveal their gender, The high percentage of female responding to an online questionnaire is confirming Wu, Zhao and Fils-Aime's (2022) finding that men tend to have a lower response rate to online surveys compared to females.

5.2.1.3. Level of Education

Figure 5.3: Response Statistic on the Level of Study

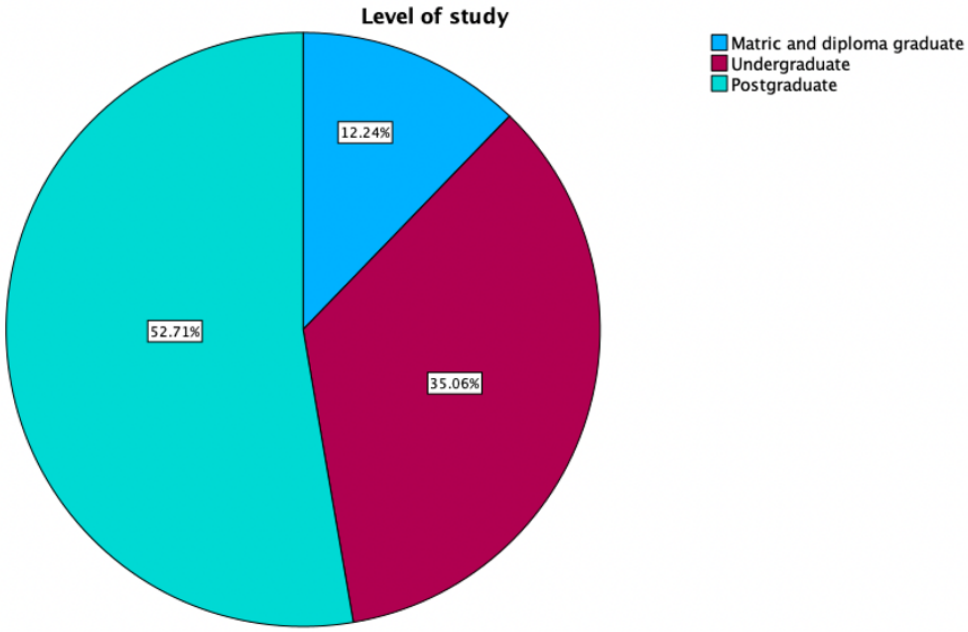


Table 5.3: Level of Study Data Results

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Matric and diploma graduate	52	12.2	12.2	12.2
	Undergraduate	149	35.1	35.1	47.3
	Postgraduate	224	52.7	52.7	64.9
	Total	425	100.0	100.0	

The results in Table 5.3 shows that most participants are in the postgraduate category, indicating a significant number of individuals with advanced degrees. The undergraduate category follows while a smaller proportion represents matric and diploma graduates. Following Shafiei and Maleksaeidi (2020) finding that "average pro-environmental behavior of postgraduate students is significantly higher than the undergraduate level it will be great to

examine differences in green training and competencies among these two groups of respondents.

5.2.1.4. Population Group

Figure 5.4: Response Statistics about the Population Group

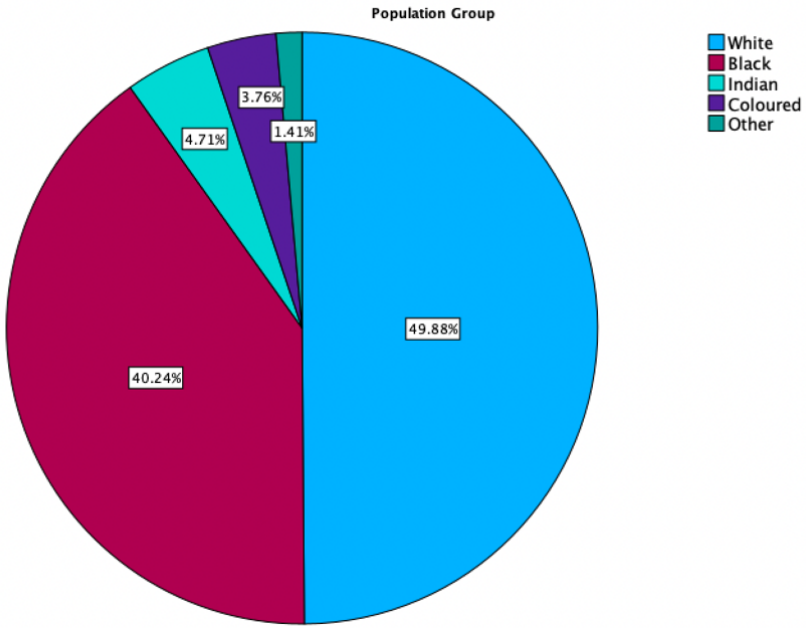


Table 5.4: Population Group Data Results

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	White	212	49.9	49.9	100.0
	Black	171	40.2	40.2	40.2
	Indian	20	4.7	4.7	48.7
	Coloured	16	3.8	3.8	44.0
	Other	6	1.4	1.4	50.1
	Total	425	100.0	100.0	

Table 5.4 shows that most participants identified as Whites (49.9%) followed by the Black (40.2%), Indians and Coloured at (8.5%), and (1.4%) were classified as Other. Interestingly

Ghazali et al. (2019) suggest that there could be ethnic group differences in pro-environmental and green behaviour.

5.1.2.5. Financial Level

Figure 5.5: Response Statistics about the Financial Level

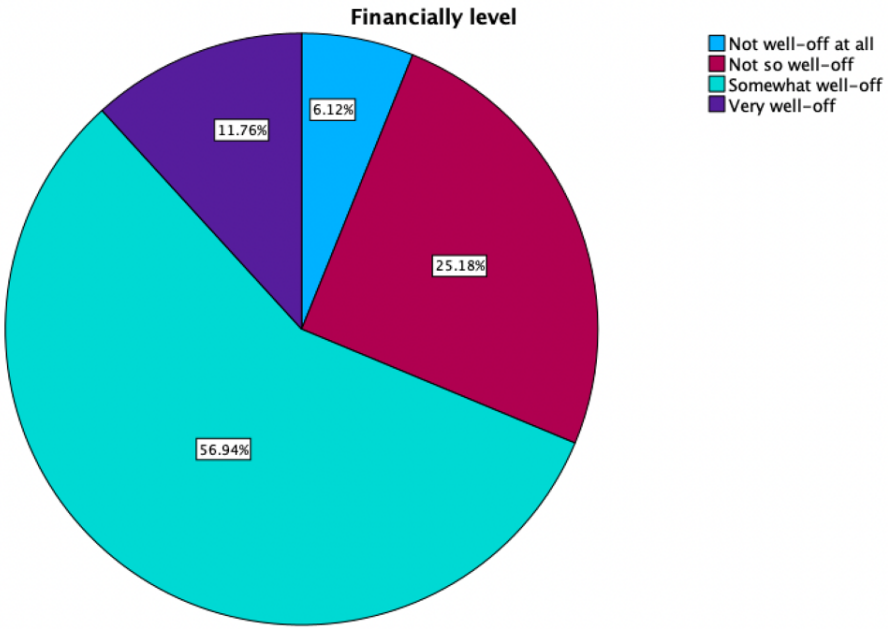


Table 5.5: Financial Level Data Results

		Percent	Frequency	Valid Percent	Cumulative Percent
Valid	Not well-off at all	6.1	26	6.1	31.3
	Not so well-off	25.2	107	25.2	25.2
	Somewhat well-off	56.9	242	56.9	88.2
	Very well-off	11.8	50	11.8	100.0
	Total	100.0	425	100.0	

In terms of how respondents perceive their financial situations, Table 5.5 shows that the largest proportion (68.7%) of participants falls under the "somewhat well-off" and “very

well-off" categories, indicating a good number of respondents are doing well financially. Smaller proportions of respondents reported being "not so well-off" or "very well-off", and the fewest (6.1%) respondents indicated they were "not well-off at all". Can income levels influence green behaviours? Yes, Sun and Wang (2020) found that middle and high income are environmentally conscious, and their knowledge of green products influences their attitudes and purchase behaviours more.

5.1.2.6. Screening Question on Exposure to Green Training

Figure 5.6: Response Statistics on the Screening Question about Green Training

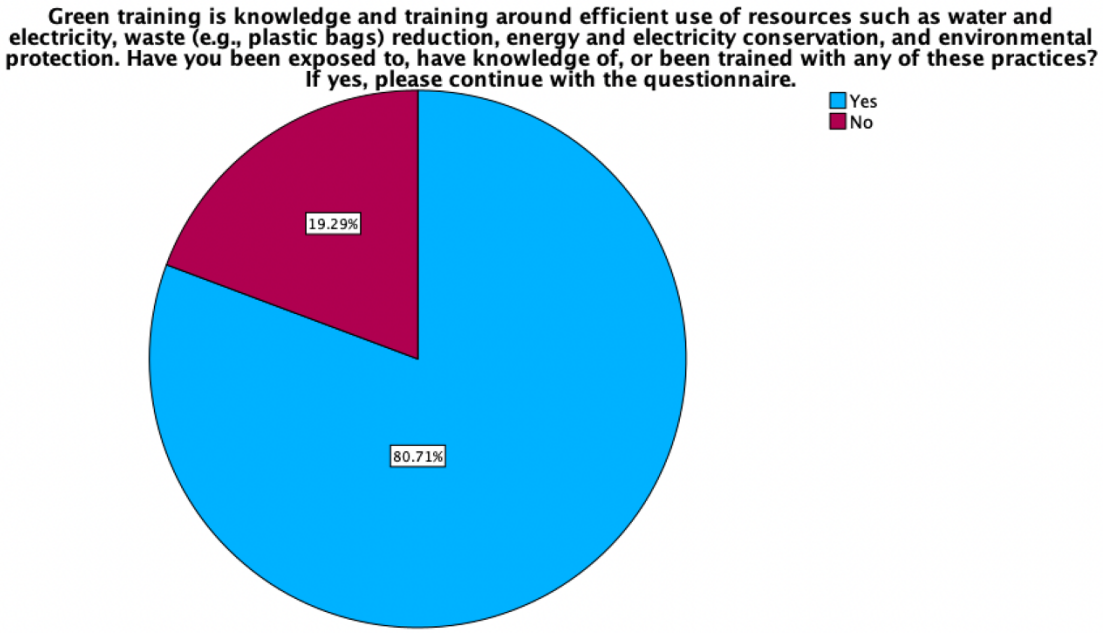


Table 5.6: Screening Question Data Results

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	343	80.7	80.7	100.0
	No	82	19.3	19.3	19.3
	Total	425	100.0	100.0	

