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UNIVERSITY OF THE
WITWATERSRAND,
JOHANNESBURG

Faculty of Science

Animal, Plant and Environmental Sciences

University of the Witwatersrand, Johannesburg

Master of Science (Coursework & research)

EMPLOYEE SENTIMENTS CONCERNING WORKPLACE GREENING

By

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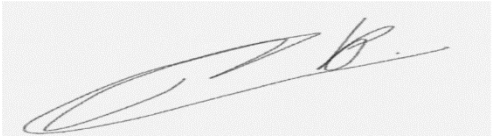
Supervisor: Doctor Raeesa Moolla

A research report submitted to the Faculty of Science, University of the Witwatersrand, Johannesburg, in partial fulfilment of the requirements for the degree of Master of Science.

Signed on 07 September 2023 in Johannesburg.

Declaration

I declare that this thesis is my own, unaided work. It is being submitted for the Degree of Master of Science at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at any other University.

_____  _____

(Signature of candidate)

_____07_____day of___September__2023_____at__Johannesburg_____

Dedication

In memory of my older brother

Mulalo Khorommbi

1988-2021

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It is with deep appreciation that I acknowledge the following individuals, without whom the successful conclusion of this research project would not have been possible:

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Abbreviations

EBI	Environmental Behavioural Intention
NEP	New Ecological Paradigm
OCBE	Organisational Citizenship Behaviour for the Environment
OCBEs	Organisational Citizenship Behaviours for the Environment
PEB	Pro-Environmental Behaviour
TPB	Theory of Planned Behaviour

Abstract

For centuries, people have continuously impacted the environment, resulting in an exponential rise in environmental problems and deterioration. In the quest to find solutions, business organisations have employed or tried to institute greening programmes, such as promoting waste at source and installing solar panels. However, it is essential for people, specifically in occupational settings, to see this as a need - for greening programmes to be effective. To this end, this study aimed to identify the elements that drive individuals to conduct environmentally responsible behaviours at work.

This qualitative study collected data by administering surveys to research participants. Information related to eco-helping, eco-initiatives and eco-civic engagement was collected by administering surveys to local contractors at the PepsiCo site in Kempton Park, Johannesburg. The survey amassed 70 responses during October 2023. The study found that gender was an important indicator of pro-environmental behaviour, and that age affected a person's inclination to act pro-environmentally. As this study relied on proclamations of good environmental intentions from participants, future studies should test this hypothesis in the field to quantify its success.

1 Chapter One: Context and Introduction

1.1 Context for the investigation

According to Williams and Cary (2002), most of the world's environmental issues, such as an increase in waste reaching landfills, are caused by humans' irresponsible environmental behaviour. As a result of the knowledge that most environmental problems in the world are caused by human activity, everyone has a role to play in fixing the current ecological crisis. Hynes and Wilson (2016) examined how to increase knowledge of environmental sustainability challenges and how human behaviour affects the environment. Environmental knowledge can be described as the amount of information individuals have regarding environmental issues and their ability to understand and evaluate the impact of these issues on the environment. In short, environmental knowledge comprises knowledge of both the problem and the impacts of the said problem. The greatest problem posed by environmental issues is developing a strategy to promote sustainable lives and eco-friendly actions.

Given the global scope of climate change, everyone has a role to play in finding solutions; during the first quarter of 2017, there were around 13.5 million workers in South Africa's private sector, including formal and informal sectors, accounting for 82.9% of all employment according to South African Market Insights (2020). Business organisations can assist in protecting the environment by becoming green businesses, in other words, sustainable businesses (Porritt and Winner, 1988). Daft (2008) defines a sustainable business as an economic development that generates wealth and meets the current generation’s needs while saving the environment for future generations. According to Verdiem Corporation (2008), sustainability has become a major focus for businesses because sustainable practices can strengthen reputation, improve employee morale, lead to cost savings, and benefit the environment.

Employees are more likely to act sustainably if they perceive their company is committed to environmental sustainability. Individuals and organisations can reduce environmental harm and improve the environment through direct and indirect environmental behaviour, as reported by Jensen (2002). Direct interventions can be through recycling, and indirect interventions can be in the form of offering advice to colleagues on how to be environmentally friendly whilst at work. If employees are to participate in green initiatives and act in an environmentally responsible manner, they must be aware that their employer has some interest in environmental sustainability.

1.2 Organisational citizenship behaviour for the environment

There is a window of opportunity for South African private business organisations to promote Organisational Citizenship Behaviour for the Environment (OCBE) within their workforce. OCBE refers to actions that employees can take in the workplace, actions that benefit the environment, and actions that are over and above the job that an individual conducts daily. Boiral and Paillé (2012) characterise OCBE as eco-helping, eco-civic involvement, and eco-initiatives; these are distinct pro-environment behaviours seen at work.

According to statistics from environmental literature (i.e., Boiral and Paillé, 2012), OCBE can be conducted by employees in three distinct ways to assist organisations in becoming more environmentally friendly. One of the distinguishing pro-environment behaviours is eco-helping, which includes teaching new employees about environmental policies or assisting co-workers in developing their environmental expertise or knowledge. The other pro-environment behaviour is eco-civic engagement, in which employees can additionally support the company's environmental duties by participating in environmental committees or launching programmes that enhance the company's

reputation. Another option is for employees to take personal environmental actions at work, such as recommending methods to improve energy efficiency or placing recyclables in the correct waste containers. Such actions illustrate the range of environmentally friendly mindsets and routines that formed the basis of this research investigation.

1.3 Scope of the study

The study was undertaken at PepsiCo in Johannesburg, a food production facility. The food production facility operates all week long and has a workforce of 200 people on duty at any given time. Due to PepsiCo's capital investments, the facility regularly has several contractors on site performing various tasks, including providing security services, industrial and specialised cleaning, installing uninterrupted power supply units, rigging, and installing various equipment, and installing new air handling units, to name a few projects. The research participant pool comprised of employees of the various companies conducting work on the PepsiCo site.

1.4 Research aim and objectives

The purpose of this thematic study was to understand the key drivers of employees' environmentally conscious decisions in the workplace. According to Braun and Clarke (2006), thematic analysis refers to identifying patterns or themes within qualitative data. It is essential to understand the drivers of behaviour to effectively alter human behaviour that contributes to environmental problems (Heimlich and Ardoin, 2008; Steg and Vlek, 2009). Consequently, the purpose of this study was to understand the key factors that motivate employees to act in an environmentally friendly manner in the workplace. To achieve this overarching goal, the research aimed to:

a. Assess the relationship between social-demographic factors and pro-environmental behaviour.
b. Determine ways in which employees can contribute towards the greening of the workplace.

1.5 Importance of the research

The dominant focus of existing literature evaluating environmental issues in business organisations has been at the organisational and institutional level (Hart, 1995; Russo and Fouts, 1997; Sharma and Vredenburg, 1998). However, scholars have recently urged a shift in research focus from changing collective organisational behaviour to changing individual behaviour within organisations (Sharma, 2002; Vining and Ebreo, 2002). Particularly, Sharma (2002: 11) noted that “the role of individuals in affecting environmental change in organisations has been under-researched”. As this research paper aims to add to the existing literature, the research focus was, therefore, at the individual level of analysis.

The results of this research study are meant to supplement the existing literature on motivations behind eco-friendly practises in the workplace. When employees are engaged in greening their company, pollution is reduced, environmental management processes are strengthened, and environmental performance is enhanced (Ramus and Killmer, 2007).

1.6 Limitations

The scope of the investigation was restricted due to the limited gathering of data; the study's participants were limited to those who agreed to take part. The research was limited to studying contractors at the PepsiCo factory in Isando, Kempton Park, Johannesburg. The study was also limited to PepsiCo contractors; data was not collected from the wider PepsiCo employee pool due to time and access constraints.

Due to time constraints, the study was limited to participants with a basic understanding of the English language, although in some instances, the interviewer translated questions into Zulu. The data collection

was limited as data was collected once-off; thus, the data represents a snapshot of perceptions at PepsiCo, thus, is limited by time and variability of different organisations and behaviours.

1.7 Structure of the research report

This research paper is structured around six chapters. Chapter One is the introductory chapter, which provides the context and relevance of the study. To understand the study's relevance, background was required. The background provided insight into OCBE, as well as information on the study site. This study was guided by the research aim and objectives available in subsection 1.4.

Chapter Two: Conceptual analysis and review of related research focuses on current methodological approaches in the literature, as well as the main determinants of pro-environmental behaviour as determined by literature. Chapter Three: Methodological approach engages literature regarding the research approach, sampling strategies, data collection and data analysis. Chapter Four engages with the empirical evidence, offering the data collected through surveys; this was done in various ways, including figures and tables.

Chapter Five, titled Data Analysis and Discussion, engages with the data presented in Chapter Four and puts forward crucial deductions and interpretations, demonstrating how the research aims and objectives identified in Chapter One were achieved. Finally, Chapter Six presents the conclusion and recommendations, summarising the study's key findings and offering recommendations, which include some suggested actions that could be incorporated based on the study's conclusions.

2 Chapter Two: Conceptual Analysis and Review of Related Research

2.1 Introduction

According to Nguyen et al. (2021), organisations face a new challenge due to pollution, ecological deterioration, global warming, and other environmental challenges: safeguarding the environment and pursuing environmental sustainability.

Robertson and Barling (2013) assert that businesses can do their part to slow climate change and avert environmental disaster by encouraging employees to recycle, cut down on waste and use fewer disposable items. It was the aim of this study to understand such actions among contractors at the PepsiCo site in Kempton Park. Aboramadan (2020) discovered that employees' eco-friendly actions are crucial to an organisation's green ambitions, and a company's greening efforts can benefit from employee cooperation. Workplace sustainable behaviours, as defined by Tian et al. (2020), are those eco-friendly actions taken by employees to protect and improve the environment while at work.

Different researchers have coined different terms to describe employees' environmentally conscious actions, such as “volunteer workplace green behaviour” (i.e., Kim et al., 2017), “environmentally friendly behaviour” (i.e., Saifulina and Carballo-Penela, 2017), "organisational citizenship behaviour toward the environment" (i.e., Yuriev et al., 2018) and “voluntary pro-environmental behaviour” (i.e., Francoeur et al., 2019). This research paper mostly makes use of the following terms: ‘eco-friendly behaviours’ and ‘pro-environmental behaviours’.