The data indicates that the majority of respondents have had exposure to green training, suggesting that a significant proportion of the surveyed population has received training related to environmentally sustainable practices or concepts. A smaller percentage of participants reported not having had such exposure. Although the screening question did state that participants should not pursue the questionnaire if they answered "No" here, their responses were still considered as it is more likely that they misunderstood and presumed that some form of a formal green training program or class would need to be attended, however, part of the question states that it is sufficient to have any knowledge surrounding the efficient or conservative use of resources; given the prominent circumstances experienced in South Africa such as the water crises in Cape Town creating local awareness, or load shedding of electricity due to the inability of Eskom to meet the country's electricity demands; these are examples that expose the country to green training, and it is highly unlikely that if a participant can access an online survey that they do not have some understanding of these events or have had a more personal experience of a green-related encounter which gave them some knowledge or influenced their behaviour somehow. Several other unavoidable sustainability movements involve the introduction of every international automaker in the car industry - introducing battery and plug-in-hybrid cars as part of their model lines, of which many have set dates to indicate production of electrified cars only (Motavalli, 2021), or major South African consumer goods retailers such as Woolworths, Pick 'n Pay and Spar implementing several sustainability goals, some of which, positioned in front of the consumer's eye, that aim at 100% of their packaging to be recyclable, reusable, or compostable by 2025 (Omarjee, 2023; SPAR, 2021; Woolworths, n.d). Overall, the information extracted from participants provides insights into the prevalence of green training among the survey individuals.

5.2.2. Mean and Standard Deviation

The mean summarises the average levels of agreement/disagreement of the statements that measure the constructs. In this study, eleven (11) constructs were measured forty-one (41) items. They were measured with a five-point Likert-type scale where 1 was strongly disagreed and 5 was strongly agree. According to the mean results in Table 5.2, and with the exception of green attitudes and green awareness where there were strong agreements with (M>4), respondents fairly agreed to the statements measuring the other constructs with (M>2.5).

5.3. MEASUREMENT MODEL ASSESSMENT

The measurement model measures constructs' reliability and validity. The reliability was measured with Cronbach's alpha and composite reliability. The validity was measured through convergent validity using factor loadings and average variance extracted (AVE) and discriminant validity using correlation matrixes such as the Heterotrait-Monotrait ratio of correlations (HTMT) Criterion, and Fornell-Larcker Criterion. The results are in Tables 5.7, 5.8, 5.9, and 5.10. The next subsection reports on the reliability.

5.3.1. RELIABILITY OF MEASUREMENT INSTRUMENT

Table 5.7: Reliability and Validity Construct Measurement

	Cronbach's alpha	Composite reliability	Average variance extracted (AVE)	Mean	Standard deviation	No of items
Consumer Creativity	0.893	0.925	0.756	3.841	0.959	4
Family Communication	0.901	0.931	0.771	3.034	1.327	4
Green Abilities	0.636	0.759	0.442	2.884	1.088	4
Green Behaviour	0.779	0.855	0.601	3.532	0.985	4
Green Attitude	0.886	0.917	0.691	4.583	0.786	5
Green Knowledge	0.770	0.847	0.582	3.878	0.974	4
Green Skills	0.682	0.792	0.500	3.221	1.040	4
Green Training	0.600	0.768	0.461	3.752	1.009	4
Green Awareness	0.910	0.937	0.788	4.422	0.812	4
Media Communication	0.840	0.892	0.674	3.294	1.110	4
Peer Communication	0.860	0.904	0.703	3.022	1.237	4
School Communication	0.868	0.910	0.717	3.576	1.237	4

5.3.2.1. Cronbach's alpha

Construct reliability measures the internal consistency or dependability of the items that measure a construct (Hair et al., 2021). One of the methods used to measure the construct reliability is Cronbach's alpha (CA). Higher CA scores, mean more reliability in the items of the scale. Although Arof et al. (2018) considers a CA of < 0.70 as questionable, Ekolu and Quainoo (2019) regard CAs of $0.50 < \alpha < 0.80$ to be moderately reliable. Other authors find

that CAs between 0.60 – 0.70 are acceptable, especially for consumer behaviour studies and for exploratory studies like those testing a new scale (Campo-Arias et al., 2020; Hair Jr. et al., 2017). Therefore, with CAs in Table 5.7 being between 0.6 and 0.91, it can be concluded that there were constructs reliability. However, Hair et al. (2021) find CA to be very conservative and recommend the use of composite reliability.

5.3.2.2. Composite reliability

Composite reliability (CR) is alternative reliability measure to Cronbach's alpha that compensates for the conservative limitation of CA. Hair et al. (2021) recommend that the threshold or acceptable range should be between 0.7 and 0.9, although 0.95 can be acceptable. The CR figures in Table 5.7 are between 0.759 and 0.925. Thus, they have acceptable CR figures.

5.3.2. VALIDITY OF MEASUREMENT INSTRUMENTS

5.3.2.1. Convergent Validity

Average Variance Extracted (AVE)

The Average variance extracted (AVE) is a measurement that represents the average amount of variance that is explained of a construct from its indicators relative to the overall variance of the construct's indicators (Cheung et al., 2023). Although Purwanto and Sudargini (2021) recommend AVEs > 0.5 to be indicating good convergent validity, values > 0.4 are still acceptable (Maziriri et al., 2017; Maziriri & Mokoena, 2016). Based on the figures represented in Table 5.7, which range between 0.442 (Green Abilities) and 0.788 (Green Awareness), the convergent validity requirements for AVE have been obtained.

Standardised Factor Loadings

Table 5.8: Factor Loadings

	CC	FC	GA	GB	GD	GK	GS	GT	GW	MC	PC	SC
CC1	**0.821**	0.157	0.190	0.253	0.183	0.158	0.315	0.266	0.161	0.076	0.194	0.114
CC2	**0.889**	0.109	0.174	0.244	0.253	0.242	0.293	0.275	0.282	0.092	0.140	0.021
CC3	**0.892**	0.127	0.183	0.249	0.280	0.201	0.291	0.341	0.285	0.152	0.169	0.126
CC4	**0.875**	0.147	0.165	0.252	0.257	0.227	0.300	0.263	0.275	0.087	0.168	0.113
FC1	0.139	**0.882**	0.154	0.184	0.158	0.189	0.308	0.290	0.219	0.193	0.391	0.118

FC2	0.153	**0.901**	0.174	0.188	0.191	0.212	0.265	0.246	0.162	0.240	0.378	0.172
FC3	0.151	**0.893**	0.196	0.224	0.143	0.219	0.299	0.272	0.215	0.178	0.388	0.204
FC4	0.096	**0.836**	0.165	0.221	0.126	0.251	0.240	0.248	0.160	0.160	0.281	0.202
GA1	0.123	0.199	**0.719**	0.352	0.041	0.283	0.423	0.230	0.135	0.145	0.166	0.195
GA2	0.047	0.116	**0.607**	0.254	-0.081	0.184	0.303	0.095	0.019	0.064	0.040	0.195
GA3	0.055	0.141	**0.624**	0.339	-0.052	0.206	0.403	0.159	0.089	0.098	0.088	0.262
GA4	0.222	0.084	**0.703**	0.270	0.317	0.240	0.191	0.268	0.328	0.145	0.098	0.152
GB1	0.279	0.231	0.325	**0.805**	0.308	0.365	0.472	0.434	0.271	0.267	0.341	0.246
GB2	0.273	0.224	0.372	**0.869**	0.150	0.364	0.424	0.329	0.275	0.301	0.159	0.268
GB3	0.181	0.175	0.409	**0.808**	0.040	0.291	0.434	0.312	0.228	0.312	0.154	0.236
GB4	0.101	0.023	0.308	**0.599**	0.059	0.285	0.334	0.215	0.232	0.117	0.026	0.175
GD1	0.248	0.126	0.167	0.253	**0.797**	0.298	0.137	0.328	0.401	0.098	0.085	0.115
GD2	0.213	0.143	0.101	0.244	**0.893**	0.327	0.126	0.330	0.469	0.065	0.115	0.165
GD3	0.221	0.132	0.134	0.249	**0.871**	0.338	0.117	0.316	0.427	0.017	0.091	0.131
GD4	0.253	0.133	0.086	0.252	**0.734**	0.297	0.159	0.275	0.357	0.140	0.116	0.164
GD5	0.236	0.194	0.199	0.184	**0.851**	0.393	0.203	0.334	0.454	0.099	0.193	0.139
GK1	0.114	0.169	0.223	0.188	0.307	**0.688**	0.078	0.129	0.382	0.125	0.104	0.115
GK2	0.153	0.152	0.300	0.224	0.328	**0.798**	0.193	0.245	0.421	0.135	0.118	0.174
GK3	0.227	0.184	0.250	0.221	0.332	**0.792**	0.240	0.278	0.410	0.161	0.112	0.164
GK4	0.201	0.235	0.292	0.352	0.268	**0.768**	0.372	0.309	0.351	0.305	0.244	0.193
GS1	0.133	0.156	0.476	0.254	-0.071	0.209	**0.513**	0.172	0.089	0.119	0.136	0.188
GS2	0.168	0.140	0.481	0.339	-0.017	0.223	**0.616**	0.299	0.118	0.178	0.183	0.294
GS3	0.288	0.271	0.228	0.270	0.201	0.233	**0.825**	0.497	0.259	0.257	0.385	0.214
GS4	0.318	0.288	0.327	0.253	0.231	0.259	**0.815**	0.469	0.340	0.263	0.329	0.272
GT1	0.228	0.262	0.170	0.244	0.128	0.223	0.433	**0.726**	0.288	0.319	0.363	0.225
GT2	0.126	0.207	0.358	0.249	0.020	0.172	0.354	**0.488**	0.056	0.205	0.237	0.165
GT3	0.235	0.085	0.109	0.252	0.525	0.227	0.232	**0.636**	0.379	0.125	0.139	0.124
GT4	0.286	0.250	0.239	0.184	0.347	0.276	0.450	**0.822**	0.411	0.245	0.329	0.298
GW1	0.268	0.179	0.241	0.188	0.420	0.390	0.273	0.413	**0.857**	0.220	0.167	0.237
GW2	0.257	0.189	0.274	0.224	0.434	0.439	0.302	0.377	**0.918**	0.202	0.146	0.247
GW3	0.286	0.182	0.227	0.221	0.471	0.490	0.268	0.392	**0.902**	0.188	0.165	0.258
GW4	0.221	0.225	0.226	0.352	0.485	0.483	0.290	0.360	**0.873**	0.170	0.164	0.160
MC1	0.105	0.205	0.120	0.254	0.038	0.187	0.273	0.270	0.146	**0.822**	0.303	0.160
MC2	0.048	0.204	0.100	0.339	0.024	0.180	0.229	0.221	0.098	**0.831**	0.300	0.144
MC3	0.102	0.156	0.142	0.270	0.158	0.228	0.221	0.267	0.236	**0.803**	0.294	0.188
MC4	0.120	0.161	0.224	0.253	0.098	0.225	0.270	0.319	0.223	**0.828**	0.256	0.240
PC1	0.158	0.345	0.140	0.244	0.086	0.187	0.318	0.314	0.128	0.315	**0.830**	0.213
PC2	0.133	0.294	0.134	0.249	0.176	0.202	0.243	0.264	0.148	0.309	**0.784**	0.121
PC3	0.186	0.370	0.144	0.252	0.127	0.144	0.374	0.393	0.161	0.279	**0.860**	0.183