Anwar et al. (2020) state that pro-environmental behaviour (PEB) is any action taken by an individual that helps an organisation achieve long-term success by reducing its negative effect on the natural environment. Employees can reduce negative effect on the environment by cutting down on waste, participating in recycling initiatives and using fewer disposable items. This study collected data related to eco-initiatives (i.e., likelihood to recycle used paper, likelihood of turning off lights in a vacant room) at the PepsiCo site; the findings are further detailed in Chapter Four. Pro-environmental workplace behaviour optimises resource consumption and protects non-renewable resources, like water and power, to save the globe and meet organisational incentives for going green.

2.2 Methodological approaches in the literature

Studies in the field of environmental behaviour research follow different methodological approaches, namely, questionnaires (cross-sectional and panel data), interviews and experiments (field and laboratory), as elaborated in this section. Most studies are based on collecting data through surveys, which have the advantages of low financial costs and relative ease of execution (Kormos and Gifford, 2014). In surveys, research participants are usually asked if or how often they engage in a particular behaviour, ranging from ‘never’ to ‘always’. The number of behaviours used to measure PEB differs from study to study, causing broad heterogeneity in study results. The behaviours can be assigned to different behavioural clusters (e.g., water/energy saving). Stern (2000) summarises that environmentally significant behaviour can be distinguished into four categories: (1) environmental activism (e.g., involvement in organisations); (2) nonactivist behaviours in the public sphere (political behaviours like petitioning); (3) private-sphere environmentalism (household behaviours like water saving, energy use, travelling modes); and (4) other environmentally significant behaviours. Most studies miss identifying the kind/category of behaviour and hint to the fact that the influence of certain determinants and their consequences (in terms of helpfulness possibly gained due to the behaviour) are related to the type of behaviour measured.

Most studies are based on cross-sectional data with clear focuses (specific topic; tailored questionnaire) but lack the dimension of possibility, allowing causal inferences. In contrast, studies based on panel-datasets allow causal links between variables to be established.

In contrast to self-reports, device measurements (e.g., meter readings of electricity), peer-ratings and observations by trained persons are more objective ways of measuring (Kormos & Gifford, 2014). Experiments (Sturm and Weimann, 2006; Osbaldiston and Schott, 2012), which help analyse "cause and effect" by way of their simple (non-complex) design prove to be another efficient PEB-study method. Experiments can, however, be costly and obtaining access or ethics approval can take time. The increasing number of experiments require their own review, like the one done by Sturm and Weimann (2006).

2.3 Theoretical foundations

In their study, Biasutti and Frate (2017) adopted the "New Ecological Paradigm" (NEP) as a means of gauging public concern for environmental issues. According to Dunlap et al. (2000), the NEP also covers subjects like the balance between humankind and nature, human rights in the natural world and self-restraint. The NEP is a crucial component of a person's cognitive structure and ecological worldview, which, in turn, influences their individual beliefs, viewpoints, customs, behavioural intentions and behaviours. The NEP scale has its characteristics from a wide range of socioeconomic and cultural settings; therefore, it stands to reason that they will differ from study to study.

There are five components to NEP:

(1) curbing population growth,

(2) rejecting exceptions,

(3) anti-anthropocentrism,

(4) the potential for ecological collapse, and

(5) the precariousness of nature's equilibrium.

Duarte et al. (2017) investigated how people feel about the environment to understand better what motivates them to take pro-environmental actions. According to Steg and Vlek (2009), it is important to understand the drivers of behaviour to change human behaviour effectively; this was the aim of the current study. Ajzen (1991) argues that behaviour-related attitudes are a crucial predictor as they can both explain and encourage behaviour.

2.4 Determinants of pro-environmental behaviour

A complete understanding of PEB determinants requires consideration of attitudinal (psychological), socio-demographic (personal capabilities), habitual and contextual factors and their interplay. This section identifies and outlines a plethora of PEB determinants.

2.4.1 Environmental knowledge

Knowledge of the environment, as defined by Fryxell and Lo (2003), can explain PEB. Environmental knowledge entails being environmentally conscious and thoroughly familiarising with the facts, concepts and relationships pertaining to the natural environment and its major ecosystems. According to Schahn and Holzer (1990), knowledge of the environment, in its conventional sense, is information about the components and interactions of ecosystems. In 1993, Boerschig and De Young broke down environmental literacy into its components: an awareness of environmental issues, the ability to

formulate and implement strategies to address those issues, and the capacity to act. Jensen (2002) divided environmental knowledge into four categories: the effects of environmental problems, their origins, proposed solutions and the expected environment's connection to humans. Under eco-civic engagement (Chapter Four), this study sought to ascertain the PepsiCo research participants' level of environmental knowledge relating to the company's environmental initiatives. This research report further intended to ascertain the propensity to 'act' in addressing environmental issues.

Studies (i.e., Flamm, 2009; Levine and Strube, 2012) have been conducted to assess environmental literacy on a variety of environmental topics, while broad environmental knowledge is more generally available to the general population. Hence more important to consider, specific environmental knowledge places greater emphasis on accuracy and science and is frequently reserved for experts.

There is a dispute among scholars as to whether environmental knowledge positively influences PEB; Polonsky et al. (2012) state that as consumers increase their knowledge, their attitude toward green products changes, whereas Liu et al. (2020) state that environmental knowledge does not translate into eco-friendly behaviour. It is important to understand whether increasing knowledge, for example, could increase recycling habitats, such as placing waste in the correct waste bins (i.e., waste sorting at source). General ecological knowledge, according to Levine and Strube (2012), is an effective indicator of environmentally friendly conduct. Ogbeide et al. (2015) found that customers who know about environmental issues are more likely to buy products that are good for the environment. On the other hand, Laroche et al. (2002) claim that environmental literacy and ecologically responsible actions are not necessarily linked. Environmental knowledge was not proven to be a significant predictor of PEB in a study by Laroche et al. (2002). Kollmuss and Agyeman (2002) found that environmental knowledge explains just a small proportion of pro-environmental actions. While knowledge alone is no longer sufficient to anticipate behaviour, other psychological obstacles, such as ignorance, apprehension, and distortion, must be surmounted nonetheless (Kaiser et al., 2008).

Scannell and Gifford (2013) assert that environmental knowledge can only motivate pro-environmental action among individuals who care for the environment; whatever progress occurs is largely confined to those already interested in the subject matter. It is, therefore, essential to stimulate interest among those not already interested in environmental issues (i.e., Oreg and Katz-Gerro, 2006; Mostafa, 2007; Liu et al., 2020); environmental knowledge does affect the propensity to act in an environmentally friendly manner.

When considering everyday life, Flamm (2009) and Barber et al. (2009) found that green purchasing decisions are driven by environmental knowledge and environmental attitudes. Paco and Lavrador (2017) proved the impact of attitudes and beliefs, indicating that environmental knowledge alone cannot promote ecologically beneficial behaviour, as de Miranda Coelho et al. (2016) reported. Theoretical frameworks have demonstrated the importance of knowledge in shaping behaviour and attitude, suggesting that information can influence behaviour via altered perspectives. This study aimed to understand better the drivers behind such behaviour and attitudes to further promote environmental consciousness in the workplace through, for example, reducing waste.

2.4.2 Environmental attitudes

Kollmuss and Agyeman (2002) argue that the only method to encourage environmentally friendly behaviour is to change people's environmental values, innate motion, and environmental attitude. According to Laroche et al. (2001), individuals who held favourable opinions are more inclined to purchase energy and resource-saving goods. More pro-environmental customers are more inclined to purchase eco-friendly goods (Malik and Singhal, 2017). According to Turaga et al. (2010), people's

actions can be impacted by various factors, ranging from their aspirations to the pressures they experience from others. Researchers (e.g., Flamm, 2009; Barber et al., 2009) have shown that changing people's perspectives on the environment is the first step towards shifting their actions positively. The aim of this study was to understand the drivers that alter human behaviour, which contribute to environmental problems effectively; it was, therefore, critical to understand the link between environmental attitudes and behaviour.

According to Eagly and Chaiken (1993), an attitude is a favourable or unfavourable judgment of an object, an important element in forecasting action. Because of this, attitude is fundamental for developing hypotheses that aim to explain human behaviour.

Two classic environmental attitudes are used to predict eco-friendly actions:

(1) an attitude toward the environment or a component of it (such as the state of the water); and
(2) an attitude toward eco-friendly behaviours (such as sorting waste, recycling, and usage (Hines et al., 1987).

Attitudes toward the environment are a strong predictor of eco-friendly actions, as reported by Liu et al. (2020). It is, therefore, evident that an organisation can motivate employees to be environmentally friendly by increasing their employee's knowledge and understanding of environmental issues.

2.4.3 Environmental behavioural intentions

According to Moisander (2007), in most instances, behavioural aim is believed to be the origin of behaviour due to its potent stimulating influence on the internal environment. According to Ajzen (1991), the theory of planned behaviour (TPB) asserts that intentions have a substantial indirect effect on several factors that affect behaviour. According to TPB (Ajzen, 1991), intentions are indirectly responsible for anticipating many elements that influence behaviour. Consequently, the presence of intent disrupts the chain of events leading from knowledge of the facts to action. Those who care about the environment are more likely to make purchases that are good for the planet (Aman, 2012; Wang et al., 2014). With a focus on college students, Vicente-Molina et al. (2013) tested the hypothesis that ecological understanding can motivate individuals to care about the environment and act accordingly. Steg and Vlek (2009) and Mostafa's (2007) research suggest that an individual's level of knowledge significantly impacts their inclination and proactivity regarding the purchasing of eco-friendly products. Wyles et al. (2013) suggested that exposing tourists to marine conservation efforts through activities like visiting aquariums and distributing conservation information can have a major impact. Therefore, organisations must understand how their operations impact the natural environment, how the impact can be eliminated or reduced and provide training and information to their employees. As demonstrated above, ecological understanding can motivate individuals to care for the environment and act in the best interest of the environment.

According to Yadav and Pathak (2016), the TPB encourages young customers to choose organic products. Wan et al. (2012) also noted that all TPB components, notably attitudes, beneficially impact college students' propensity to recycle. The results of Yadav and Pathak's (2016) study indicate the applicability of the TPB in predicting eco-friendly purchasing intentions, with attitudes substantially impacting such intentions. According to Untaru et al. (2014), tourists' environmental sentiments can be used as an accurate predictor of whether they will engage in environmentally responsible actions while on vacation.