PC4	0.158	0.361	0.123	0.184	0.110	0.152	0.375	0.360	0.168	0.280	**0.878**	0.247
SC1	0.071	0.188	0.213	0.188	0.121	0.157	0.214	0.225	0.194	0.149	0.168	**0.815**
SC2	0.135	0.174	0.225	0.224	0.221	0.146	0.292	0.299	0.229	0.179	0.262	**0.824**
SC3	0.091	0.137	0.272	0.221	0.113	0.189	0.319	0.254	0.210	0.215	0.180	**0.891**
SC4	0.054	0.167	0.241	0.352	0.109	0.249	0.291	0.262	0.230	0.227	0.160	**0.854**

Note: CC = Consumer Creativity; FC = Family Communication; GA = Green Abilities; GB = Green Behaviour; GD = Green Attitude; GK = Green Knowledge; GS = Green Skills; GT = Green Training; GW = Green Awareness; MC = Media Communication; PC = Peer Communication; SC = School Communication

Hair et al. (2009) proposed that the standardised factor loadings must have a cut-off threshold of ≥ 0.5 to be significant, and if there are any indicators that load at a similar value or higher, they are considered cross-loaders. However, Fein et al. (2021) recommend a minimum of 4 variables per factor, and that all items must load at a score measurement that is greater than 0.4; also, in the context of pro-environmental consumer behaviour, an acceptance of > 0.4 for factor loadings has been made (Ertz, Karakas & Sarigollu, 2016), which is why the value of 0.488 (GT2) and above have been included in this analysis. Furthermore, an assessment of the cross-loadings must be considered to ensure that they are not greater than any other constructs (Hair Jr. et al., 2017). Referring to Table 5.8, there were no cross-loadings as all the items were loaded into their respective constructs, which indicates that the scale worked well with the targeted sample. All the factor loadings into respective constructs range between 0.488 – 0.918, meeting the required threshold and demonstrating good associations, particularly with higher values. This indicates that there is the presence of convergent validity from factor loadings.

5.3.2.2. Discriminant Validity

Heterotrait-Monotrait ratio of correlations (HTMT) Criterion

Table 5.9: Heterotrait-Monotrait Ratio of Correlations (HTMT) – Matrix

	CC	FC	GA	GB	GD	GK	GS	GT	GW	MC	PC	SC
CC												
FC	0.173											
GA	0.219	0.259										
GB	0.323	0.255	0.641									

GD	0.315	0.196	0.235	0.218								
GK	0.271	0.290	0.465	0.511	0.485							
GS	0.408	0.379	0.850	0.776	0.242	0.403						
GT	0.445	0.406	0.470	0.611	0.539	0.460	0.819					
GW	0.318	0.239	0.271	0.385	0.567	0.609	0.358	0.571				
MC	0.130	0.255	0.215	0.394	0.132	0.290	0.373	0.461	0.243			
PC	0.217	0.461	0.192	0.264	0.170	0.237	0.461	0.546	0.204	0.417		
SC	0.124	0.224	0.391	0.363	0.191	0.257	0.436	0.415	0.284	0.259	0.259	

The HTMT is a measure predicting perfect reliability between two constructs and indicates true correlation (Hair et al., 2017). To determine discriminant validity using the HTMT, Hair et al. (2021) recommend values <0.85 but not >0.85 for conceptually different constructs and <0.9 for conceptually similar constructs like dimensions of a construct. Considering that the values in Table 5.9 are not >0.850, the HTMT discriminant validity was achieved.

Fornell-Larcker Criterion

Table 5.10: Fornell-Larcker Criterion

	CC	FC	GA	GB	GD	GK	GS	GT	GW	MC	PC	SC
CC	**0.870**											
FC	0.154	**0.878**										
GA	0.204	0.196	**0.665**									
GB	0.287	0.232	0.450	**0.775**								
GD	0.282	0.176	0.167	0.207	**0.831**							
GK	0.240	0.246	0.352	0.424	0.399	**0.763**						
GS	0.344	0.318	0.464	0.543	0.179	0.319	**0.705**					
GT	0.330	0.302	0.315	0.434	0.382	0.335	0.550	**0.679**				
GW	0.292	0.217	0.273	0.324	0.509	0.506	0.319	0.436	**0.888**			
MC	0.118	0.219	0.185	0.334	0.100	0.252	0.305	0.333	0.221	**0.821**		
PC	0.191	0.411	0.160	0.251	0.145	0.199	0.398	0.403	0.181	0.348	**0.839**	
SC	0.106	0.196	0.281	0.302	0.172	0.218	0.333	0.311	0.256	0.228	0.232	**0.847**

As stated by Hair Jr. et al. (2017) the Fornell-Larcker Criterion depicts the square root of the values for AVE with the latent variable. To assure discriminant validity this value must be higher than its highest correlation coefficients with any other measured construct. Table 5.10 shows that all the adjacent values in bold are all greater than the corresponding correlation coefficients. Thus, Fornell-Lacker discriminant validity is authenticated.

5.3.3. Structural Equation Modelling (SEM)

The structural model tests the relationships between the constructs and thus the hypotheses was conducted after doing factor analyses to assess the model fit. A test of multicollinearity was also conducted to determine whether independent constructs are highly inter-associated or correlated with each other (Hair et al., 2021).

5.3.3.1. Model Fit Indices

Table 5.11: Fit Summary Statistics

	Saturated model	Estimated model
SRMR	0.073	0.100
d_ULS	6.589	13.987
d_G	1.399	1.603
Chi-square	3457.021	3747.963
NFI	0.716	0.700

Model fit test measures how the sample is well matched by the model-implied covariance matrix. Unlike the saturated model that is used to assess the correlation between all constructs, the estimated model based on the total effect scheme is used to assess the model fit. For PLS-SEM used in this study, the indicators used to determine model fit are the d_ULS (Squared Euclidean distance) and the d_G (Geodesic distance), SRMR, Chi-square and NFI (Ringle et al., 2022).

The SRMR is the square root of the variation between the observed, residual covariance matrix and hypothesised model. This indicator is particularly useful when the instrument has items with varying ranges (Misba & Jailani, 2019). The recommended threshold of SRMR is $0.05 \leq$ SRMR ≤ 0.10 (Baki, 2017). For Chi-square indicator, the recommended threshold value should be $p > 0.05$, the value of 3747.96 therefore, indicates a good fit, and so the model fits the data well. Lastly, for NFI, it is recommended that the threshold value should be NFI > 0.9. However, Barragan-Sanchez et al. (2020) employed a cut of > 0.70. Following Barragan-Sanchez et al.'s (2020) recommendation, and the NFI value of 0.70 in Table 5.11, this study's sample reflects an acceptable fit for the model.

5.3.3.2. Collinearity Statistics (VIF)

Table 5.12: Variance Inflation Factor

	VIF
CC1	2.034
CC2	2.697
CC3	2.791
CC4	2.450
FC1	2.644
FC2	3.150
FC3	2.790
FC4	2.196
GA1	1.308
GA2	1.926
GA3	1.703
GA4	1.054
GB1	1.469
GB2	2.419
GB3	2.135
GB4	1.256
GD1	1.957
GD2	3.661
GD3	3.295
GD4	1.622
GD5	2.336
GK1	1.939
GK2	2.199
GK3	1.440
GK4	1.329
GS1	1.554
GS2	1.620
GS3	1.536
GS4	1.516
GT1	1.304
GT2	1.135
GT3	1.370

GT4	1.544
GW1	2.430
GW2	3.672
GW3	3.381
GW4	2.923
MC1	2.319
MC2	2.483
MC3	1.752
MC4	1.750
PC1	1.991
PC2	1.828
PC3	2.055
PC4	2.362
SC1	1.963
SC2	1.768
SC3	3.169
SC4	2.653

The VIF measures multicollinearity and is implemented to show whether predictors are correlated (Daoud, 2017). The recommended threshold is ≤ 5 (James, 2021) Thus, it can be deduced from Table 7.7 that collinearity was achieved with the VIF ranging between 1.054 (GA4) and 3.672 (GW2).