According to Untaru et al. (2014), as a leading predictor of action, intentions play an important part in the dynamic interplay amongst attitudes, perceived behaviour control, subjective norms, and

environmentally friendly actions. According to Kaiser and Gutscher (2003), an individual's environmental behavioural intention (EBI) can be understood as their degree of propensity to participate in the observed environmental activity. EBI is either substantially or modestly correlated with PEB (Diekmann and Franzen, 1995).

2.4.4 The impact of age

Literature is divided on whether increasing age relates to more environmentally conscious behaviour. For instance, O'Connor et al. (1999) found that the elderly is more inclined to support government action to counteract global warming. Semenza et al. (2008), in contrast, found that elderly people are more inclined to back government action at the local level and less likely to engage in personal, voluntary activity. This study aimed to determine the relationship between social-demographic factors regarding PEB.

Although most repercussions are modest, older persons are more likely to engage in PEBs, as indicated by a meta-analysis conducted by Hertel et al. (2013).

2.4.5 Gender

Liu et al. (2020) state that women are more concerned about environmental degradation than men, which is due largely to women's greater environmental awareness. According to Kennedy and Dzialo (2015), females, when educated, have a more positive outlook on the environment than males. According to Kennedy and Dzialo (2015), most research reveals that women are more environmentally conscious and display more positive behaviour than men.

2.4.6 The impact of education

According to several studies (i.e., Ferrara and Missios, 2005; Zahran et al., 2006; Shao et al., 2017), higher levels of education increase the likelihood that people will recycle, take voluntary activities to combat climate change and its effects and cut their energy use. According to Lewis et al. (2019), a positive correlation between education and eco-friendly behaviour is not always present. Higher education levels are associated with reduced water use and overall personal consumption, as shown by Smiley et al. (2022). The current study aimed to determine whether an increased education level led to an increased pro-environmental stance.

However, there is a caveat to these findings suggesting a positive relationship between education and environmental actions: if a person's increased scientific knowledge leads them to hold anti-scientific beliefs (such as dismissing the evidence of climate change), their level of education may lead them to be less environmentally friendly (Shao et al., 2014).

2.5 Pride and guilt

According to Harth et al. (2013), pride and emotion have been explored as possible explanations for PEB. According to Tangney et al. (2007), pride and guilt are distinct emotional concepts accompanied by various physiological and neurological processes, as well as self-aware psychological feelings. People sense pride and guilt when they understand they are accountable for their activities (Lewis, 2008). Soscia (2007) asserted that people feel pride and guilt when they accept responsibility for their actions. As a strategy to increase/motivate employees, business owners should investigate taping into these two emotions to increase participation in the workplace. One objective of the current study was to determine the key drivers of behaviour.

In a related study, Tangney et al. (2007) revealed that when people reflect on their feelings about meeting or failing to meet a responsibility, they experience a range of internalised moral emotions,

including pride and guilt. According to Shipley and van Riper (2022), a person's PEBs and willingness to participate in PEBs positively correlate with a strong sense that they should safeguard the environment. In contrast, if the same individual did not behave in an environmentally beneficial manner, they would feel bad and cease harming the environment.

Adams et al. (2020) suggested that the connection between experienced guilt and PEB may be even more robust than the connection between experienced pride and PEB. This is because experiencing guilt stimulates behaviour by signalling that something is wrong and needs to be addressed immediately. Furthermore, Lewis (2008) asserted that pride can result from habits that promote complacency rather than increased involvement, but it can also stimulate a desire to make future changes. According to Schneider et al. (2017), in the same way that pride can push people to act in a way that is good for them, remorse can lead them to stop doing the things that are bad for the environment. In keeping with prior research, Shipley and van Riper (2022) discovered that pride exhibited a bigger influence on PEB than guilt.

Bissing-Olson et al. (2016) revealed no statistical correlation between pride and PEB. Most studies employed paradigms that elicited predicted emotional states, but few investigations elicited experienced or reactive emotional states. As Mohr et al. (2012) asserted, anticipatory guilt develops when a person frets about an impending negative experience, while Cotte et al. (2005) proclaimed that experienced guilt comes when a bad outcome occurs because of a person's actions. Baumgartner et al. (2008) stated that expected emotions, instead of anticipating one's actual emotional reaction, are accurate projections of one's future emotional state based on estimates of how one would feel in the future as opposed to how one will feel following an experience.

2.6 Obstacles preventing environmental beliefs from being acted upon

Whilst it is important to study drivers of PEBs, it is equally important to ascertain the obstacles that can prevent intentions from becoming actions. Limitations brought on by external factors, like a scarcity of environmentally friendly options or public transportation and cultural issues, have been cited in the literature (i.e., Eom et al., 2016; Nguyen et al., 2019) as reasons why people's actions don't match their pro-environmental sentiments. However, although environmental consciousness is theoretically possible due to contextual circumstances, in practice, humans rarely act appropriately (Kollmuss and Agyeman, 2002).