5.3.3.3. Path Coefficients and Hypotheses Testing

The results of testing the hypotheses are in Figure 5.7 and Table 5.13.

Figure 5.7: Structural Model

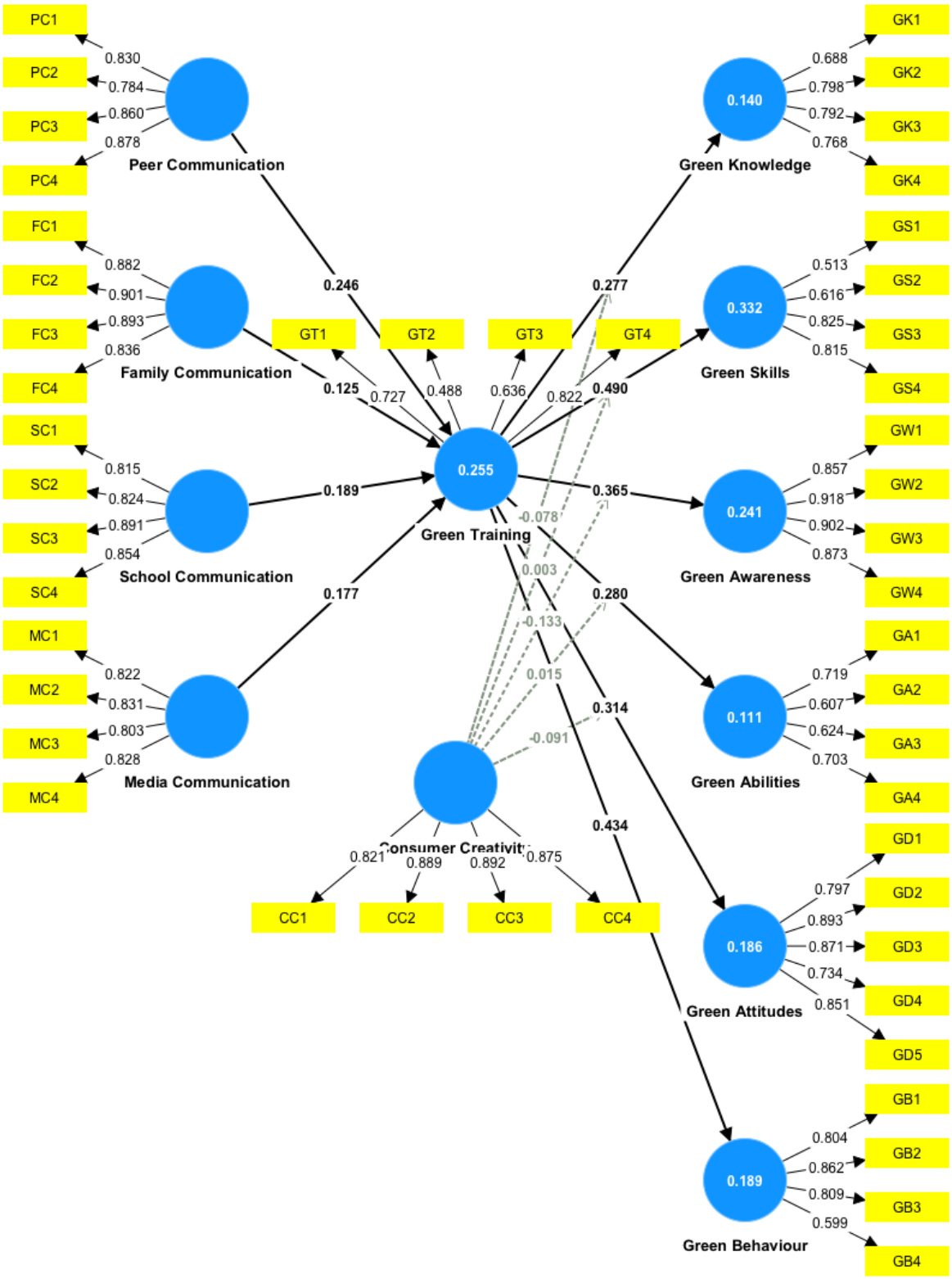

PC1
PC2
PC3
PC4
0.830
0.784
0.860
0.878
Peer Communication
FC1
FC2
FC3
FC4
0.882
0.901
0.893
0.836
Family Communication
SC1
SC2
SC3
SC4
0.815
0.824
0.891
0.854
School Communication
MC1
MC2
MC3
MC4
0.822
0.831
0.803
0.828
Media Communication
0.246
0.125
0.189
0.177
GT1
GT2
GT3
GT4
0.727
0.488
0.636
0.822
0.255
Green Training
0.277
0.490
0.365
0.280
0.314
0.434
-0.078
0.003
-0.133
0.015
-0.091
0.821
0.889
0.892
0.875
CC1
CC2
CC3
CC4
0.140
Green Knowledge
0.332
Green Skills
0.241
Green Awareness
0.111
Green Abilities
0.186
Green Attitudes
0.189
Green Behaviour
GK1
GK2
GK3
GK4
0.688
0.798
0.792
0.768
GS1
GS2
GS3
GS4
0.513
0.616
0.825
0.815
GW1
GW2
GW3
GW4
0.857
0.918
0.902
0.873
GA1
GA2
GA3
GA4
0.719
0.607
0.624
0.703
GD1
GD2
GD3
GD4
GD5
0.797
0.893
0.871
0.734
0.851
GB1
GB2
GB3
GB4
0.804
0.862
0.809
0.599

Table 5.13: Path Coefficients, T values, P values

Proposed Relationship	Hypotheses	Path Coefficient	T statistics	P values	Significance
PC -> GT	**H1a**	0.246	5.003	0.000	Supported and significant
FC -> GT	**H1b**	0.125	2.586	0.010	Supported and significant
SC -> GT	**H1c**	0.189	4.182	0.000	Supported and significant
MC -> GT	**H1d**	0.177	3.995	0.000	Supported and significant
GT -> GK	**H2a**	0.278	5.599	0.000	Supported and significant
GT -> GS	**H2b**	0.490	11.210	0.000	Supported and significant
GT -> GW	**H2c**	0.365	7.755	0.000	Supported and significant
GT -> GA	**H2d**	0.280	5.111	0.000	Supported and significant
GT -> GD	**H2e**	0.314	5.693	0.000	Supported and significant
GT -> GB	**H2f**	0.381	7.352	0.000	Supported and significant
CC -> GK	**H3a**	0.128	2.553	0.011	Supported and significant
CC -> GS	**H3b**	0.183	4.079	0.000	Supported and significant

CC -> GW	**H3c**	0.136	3.182	0.001	Supported and significant
CC -> GA	**H3d**	0.115	2.134	0.033	Supported and significant
CC -> GD	**H3e**	0.154	3.606	0.000	Supported and significant
CC -> GB	**H3f**	0.162	3.313	0.001	Supported and significant
CC x GT -> GK	**H4a**	-0.078	1.961	0.049	Supported and significant
CC x GT -> GS	**H4b**	0.003	0.078	0.938	Unsupported
CC x GT -> GW	**H4c**	-0.133	2.969	0.003	Supported and significant
CC x GT -> GA	**H4d**	0.014	0.339	0.735	Unsupported
CC x GT -> GD	**H4e**	-0.091	1.216	0.224	Unsupported
CC x GT -> GB	**H4f**	0.004	0.093	0.926	Unsupported

Note: CC = Consumer Creativity; FC = Family Communication; GA = Green Abilities; GB = Green Behaviour; GD = Green Attitude; GK = Green Knowledge; GS = Green Skills; GT = Green Training; GW = Green Awareness; MC = Media Communication; PC = Peer Communication; SC = School Communication

The path coefficients inform of the strength of the relationship while the *t*-statistics and *p*-values indicate whether the hypotheses are supported or not. Duh and Pwaka (2023) suggest t-

values of 1.65 ($p \leq 0.09$), 1.96 ($p \leq 0.05$), and 2.54 ($p \leq 0.01$) as significant at 90%, 95% and 99% confidence levels respectively. For PLS-SEM, Hair et al. (2021) recommend ($p \leq 0.05$) at a 95% confidence level. But for 1.65 ($p \leq 0.09$), all these recommended values for the test of significance are considered in this study.

H1a: Peer Communication (PC) → Green Training (GT)

H1a anticipated a positive relationship between Peer Communication (PC) and Green Training (GT). The path coefficient value is 0.246, which indicates a positive relationship since it is above 0 (Hair Jr. et al., 2021), the *t*-statistic is 5.003 and is therefore significant as it is above 1.96 for a 95% confidence interval (Abadie, 2020), and the *p*-value is 0.000 which results in the hypothesis being significant and supported considering it is ≤ 0.05 (Bevans, 2020; Bhondge, 2017; Kennedy-Shaffer, 2017). This confirms that there is a positive relationship between Peer Communication and Green Training.

H1b: Family Communication (FC) → Green Training (GT)

H1b expected to have a positive relationship between Family Communication (FC) and Green Training (GT). The path coefficient value is 0.125, with a *t*-statistic of 2.586 and a *p*-value of 0.010, indicating a significant and supported relationship. This enforces the presence of a positive relationship between Family Communication and Green Training

H1c: School Communication (SC) → Green Training (GT)

H1c predicted that there will be a positive relationship between School Communication (SC) and Green Training (GT). The path coefficient value is 0.189, with a *t*-statistic of 4.182 and a *p*-value of 0.000, confirming a significant and positive relationship. Thus, there is a positive association between School Communication and Green Training.

H1d: Media Communication (MC) → Green Training (GT)

H1d proposed a positive relationship between Media Communication (MC) and Green Training (GT). The path coefficient value is 0.177, with a *t*-statistic of 3.995 and a *p*-value of

0.000, indicating a significant relationship. Therefore, there is a positive relationship between Media Communication and Green Training.

Out of the four studied communication agents, peer communication made the strongest impact on green training with ($\beta = 0.246$, $p < 0.01$).

H2a: Green Training (GT) → Green Knowledge (GK)

H2a predicted that there is a positive relationship between Green Training (GT) and Green Knowledge (GK). The path coefficient value is 0.278, with a *t*-statistic of 5.599 and a *p*-value of 0.000, confirming a significant and positive relationship. This suggests that Green Graining positively influences Green Knowledge.

H2b: Green Training (GT) → Green Skills (GS)

For H2b, the relationship between Green Training (GT) and Green Skills (GS) is anticipated to have a positive relationship. The path coefficient value is 0.490, with a *t*-statistic of 11.210 and a *p*-value of 0.000, indicating a significant and strong positive relationship. Therefore, Green Training significantly and positively enhances Green Skills.

H2c: Green Training (GT) → Green Awareness (GW)

H2c predicted that there will be a positive relationship between Green Training (GT) and Green Awareness (GA). The path coefficient value is 0.365, with a *t*-statistic of 7.755 and a *p*-value of 0.000, confirming a significant and positive relationship. Hence, Green Training contributes positively to Green Awareness.

H2d: Green Training (GT) → Green Abilities (GA)

With H2d, it was anticipated there will be a positive relationship between Green Training and Green Abilities. The path coefficient value is 0.280, with a *t*-statistic of 5.111 and a *p*-value of 0.000, indicating a significant and positive relationship. This suggests that Green Training is positively associated with enhancing Green Abilities.

H2e: Green Training (GT) → Green Attitude (GD)

H2c predicted that there will be a positive relationship between Green Training and Green Attitude. The path coefficient value is 0.314, with a t-statistic of 5.693 and a *p*-value of 0.000, confirming a significant and supported relationship. Therefore, Green Training has a positive influence on shaping Green Attitudes.

H2f: Green Training (GT) → Green Behaviour (GB)

H2f forecasted a positive relationship between Green Training and Green Behaviour. The path coefficient value is 0.381, with a *t*-statistic of 7.352 and a *p*-value of 0.000, indicating a significant and strong positive relationship. Thus, Green Training significantly affects and promotes Green Behaviour.

Out of Cabral and Dhar's (2019) six green competencies dimensions, green skills were most impacted by green training with ($\beta = 0.490$, $p < 0.01$).

H3a: Consumer Creativity (CC) → Green Knowledge (GK)

H3a postulated a positive relationship where Consumer Creativity (CC) significantly influences Green Knowledge (GK). The path coefficient value is 0.128, with a *t*-statistic of 2.553 and a *p*-value of 0.011, indicating a positive, supported, and significant relationship.

H3b: Consumer Creativity (CC) → Green Skills (GS)

The hypothesis of H3b predicted a positive relationship where Consumer Creativity (CC) significantly influences Green Skills (GS). The path coefficient value is 0.183, with a *t*-statistic of 4.079 and a p-value of 0.000 demonstrating a positive, supported and significant relationship.

H3c: Consumer Creativity (CC) → Green Awareness (GW)

H3c proposed a positive relationship where Consumer Creativity (CC) significantly influences Green Awareness (GW). The path coefficient value is 0.136, with a *t*-statistic of 3.182 and a *p*-value of 0.001, indicating that the relationship is positive, supported and significant.

H3d: Consumer Creativity (CC) → Green Abilities (GA)

Hypothesis H3d proposed that Consumer Creativity (CC) will positively influence Green Abilities (GA). The path coefficient value is 0.115, with a *t*-statistic of 2.134 and a *p*-value of 0.033, demonstrating a supported and significant relationship which is positive.

H3e: Consumer Creativity (CC) → Green Attitude (GD)

Hypotheses H3e proposed a positive relationship where Consumer Creativity (CC) significantly influences Green Attitude (GD). The path coefficient value is 0.154, with a *t*-statistic of 3.606 and a *p*-value of 0.000 indicating a supported and significant relationship

H3f: Consumer Creativity (CC) → Green Behaviour (GB)

The hypothesis of H3f proposed that Consumer Creativity (CC) will positively Green Behaviour (GB is anticipated a positive relationship. Based on the results, the path coefficient value is 0.162, with a *t*-statistic of 3.313 and a *p*-value of 0.001, demonstrating a supported and significant relationship.

Out of Cabral and Dhar's (2019) six green competencies dimensions, creativity influenced green skills the most with ($\beta = 0.183$, $p < 0.01$).

5.3.3.4. The Moderating Effect

H4a: Consumer Creativity (CC) x Green Training (GT) → Green Knowledge (GK)

Hypothesis H4a expected that Consumer Creativity (CC) would moderate the relationship between Green Training (GT) and Green Knowledge (GK). The path coefficient value is -0.078, which indicates that there is a negative relationship, with a t-statistic of 1.961 and a p-value of 0.049, indicating a supported and significant relationship. This means that although creativity significantly moderates the relationship between green training and knowledge, creativity may stand in the way of how much the training makes an impact on the knowledge gained. Or the negative moderation may come from respondents who score low/high in creativity. A multigroup analysis may be required between the scorers of creativity.

H4b: Consumer Creativity (CC) x Green Training (GT) → Green Skills (GS)

The hypothesis of H4b proposed that Consumer Creativity (CC) could moderate the relationship between Green Training (GT) and Green Skills (GS). However, the path coefficient value is 0.003, with a *t*-statistic of 0.078 and a *p*-value of 0.938, suggesting an unsupported relationship, since the *p*-value is above the threshold of 0.05.

H4c: Consumer Creativity (CC) x Green Training (GT) → Green Awareness (GW)

Hypothesis H4c suggested that Consumer Creativity (CC) could moderate the relationship between Green Training (GT) and Green Awareness (GW). The path coefficient shows a negative relationship with a value of -0.133, a t-statistic of 2.969 and a p-value of 0.003, indicating a supported and significant relationship. However, based on the negative path coefficient, creativity is negating and reducing how green training drive green awareness. Creative people may think they know what to do and that may limit their awareness of green practices.

H4d: Consumer Creativity (CC) x Green Training (GT) → Green Abilities (GA)

The hypothesis of H4d is expected to moderate the relationship of Consumer Creativity (CC) between Green Training (GT) and Green Abilities (GA). However, the path coefficient value is 0.014, with a *t*-statistic of 0.339 and a *p*-value of 0.735, suggesting an unsupported relationship.

H4e: Consumer Creativity (CC) x Green Training (GT) → Green Attitude (GD)

Hypothesis H4e suggested that Consumer Creativity (CC) can moderate the role of Green Training (GT) in Green Attitude (GD) development. However, the path coefficient value is -0.091, with a *t*-statistic of 1.216 and a *p*-value of 0.224, suggesting an unsupported relationship.

H4f: Consumer Creativity (CC) x Green Training (GT) → Green Behaviour (GB)

Hypothesis H4f anticipated that Consumer Creativity (CC) could moderate the relationship between Green Training (GT) and Green Behaviour (GB). However, the path coefficient value is 0.004, with a *t*-statistic of 0.093 and a *p*-value of 0.926, suggesting an unsupported relationship.

5.3.3.5. The Mediating Effect

Mediating constructs such as the green training in the conceptual model intervene or have an indirect effect on how much the independent constructs impact the outcome or dependent constructs (Thrash, et al., 2020). The results of the mediating effects are in Table 5.14.

Table 5.14: Mediating Effect

	Path Coefficient (Original sample)	T statistics (|O/STDEV|)	P values
MC -> GT -> GW	0.065	3.500	0.000
PC -> GT -> GS	0.121	4.190	0.000
SC -> GT -> GS	0.092	3.894	0.000
FC -> GT -> GW	0.046	2.330	0.020

PC -> GT -> GW	0.090	4.424	0.000
SC -> GT -> GW	0.069	3.425	0.001
MC -> GT -> GA	0.050	2.861	0.004
PC -> GT -> GK	0.068	3.750	0.000
FC -> GT -> GS	0.061	2.469	0.014
MC -> GT -> GB	0.068	3.131	0.002
MC -> GT -> GD	0.056	3.470	0.001
PC -> GT -> GB	0.094	3.985	0.000
PC -> GT -> GA	0.069	3.357	0.001
PC -> GT -> GD	0.077	4.191	0.000
FC -> GT -> GK	0.035	2.172	0.030
SC -> GT -> GB	0.072	3.653	0.000
MC -> GT -> GK	0.049	3.023	0.003

SC -> GT -> GA	0.053	3.177	0.001
FC -> GT -> GD	0.039	2.218	0.027
SC -> GT -> GD	0.059	3.071	0.002
FC -> GT -> GB	0.048	2.341	0.019
SC -> GT -> GK	0.052	3.252	0.001
FC -> GT -> GA	0.035	2.164	0.030
MC -> GT -> GS	0.087	3.631	0.000

Table 5.14 shows that green training significantly and positively mediates in all the relationships between the communication agents (i.e., peer, school, media and family) and the six green competencies dimensions of green abilities, behaviour, attitudes, knowledge, skills and awareness with *t*-statistics all > 2.0. This demonstrates the importance of green training in how much socialization agents impact green competencies.

5.3.3.6. Model Predictive and Explanatory Powers

The test of predictive power Q^2 assesses the predictive accuracy of a PLS path model whereby values larger than zero are meaningful and those higher than 0.25 and 0.50 do depict medium and large predictive powers. The explanatory power R^2 measures the variance explained of the dependent constructs by the independent constructs. It also measures explanatory power of the conceptual model. R^2 values of 0.25, 0.50, and 0.75 are considered as weak, moderate, and substantial respectively (Hair et al., 2019).