According to Farjam et al. (2019), it has also been argued for a long time that people will participate in environmentally friendly behaviours if they judge the expense to be negligible. When this is taken into consideration, as Barr (2007) states, it should not come as a surprise that some attitudes have been proven to predict "low-cost" environmental activities, such as recycling, but are less successful at predicting "high cost" behaviours, like reducing one's use of a car or aeroplane (i.e., Alcock et al., 2017). Steg and Vlek (2019) proclaim that people are more inclined to make environmentally conscious purchases if they believe their actions will significantly impact the environment. For instance, if people are put in a situation where they must choose between driving a car or riding a bicycle, they may consider whether the cost of forgoing the comfort of riding in an automobile is worth it in comparison to the value that riding a bicycle contributes to the overall health of the environment.

According to Camilleri et al. (2019), empirical statistics show that people greatly underrate the environmental impact of their actions and that addressing these misconceptions through simple consumer labelling reduces the selection of high-emission products. If the potential environmental damage caused by consumer goods is made more transparent and its miscalculation is corrected, people may be less likely to purchase them.

Liu et al. (2020) reported that when environmental damage in a residential region is severe, residents will be encouraged to convert EBI to PEB. To motivate increased PEB, citizens must be alerted of the significance of present environmental concerns.

2.7 Conclusion

Although the contextualization of the present literature in this research revealed a remarkable increase of PEB studies in mostly highly developed nations, there is little knowledge of how these factors affect PEB in the developing world, notably Africa.

3 Chapter Three: Methodological Approach

3.1 Research approach

According to Denzin and Lincoln (2005), a research methodology or strategy is determined by the nature of the research question and the subject being investigated. As a result, the research arrangement used in an investigation should be seen as a tool to answer the research question.

The principal objective of this study was to understand the drivers of workplace environmental behaviour. This was achieved using a survey. Questions regarding organisational citizenship behaviour were adopted from the framework developed by Stritch and Christensen (2016). Questions on affective commitment were adopted from Allen and Meyer (1990). Different types of surveys, as well as interviews and experiments, are used to study environmental behaviour. According to Kormos and Gifford (2014), surveys are still widely used because of their low monetary costs and ease of implementation in research.

Surveys are generally presented in the form of questions. The questions can be asked in the present tense (as in, "How often do you..."), in the past tense (as in, "How long has it been since...") or in the past tense without a specific time frame. Lange et al. (2018) state that self-report assessments to evaluate PEB characteristics have been met with scepticism due to their apparent lack of reliability. Self-report evaluation can assess a wide range of behavioural characteristics, including PEB engagement, habit frequency and eco-friendliness. To be considered a valid PEB measure, the responses elicited from respondents must be congruent with the characteristics of the behaviour being measured.

According to Montello and Sutton (2006), the study design affects the research questions addressed and the complexity of the interactions examined. Methods from the qualitative research tradition were utilised in the current study. A qualitative study is appropriate when the goal of the research is to explain a phenomenon by relying on the perception of a person's experience in each situation (Stake, 2010). As outlined by Creswell (2003), a quantitative approach is appropriate when a researcher seeks to understand relationships between variables. Because the purpose of the current study was to understand key drivers of PEB at the PepsiCo site, a qualitative approach was the most appropriate choice.

SIS International Research (2019) states that qualitative research is often more exploratory and requires collecting verbal, behavioural or observational data that may be subjectively evaluated. One drawback of this strategy is that it depends on the knowledge of the researchers engaged. Due to the subjective nature of qualitative research, it is extremely hard to reproduce the findings.

The current study utilised thematic analysis to identify themes. Braun and Clarke (2006) provide a six-phase guide for conducting a thematic analysis. Step 1: become familiar with the data; Step 2: generate initial codes; Step 3: search for themes; Step 4: review themes; Step 5: define themes; Step 6: write up. It is essential to understand the drivers of behaviour to effectively alter human behaviour that contributes to environmental problems (Steg and Vlek, 2009). The researcher endeavoured to respond to the research questions. The main aim of this study was to understand the drivers of PEB in the workplace, and this study sought to build a theory to answer the following research questions.

RQ1: What is the relationship between social-demographic factors and PEB?
RQ2: What are some of the ways in which employees can contribute towards the greening of the workplace?

3.2 Sampling strategy

According to Collis and Hussey (2009), many different sampling techniques can be used to draw a targeted sample from a population. Simple random sampling was employed to find survey participants for the current study. Simple random sampling is the most fundamental type of probability sampling, according to Collis and Hussey (2009).

The sample was drawn from a population of employees at the PepsiCo site in Kempton Park in Johannesburg. The sample group worked in cleaning, construction and security, and were working full-time and part-time. There was no age limitation. The criteria used to sample was to be on the PepsiCo site and not directly employed by PepsiCo.

Convenience sampling, a non-probability technique, was employed to enlist participants in this investigation. According to Whitley Jnr. (2002), the probability that a participant will be selected to engage in research is uncertain with non-probability sampling.

Employees of various companies working at PepsiCo made up the survey's respondent pool. A random selection technique was used to choose the participants, and the term "sample" describes the subset of the population used to draw conclusions about the whole. Research participants took part in the survey in October 2022. The researcher initially anticipated approximately 150 to 200 participants for this study; the final number of participants was 70, as determined by saturation.

3.3 Ethical considerations

When research involves human participants, there is a need for ethical considerations to be incorporated (Kimmel, 2007). Ethics, according to Mautherner et al. (2002), are described as being the ethical guidelines or process of attaining ethical approval from relevant academic or professional bodies before one begins collecting data.

Kimmel (2007) argues that ethical clearance is mandatory in research, and research cannot be conducted without ethics clearance. An ethical clearance application was submitted to the University of the Witwatersrand ethics committee before data collection commenced. The approved application generated ethical clearance number GAES-0922-01 (Appendix D).

A researcher must establish trust with the participants to guarantee that no harm shall come to the participants (Edwards and Holland, 2013). Therefore, participation in the current study was consensual through completing a consent form (Appendix G) to confirm that participants agreed to the terms of their participation. The consent form allowed for anonymity and confidentiality to be confirmed. The data collection process was handled with sensitivity and care to avoid dire consequences.

3.4 Data collection

This study used a survey method to collect data from research participants. The study sought to conceptualise the phenomenon of each participant's experience, to understand in abstract terms built through evaluating responses provided through the survey, and build a theory based on the interpretation of their shared experiences.

The study was undertaken at PepsiCo in Johannesburg, a food production facility. PepsiCo was contacted by email and phone, and the study's goals and rationale were discussed to negotiate access to the facility and access to potential research participants. Research participants were recruited by consulting the supervisors of the different companies conducting work at PepsiCo. The researcher explained the purpose of the research and time required, and the supervisor then advised on the suitable

participants based on availability. The supervisor spoke to the potential participants and gauged their willingness to take part in the survey.

All participants were prompted to indicate whether they intended to complete the survey. The distribution of questionnaires occurred in October 2022. Before taking the survey, the study's purpose, methodology and design were explained to the participants, who were then asked to sign the consent form (Appendix G) indicating their understanding of these aspects of the research. Even though all questionnaires were in English, the researcher needed to translate some of the questions into Zulu verbally. On average, participants spent five minutes answering the survey's questions.

The major data collection instrument was a questionnaire (Appendix A, B and C) consisting of 27 items (questions), and the researcher's laptop computer was the primary data collection instrument. It became evident during data collection that most participants did not have access to a laptop or an email address, so the research participants accessed the survey using the researcher's laptop. Data was collected Monday through Friday between 08:00 and 17:00 in a private room at the PepsiCo site.

The survey was operated on Qualtrics, an online platform that allows researchers to create and distribute surveys to potential participants. Using questions in Appendix A, B and C, the data collection range was built on a scale of 1 to 3: (1) was unlikely, (2) was possible, and (3) was very likely. The scale assisted the researcher in analysing the results from the data collected.

3.5 Data analysis

Researchers often only administer survey questions to a small subset of the whole population. Fleetwood (2018) states that a survey tool is selected based on how well it meets the criteria of being practical and affordable.

The researcher located a vacant room by the main security desk at the research site. At various times during October 2022, the research participants were invited into a room to take the survey, which was available on Qualtrics.

After collecting data and reaching a point of saturation, the researcher used the process of filtering data. Filtering is the process of comparing a list of records to specific criteria and concealing the items that do not match the criterion. Data filtering assisted the researcher in answering the research questions, as well as the aims and objectives of the research paper. For example, data filtering can prompt Qualtrics to only display responses from a specific age group and specific gender, thus assisting in answering the research questions.

To further elaborate on the analysis, the data was analysed using the thematic content analysis method. This method of data analysis is the most used in qualitative research; it is focused on finding mutual patterns across the data set (Maguire and Delahunt, 2017). As guided by Maguire and Delahunt (2017), data analysis was done in a series of steps: familiarising with the data, coding the text, searching for expansive themes, reviewing the identified themes to see that they correlate with the data, defining and naming the themes, and finally concluding with write up.

The question of reliability and validity is crucial to the academic value of a study. Without consideration of these factors, one would conclude that the study is simply aiming in one direction and never achieving its objective. Validity relates to the veracity of whether we are measuring what we plan to measure, i.e., how well our concept corresponds to reality. According to Ahmed and Ishtiaq (2021), reliability relates to consistency, which means that we are performing our study so that the data is created under the same conditions throughout the entire process and can be replicated by other researchers with comparable

results. The current study endeavoured to ensure all participants had the same experience regarding the set-up of the room and assistance offered by the researcher.

3.6 Methodological reflections

The study was conducted in Johannesburg in South Africa, the study was limited to the collection of data at PepsiCo. One of the study's limitations was the inability to add questions during the survey period; for uniformity, no questions were added once the data collection process had commenced to ensure all participants were asked the same questions. An interview would have been beneficial to probe certain responses from the research participants.

People are not objective observers of their behaviour; they may desire their reaction to be in line with their past behaviours, their ideal selves' actions, or the researcher's preferences and expectations. Individuals are not impartial witnesses of their activities; future studies must arrange to account for the reality that individuals are not objective observers of their behaviour.

4 Chapter Four: Empirical Evidence

4.1 Introduction

Pro-environmental actions are essential for tackling pollution problems and promoting sustainable development (De Groot and Steg, 2010). Vicente-Molina et al. (2018) indicated that a person's gender, urban versus rural residence, region and education level may impact their PEBs. To determine the key drivers of PEB in the workplace, this study investigated social dynamic factors that could impact the propensity to act environmentally friendly.

4.2 Socio-dynamic factors

This section of the findings describes the major themes influencing the inclination to act environmentally friendly in the workplace: age, gender, race and education.