Table 5.15: Values of Model Predictive and Explanatory Powers

	Q^2predict	R-square	R-square adjusted
Green Abilities	0.077	0.111	0.104
Green Behaviour	0.164	0.211	0.206
Green Attitudes	0.084	0.186	0.180
Green Knowledge	0.100	0.140	0.134
Green Skills	0.250	0.332	0.327
Green Training	0.233	0.255	0.248
Green Awareness	0.136	0.241	0.235

Following the figures in Table 5.15, it shows that predictive (Q^2) and explanatory (R^2) powers of this study's model are meaningful (Q^2 >0), moderate (Q^2 =0.25), weak (R^2 <0.25) and moderate (R^2 >0.25). These are indications that there are other predictors of green training and the six dimensions of green competencies.

5.4. CONCLUSION

This chapter presents results from data collected from a sample of 425 individuals residing in South Africa. The analyses started with descriptive statistics, encompassing mean and standard deviation. The application of Partial Least Squares Structural Equation Modelling (PLS-SEM) was pivotal in testing the proposed model after ensuring constructs' reliability, validity and model fit within the tested sample. The good green competency's reliability and validity results indicate that Cabral and Dhar's (2019) six-dimensions green competencies scale works well with a South African sample.

Further, the comprehensive implementation of path analysis provided definitive conclusions regarding the hypotheses' significance. Notably, 16 hypotheses garnered substantial support, affirming the proposed relationships. However, 6 hypotheses (H4a, H4b, H4c, H4d, H4e, and H4f) were not supported, indicating that Consumer Creativity does not moderate these specified relationships between Green Training and respective green competencies. Summarily and relating to the empirical objectives stated in Chapter 1; the socialisation/communication agents (i.e., peer, family, school and media communications) impacted green training, green training and creativity lead to Cabral and Dhar's (2019) six dimensions of green competencies

(knowledge, skills, awareness, abilities, attitudes, and behaviours). However, it was found that the relationships between green training and green competencies are partially moderated by consumer creativity. Thus, there will be a need for a multi-group analysis for low and high scorers of creativity.

CHAPTER 6: DISCUSSION, FUTURE RECOMMENDATIONS AND CONCLUSION

6.1. INTRODUCTION

This chapter discusses the findings presented in Chapter 5 and obtained from the study. The chapter starts by recapping the objectives and key research questions of the study. It then discusses the findings of the tested hypotheses, highlights the limitations, makes recommendations and conclusions.

6.2. RECAPPING THE STUDY OBJECTIVES AND KEY RESEARCH QUESTIONS

Green marketing and green consumption are growing areas of study (Szabo & Webster, 2020) considering the negative impact of these activities on the environment and societal well-being Thus, marketing management scholars are examining the extent to which knowledge, skills and competencies in environmental management can assist in protecting the environment while economic benefits are gained (Gull & Idrees, 2022; Yafi et al., 2021). Cabral and Dhar (2019) developed a scale and a model suggesting that green training leads to six dimensions of green competencies but did not answer a question as to the socialisation or communication agents that train consumers into green competencies. To answer this question and contribute to the area of green marketing and consumption, this research was aimed at answering the question as to how much does green training from four socialisation agents (peer, family, media and school) impact Cabral and Dhar's (2019) six green competencies dimensions (knowledge, skills, awareness, abilities, attitudes, and behaviours) through the moderating effect of consumer green creativity. To answer this question, the following objectives were formulated:

1. To review the literature on the concept, essence and benefits of green training, consumer creativity and competencies amongst employees and consumers.
2. To conduct a literature review on the various models and theories explaining the varied drivers of green competencies, so that a conceptual model and hypotheses can be developed.
3. Discuss the methods of data collection and analyses that will be appropriate in quantitatively testing the conceptual model and hypotheses.

4. To examine the extent to which the socialisation agents (i.e., peer, family, school, and media communications) impact green training.
5. To test the relationships between green training and green competencies (knowledge, skills, awareness, abilities, attitudes, and behaviours) (chapter 5).
6. To test the scale of Cabral and Dhar (2019) and assess whether his 6-dimensional scale could be applicable in a South African context (Chapter 5).
7. To assess how much creativity moderates the relationships between green training and green competencies (chapter 5).
8. To empirically test the conceptual model and hypotheses and present the results (chapter 5).
9. To discuss the results, implications and draw conclusions (chapter 6).

Objectives 1-4 were theoretical objectives and were achieved in chapters 1-4. After the literature review, the Ability–Motivation–Opportunity (AMO) theory, the Natural-Resource-Based-View and socialisation theories were found useful in finding answers to the research questions. Guided by these theories and Gull and Idrees' (2022) and Joshi and Dhar's (2020) models also found useful, an integrated conceptual model was developed in Chapter 4. To test the model, quantitative research methods were found appropriate, and their justifications specifics are found in Chapter 4. After quantitative data analyses using two steps (measurement and structural models) PLS-SEM, the results are presented in Chapter 5. The next section of this chapter discusses the results of the core relationships tested.

6.3. DISCUSSIONS OF THE FINDINGS FROM CORE TESTED RELATIONSHIPS

Based on the deductions from Chapter 5, this section elaborates on the results from core findings alongside findings from the empirical literature on similar investigations.

6.3.1. Relationship Between The Socialisation Agents And Green Training

The relationship studied here was that between the socialisation agents (i.e., peer, family, school, and media) and green training. The results revealed that there were positive and significant relationships between all the socialization agents and green training. The peer and family socialization and green training relationships support the study of Knox et al. (2019),

who found peer and family socialisation through their behaviour trains on the binge drinking intentions of adolescents. Peers have also been found to show a strong influence on green buying behaviour (Le et al., 2022; Muralidharan et al., 2016). It has been found that the family impacts young consumers' willingness to pay more towards products that are ethically produced (Lee et al., 2020), and facilitates the development of showing precedence relating to aspects such as store and product preferences, choice of brands and multifarious consumption values (Mandrik et al., 2018).

Regarding school communication, a study conducted in China by Wang et al. (2022) established that there is an association between educational attainment and an increase in pro-environmental behaviour and attitudes. Suryani et al. (2019) found that schools are a central learning establishment for environmental experience and that schools along with peers are fundamental for the young generation to solve the problem of reducing environmental damage by raising student awareness practically, cognitively, and emotionally. In terms of media influence, Jain et al. (2020) established that social media, along with EWOM (electronic word of mouth) were significant in influencing green consumer behaviour. However, the various media advertisements on sustainability are shown to drive new purchase choices among young adults only if the advertisement is trustworthy (Eklund et al. 2020). Although Yan and Xu (2010) found that all socialisation agents, except for media, had a positive influence on green product purchasing frequency, this study, through the lens of the socialisation theories, establishes that all of the socialisation agents had a positive influence on green training and represents a significant and original contribution to the existing literature as all of these dimensions have not been explored in previous studies, and used to determine their relationship to create green training. This is particularly important in a young population, economical and culturally diverse country like South Africa.

6.3.2. Relationship Between Green Training And Green Competencies

Based on the results in Chapter 5, it was found that green training positively and significantly leads to Cabral and Dhar's (2019) six dimensions of green competencies (knowledge, skills, awareness, abilities, attitudes, and behaviours). Similar studies regarding the relationship between green training and green competencies have been conducted with university employees in India (Bakr & Qureshi, 2019), private and public university sectors in Malaysia

(Yafi et al., 2021), managerial-level employees in Pakistan (Gull & Idress, 2021), managers in India (Cabral & Dhar, 2019), in Cabral and Dhar's (2021) study, Yahya et al. (2022), and Abdelkareem et al. (2024) to support the claims made from the analysis of the results. Without variation, the results arrived at similar conclusions. Guided by AMO's theory and NRBV, this study contributes further to verify this outcome, and it demonstrates that the relationship of the variables tested is statistically significant in a South African context.

6.3.3. Relationship Between Consumer Creativity And Green Competencies

By testing the moderating role of consumer creativity in the relationship between green training and competencies, this study infers that there is a positive relationship between consumer creativity and green competencies. The results from Chapter 5 Table 5.14 indicate a positive and significant relationship between consumer creativity and all the six dimensions of green competencies. This result supports Anggraeni et al.'s (2020) findings showing that more creative students are fluent in their thinking when creating dance movements, display flexibility in their thought processes, and think in elaborative and original ways to create unique moves. In contrast, the students with low creativity had shown difficulty in producing similar spectacles. Thus, it can be established that there is a positive relationship between creativity and abilities.

Creativity has also been shown to be a significant factor in promoting knowledge creation (Yoon et al., 2020), especially as it successfully mediated the role between entrepreneurial leadership and innovative work behaviour (Bagheri et al., 2020). Consumer creativity was also found to promote the existence of practical skills, analytical skills, and creative skills (Sternberg, 2017). The current study does not only validate these previous studies but also contributes by showing that consumer creativity can lead to the six green competencies of knowledge, skills, awareness, abilities, attitudes, and behaviours.

6.3.4. Moderating Role Of Consumer Creativity Between Green Training And Green Competencies

The results from this hypothesis revealed that consumer creativity significantly although negatively moderated in the relationships between green training and the awareness and knowledge dimensions of green competencies. This could either be that those low in the

awareness and knowledge of green competencies may prevent how much creativity assist the green training-competencies relationships. This can be particularly possible because consumer creativity is significantly mediated in the green training-competencies relationships.

From previous studies, like that in India, Joshi and Dhar (2020) found that while there are strong relationships between green training, green creativity, and competencies which they term as green dynamic capabilities, the fostering of these relationships requires green resource commitment. The commitment could be in terms of green materials and equipment for environmental innovation practices, investments in green software and generally sufficient resources for green implementations. Alternatively, and finding out that green competencies mediate in the relationships between green training and creativity, there may be the need for high levels of competencies before creativity moderates the relationship between green training and competencies. Thus, future studies should test the moderating role of green creativity between high and low scorers of green competencies. To the extent that the current study, Joshi and Dhar (2020) Huo et al. (2020), and Ogbeibu et al. (2020) found that green training leads to green creativity, future studies should examine other moderators that translate green training and creativity to green competencies.

Joshi and Dhar (2020, p.3) define green creativity as, "the act of coming up with novel approaches, ideas and actions to develop green competencies and the innovation process converts the novel ideas into economically and environmentally viable businesses and consumer behaviours." Potential predictions of the unanticipated outcome from this study, using the respective sample, could be that creative consumers perceive green training as unimaginative, rigid, and a process that can be innovated. Although understandable, it may lead to the outcome of consumers missing the context of what green training is, forcing them to abandon its principles at the desire to preference imagination over reality and disrupting the learning process to adopt green competencies. It could also be possible that for consumer creativity to be a successful moderator, there is a dependence on the quality and quantity of green training provided. As seen by 2 of the tested items on green training: GT2: Everybody gets the chance to be trained on the importance of 'green' products (2.565), which received the 2nd lowest mean, and GT3: Training on "green" behaviours like recycling, conserving water and electricity are needed (4.609), receiving the 4th highest mean; there is consensus that South

Africa may be lacking in the opportunity to receive some form of quantity and quality green training.

6.4. THEORETICAL AND PRACTICAL / MANAGERIAL CONTRIBUTIONS OF THE STUDY

This study has theoretical and practical/managerial contributions. Practically, and for competitive advantage, efficiency, and acceptable environmental performance, organisations need green competencies from their employees (Cabral & Dhar, 2019; Gull & Idrees, 2022), and from customers for ethical and environmentally concerned buying. For example, green competencies are needed from customers because green marketing has to be accompanied by green purchases of products which are friendly to the environment, to the same degree as green appliances and cars (Le et al., 2022; Yan & Xu, 2010; Dilotsotlh & Duh**,** 2021). This study contributes by revealing how much green training and consumer creativity drive green competencies. Yafi et al. (2021) and Gull and Idrees (2022) found that green training leads to green competencies. This study informs marketing managers of the specific socialisation agents that can best train consumers with green skills. This is particularly important because Le et al. (2022) found that not all socialisation agents adequately train consumers with green competencies. Specifically, the media as they found, does not significantly drive green behaviour. This study has identified that all four of the socialisation agents will make a significant impact so that managers partner with the agents for effective and impactful training. Marketing practitioners can therefore target the relevant channels outlined in this study to align the relationship between humans and nature correctly. The study contributes in providing a better perspective for marketers to develop strategies aimed at educating price sensitive consumers; consumer attention can shift from bargain purchasing to understanding the unique attributes and values of green products such as health, organic, low-carbon emissions, recyclability, eco-friendly, etc (Yan & Xu, 2010). On the other hand, social interest groups can use the results of this study to empower consumers to make informed decisions, by creating innovative and engaging campaigns that target the necessary channels for the purpose of educating the consumer which promotes green competencies. `based on such effective communication strategies, consumer interest groups and environmentalists can advocate for policies to implemented in organisations and schools that supports the education of environmental training and education.

Theoretically, there is a growing trend of research on the green training and competencies of employees through the approach of implementing green human resources management. Literature is limited on these concepts from the consumer and marketing management perspectives. This study is theoretically contributing to the context of consumers by examining whether South African consumers have green training and competencies and how much and which agents are training them into the green competencies. The study also theoretically contributes by enriching the ability–motivation–opportunity theory, from the perspective of all consumers including employees by identifying the socialisation agents that better communicate and train individuals to gain abilities, motivation, and skills for environmental protection. The Natural Resource Based View will also be enriched by this study by exposing the determinants of green training, creativity, and the six green competencies. The explanatory power of the socialisation agents was also tested empirically in the circumstance of green training, thus enriching the study of green consumer behaviour. By borrowing from theories of human resources management and socialisation, consumers' green competencies are explained from an interdisciplinary perspective. Cabral and Dhar's (2019), Gull and Idrees' (2022) and Joshi and Dhar's (2020) models have also been enriched by adding the socialisation theory.

6.5. STUDY LIMITATIONS AND AREAS FOR FURTHER RESEARCH

While this study makes theoretical and practical contributions, like any other research, it has some limitations. The first limitation is the study's survey data collection approach. Although it was an online questionnaire whereby respondents can take their time and provide true answers without the influence of a researcher's presence and it is reported that it may be more robust than face-to-face questionnaires (Cerri, Thøgersen and Testa, 2019), a test of social desirability is needed. For future test of social desirability bias, Cerri et al. (2019) suggest the measuring of respondents' impression management and social approval for the possibility of them answering a socially desirable way. To reduce social bias, Harmans single factor test can be implemented to see whether a set of items can be grouped in a single factor. This is achieved by conducting exploratory factor analysis without rotation, and if no factor receives more than 50% variance extracted, it indicates that there is no social desirability bias (Podsakoff *et al*., 2003). Generally, Ryan et al. (2021) found that respondents in individualistic cultures like South Africa compared to those in collectivist cultures like China are less likely to respond to

surveys in a socially desirable way. Additionally, Vesely and Klockner (2020) and based on data from 29 published papers found that social desirability bias is generally small in environmental and green study research. Lastly, the results obtained should be generalised to the population with caution, if the study were to be replicated with a larger sample size, the results would be more reliable and applicable to a sample population.

6.6. RECOMMENDATIONS

While it was found that consumer creativity may not significantly moderate the relationship between green training and green competencies, the positive and significant hypotheses unearthed in this study possess immense value for advancing both academic literature and societal progress. As it has been statistically reported: individuals who receive green training, and consumers who are creative will adopt green competencies, the active effort and focus therefore, is on utilising the recommended communication agents (i.e., peer, family, media and schools) to disseminate green information so that consumers become green conscious.

The insights presented in this research paper provide the opportunity for environmentalists to design targeted communication campaigns, to collaborate with educational institutions, environmentalists can develop joint initiatives to integrate innovative communication agents in educational curricula. This fosters a culture of sustainability from an early age. They can identify and partner with communication technology firms, or creatives to develop effective communication agents that align with the research findings, aimed to enhance the reach and effectiveness of environmental awareness initiatives, and the results can further assist in creating compelling and interactive social media campaigns. Lastly, environmentalists can use the research findings to design interactive educational materials like mobile apps, online modules, or educational games that incorporate creative elements. These materials can enhance consumer engagement and learning in green training programs.

Consumer interest groups can utilise the research to improve grassroots initiatives by integrating creative communication agents in local workshops, seminars, and events, which can enhance community awareness and participation in sustainability efforts. Consumer interest groups can collaborate with creative artists, designers, or influencers to develop compelling content that aligns with the research's findings. This collaboration can drive wider dissemination of sustainable messages through art and creative expressions.

6.7. CONCLUSION

Adopting the theoretical frameworks of the AMO's theory (Appelbaum et al., 2000), NRBV (Hart, 1995), and the Socialisation theories (Moschis and Churchill, 1978), this study developed an integrated model to examine the effects of the socialisation agents on green training, moderated by the role of green creativity. While current literature has tested several of these relationships, this paper provides a collective interpretation that is distinctive and aimed at examining the effect of the inter-relationships from a consumer perspective.

Regarding the progression of sustainability within society, the insight from this research will help environmentalist and consumer interest groups to more effectively disseminate information through relevant channels with the incorporation of creative influence to assist in the growing initiative of sustainability, providing a pathway towards a more sustainable and conscientious future. The results from the proposed conceptual model produced high exploratory powers, however the contributions from the study can be enhanced by reducing the limitations mentioned in future studies.

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APPENDICES

APPENDIX 1: QUESTIONNAIRE



Dear Sir / Madam

My name is Konstantinos Piperidis, I am a Master's student (737750) at the University of the Witwatersrand, Johannesburg. My supervisor Prof Helen Duh. I am conducting a research study about Social/Green consumer behaviour. The study title is “Communication Agents Impacting Consumer Green Training and Competencies: Moderating Role of Creativity”

I am inviting you to take part in a questionnaire. If you decide to take part, your participation in this research study will last about 5-10min. Completing and submitting the online questionnaire is taken as consent to participate.

With your permission, I would like to compile the data. This data will be stored on a password-protected Mac. Only I (Konstantinos) will have access to the data.

The questionnaire will be confidential and anonymous. When I share the results of the research study, I will not include anything else that could identify you.

Participation in this research study should be because you want to volunteer. You do not have to take part. You can stop being in the study at any time. You do not have to answer any questions if you do not want to. You will not get any direct benefits if you choose to join the research study. You will not lose any services, benefits or rights you would normally have if you decide not to join. Taking part in the research study will not cost you anything. You will not be paid for being in this research study.

The risks for this research study are no more than what happens in everyday life.

This research study will be written up as a research report. The report will be available on the university library website. If you would like to receive a summary of this report, I will be happy to send it to you.

If you have any questions during or afterwards about this research study, feel free to contact me or my supervisor at the details listed below. Suppose you have any concerns or complaints about the ethical procedures of this research study. In that case, you are welcome to contact the University Human Research Ethics Committee (Non-Medical), by telephone: +27(0) 11 717 1408, email hrecnon- medical@wits.ac.za.

Yours sincerely, Konstantinos Georgios Piperidis

Researcher:
Konstantinos, 737750@students.wits.ac.za, 0662664558

Supervisor:
Prof Helen Duh, helen.duh@wits.ac.za, 0117178217

SECTION A

General Information

Please indicate your answer by ticking the appropriate box.

A1 Please indicate your age category

1	18-24	
2	25-34	
3	35-44	
4	45-54	
5	55+	

A2 Please indicate your gender

1	Male	
2	Female	
3	Other	

A3 Indicate your level of study

1	Matric and diploma graduate	
2	Undergraduate	
3	Postgraduate	

A4 Population Group

1	White	
2	Black	
3	Coloured	
4	Indian	
5	Other	

A5 In your opinion, how financially well-off in your household or family are you?

1	Very well-off	
2	Somewhat well-off	
3	Not so well-off	
4	Not well-off at all	

A6 Green training is knowledge and training around the efficient use of resources such as water and electricity, waste (e.g., plastic bags) reduction, energy and electricity conservation, and environmental protection. Have you been exposed to, have knowledge of, or been trained with any of these practices?

If yes, please continue with the questionnaire.

1	Yes	
2	No	

SECTION B

Below are statements about measuring the constructs under study. Please indicate the extent to which you agree or disagree with the statements by ticking the corresponding number on the 5-point scale below:

1=Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree, and 5= Strongly agree

Please tick only one number for each statement

Peer Communication (PC) - Yan and Xu (2010)

PC 1	My friends and peers communicate ideas or exhibit behaviours that are environmentally friendly.	Strongly Disagree	1	2	3	4	5	Strongly Agree
PC 2	I am influenced by my friends' and peers' ideas, or behaviours related to green products purchases.	Strongly Disagree	1	2	3	4	5	Strongly Agree
PC3	My friends and I often talk about the importance of "green" behaviours such as recycling and buying environmentally friendly products.	Strongly Disagree	1	2	3	4	5	Strongly Agree
PC4	I have learnt something about green products and behaviour from friends.	Strongly Disagree	1	2	3	4	5	Strongly Agree

Family Communication (FC) - Yan and Xu (2010)

FC 1	My family/parents do communicate with me regarding "green" behaviours such as buying green products and recy-cling.	Strongly Disagree	1	2	3	4	5	Strongly Agree
FC2	To some extent I have been influenced by the family/parents' opinion about recycling or buying environmentally friendly products.	Strongly Disagree	1	2	3	4	5	Strongly Agree

FC3	I have received communications from my parents/family about the advantage of "green" behaviours.	Strongly Disagree	1	2	3	4	5	Strongly Agree
FC4	I am being influenced by my family/parents to act green by either recycling or carefully using water and electricity.	Strongly Disagree	1	2	3	4	5	Strongly Agree

School Communication (SC) - Yan and Xu (2010)

SC 1	I have heard environment-related topics mentioned/addressed in class	Strongly Disagree	1	2	3	4	5	Strongly Agree
SC 2	Studies have taught me the importance of being involved in environmental-related organisa-tions/groups and behaviours	Strongly Disagree	1	2	3	4	5	Strongly Agree
SC3	Schools often educate on the importance of environmentally friendly behaviors	Strongly Disagree	1	2	3	4	5	Strongly Agree
SC4	There are notices and teachings in schools about the importance of green behaviours	Strongly Disagree	1	2	3	4	5	Strongly Agree

Media Communication (MC) - Yan and Xu (2010)

MC 1	Celebrities and media coverage educate on environmental conservation.	Strongly Disagree	1	2	3	4	5	Strongly Agree
MC 2	Celebrities and media coverage inform and impacts sustainable consumption practices.	Strongly Disagree	1	2	3	4	5	Strongly Agree
MC 3	I am sometimes influenced by media coverage of the importance of environmental conservation	Strongly Disagree	1	2	3	4	5	Strongly Agree
MC4	Print and social media carry messages of the importance of acting green and protection of the environment	Strongly Disagree	1	2	3	4	5	Strongly Agree

Green Training (GT) - Gull and Idress (2022)

GT 1	I am gradually trained to use "green" products such as paper shopping bags and green appliances	Strongly Disagree	1	2	3	4	5	Strongly Agree
GT2	Everybody gets the chance to be trained on the importance of "green" products.	Strongly Disagree	1	2	3	4	5	Strongly Agree
GT3	Training on "green" behaviours like recycling, conserving water and electricity are needed	Strongly Disagree	1	2	3	4	5	Strongly Agree
GT4	I am aware and have learnt something about the importance of green behaviours	Strongly Disagree	1	2	3	4	5	Strongly Agree

Consumer Creativity (CC) - Dangelico, Nonino and Pompei (2021)

CC 1	I am an inventive kind of person.	Strongly Disagree	1	2	3	4	5	Strongly Agree
CC 2	I consider myself to be creative and original in my thinking and behaviour.	Strongly Disagree	1	2	3	4	5	Strongly Agree
CC 3	I enjoy creating and having original and productive ideas.	Strongly Disagree	1	2	3	4	5	Strongly Agree
CC4	I have the ability to come up with innovative ideas of doing things differently.	Strongly Disagree	1	2	3	4	5	Strongly Agree

Green Skills (GS) - Cabral and Dhar (2019)

GS 1	South Africans are provided skills in recycling.	Strongly Disagree	1	2	3	4	5	Strongly Agree
GS 2	Opportunities are being created for skills in energy conservation to be learnt.	Strongly Disagree	1	2	3	4	5	Strongly Agree
GS 3	I have gathered skills in reducing the consumption of water, electricity and other valuable commodities.	Strongly Disagree	1	2	3	4	5	Strongly Agree

GS 4	I have some skills in environmental protection such as properly dumping waste	Strongly Disagree	1	2	3	4	5	Strongly Agree

Green Abilities (GA) - Cabral and Dhar (2019)

GA 1	We are enabled to solve simple to complex environmental problems.	Strongly Disagree	1	2	3	4	5	Strongly Agree
GA 2	South African government helps to find out several solutions for environmental issues.	Strongly Disagree	1	2	3	4	5	Strongly Agree
GA 3	In South Africa, there are platforms that makes us to learn different environmental concepts and green behaviour.	Strongly Disagree	1	2	3	4	5	Strongly Agree
GA 4	I believe that everyone has the ability to utilise the knowledge and skills to solve environmental issues.	Strongly Disagree	1	2	3	4	5	Strongly Agree

Green Attitude (GD) - Cabral and Dhar (2019)

GD 1	It is essential to promote green living from the part of my country.	Strongly Disagree	1	2	3	4	5	Strongly Agree
GD 2	I believe that more environmental protection programs and works are needed.	Strongly Disagree	1	2	3	4	5	Strongly Agree
GD 3	It is very important to raise environmental awareness among the citizens of this country.	Strongly Disagree	1	2	3	4	5	Strongly Agree
GD 4	Environmental protection works are not simply a waste of money and resources.	Strongly Disagree	1	2	3	4	5	Strongly Agree
GD 5	Environmental protection issues are everyone's business.	Strongly Disagree	1	2	3	4	5	Strongly Agree

Green Behaviour (GB) - Cabral and Dhar (2019)

GB 1	We try to learn more about the environment and its issues.	Strongly Disagree	1	2	3	4	5	Strongly Agree
GB 2	All over, ideas are being provided for reducing our impact on the environment.	Strongly Disagree	1	2	3	4	5	Strongly Agree
GB 3	Information and knowledge is being shared all over about the environmental issues and how to protect it	Strongly Disagree	1	2	3	4	5	Strongly Agree
GB 4	Organisations in South Africa have been applying new ideas (e.g., using paper shopping bags) for reducing our impact on the environment.	Strongly Disagree	1	2	3	4	5	Strongly Agree

Green Awareness (GW) - De Silva, Wang, and Kuah (2021, p. 713)

GW 1	I know that green products help conserve resources	Strongly Disagree	1	2	3	4	5	Strongly Agree
GW 2	I am aware that green products reduce waste and promotes recycling	Strongly Disagree	1	2	3	4	5	Strongly Agree
GW 3	I understand that green products reduce pollution	Strongly Disagree	1	2	3	4	5	Strongly Agree
GW 4	I recognise that green products are environmentally friendly	Strongly Disagree	1	2	3	4	5	Strongly Agree

Green Knowledge (GK) - Cabral and Dhar (2019)

GK 1	Producers of green products use less polluting industrial processes and inputs.	Strongly Disagree	1	2	3	4	5	Strongly Agree
GK 2	Green organisations develop green programs, do waste management, and take inventory of pollution sources.	Strongly Disagree	1	2	3	4	5	Strongly Agree
GK3	It is common knowledge that green products help to protect	Strongly Disagree	1	2	3	4	5	Strongly Agree

	the environment, so that future generations do not suffer.							
GK4	The knowledge about protecting the environment and importance of green behaviour is growing	Strongly Disagree	1	2	3	4	5	Strongly Agree

APPENDIX 2: ETHICS CLEARANCE

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

Research Office

HUMAN RESEARCH ETHICS COMMITTEE (NON-MEDICAL)
R14/49 Piperidis

CLEARANCE CERTIFICATE	**PROTOCOL NUMBER: H23/06/37**
PROJECT TITLE	Communication Agents Impacting Consumer Green Training and Competencies: Moderating Role of Creativity
INVESTIGATOR(S)	Mr K Piperidis
SCHOOL/DEPARTMENT	School of Economics and Business Sciences/
DATE CONSIDERED	23 June 2023
DECISION OF THE COMMITTEE	Approved Risk Level: Minimal
EXPIRY DATE	24 July 2026

DATE 25 July 2023 **CHAIRPERSON** _____
(Professor J Watermeyer)

cc: Supervisor : Dr H Duh

DECLARATION OF INVESTIGATOR(S)

To be completed in duplicate and **A SIGNED COPY** returned to the Secretary electronically. Unreported changes to the application may invalidate the clearance given by the HREC (Non-Medical)

I/We fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure be contemplated from the research procedure as approved I/we undertake to submit an amendment of the protocol to the Committee. **I/we agree to completion of a regular progress report. For Minimal and Low Risk studies, this is due annually on 31 December. For Medium and High Risk studies, this is due twice annually on 30 June and 31 December.**

_____ _____/_____/_____
Signature **Date**

PLEASE QUOTE THE PROTOCOL NUMBER ON ALL ENQUIRIES