4.2.1 Age

Hertel et al. (2013) showed that an individual's age affects their propensity to act sustainably while at work. The age of research participants was inquired about as part of the survey, as one of the key objectives of this study was to determine whether socio-dynamic factors affect PEB in the workplace. Most participants were between 25 and 34 years old, followed closely by the 35 to 44 age group (Figure 1)

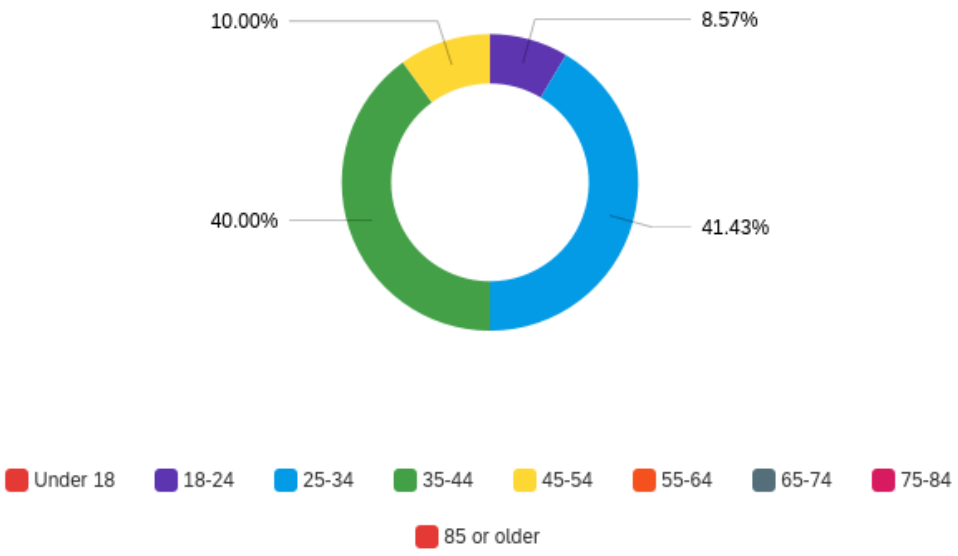


Figure 1: Age distribution of study participants

4.2.2 Gender

According to Liu et al. (2020), no correlation exists between an increase in environmental consciousness and a rise in eco-friendly aspirations and behaviour. In contrast, Mostafa (2007) stated that environmental consciousness is the best predictor of PEB. In their study, Laroche et al. (2002) found no direct relationship between environmental knowledge and PEB. Kollmuss and Agyeman (2002) also state that environmental knowledge alone does not result in more environmentally conscious attitudes and behaviours. Perhaps, in addition to environmental consciousness, gender plays a role a mediating role in translating knowledge into action.

According to the findings of Liu et al. (2020), environmental literacy has a greater positive impact on women's attitudes toward the natural world than on men's attitudes. Levine and Strube (2012) found that women are more likely than men to be concerned about environmental destruction. The current study's population was 71.43% males and 28.57% females, indicating that most of the study cohorts were males.

4.2.3 Race

According to Ellis and Korzenny (2012), ethnicity affects a person's propensity to act sustainably. Black people comprised 81.43% of the participants, with white people accounting for 8.57% (Table 1). Notably, 2.86% of participants did not reveal their ethnicity.

Table 1: Racial distribution among research participants

What is your race?

Field	Percentage
Black	81.43%
White	8.57%
Indian	1.43%
Colored	5.71%
Other	2.86%

4.2.4 Education

Those with a college education are more likely to practice conservation strategies like limiting their water usage and overall consumption (Smiley et al., 2022). Participants in the current study reveal their highest level of education – 90% stated that they had up to a matriculation certificate, while the remaining 10% held a bachelor's degree. None of the research participants held any degrees higher than a bachelor's degree. According to Franzen and Meyer (2010), education usually affects environmental concerns by increasing knowledge about environmental issues.

4.3 Three forms of Organisational Citizenship Behaviour for the Environment

Boiral and Paillé (2012) characterise distinct PEBs that can be seen at work, such as eco-civic engagement, eco-helping and eco-initiatives. OCBEs are discretionary behaviours performed by employees whereby they demonstrate their willingness to cooperate with their organisation and its members by performing behaviours in the workplace that benefit the natural environment.

4.3.1 Eco-civic engagement

Employee involvement in green initiatives (eco-civic engagement), such as joining green committees or taking positive action to enhance the organisation's reputation, is another way to reinforce the organisation's dedication to the environment.

As discussed in Chapter 3, the three forms of OCBE related to the questionnaires were adapted from Stritch and Christensen (2016). Most participants were very likely to engage in eco-civic activities (Table 2), 91.43% of the participants stated that they take environmental measures that enhance the company's reputation.

Table 2: Eco-civic engagement of participants

Question 1.1 - Eco-civic Engagement (Please rate the level of likelihood)

Field	Unlikely	Sometimes	Very Likely
Regularly, I take part in my company's environmental activities.	5.71%	17.14%	77.14%
I am up to date on the company's green efforts.	5.71%	7.14%	87.14%
I take environmental measures that enhance my company's reputation.	2.86%	5.71%	91.43%
In my group, I take part in environmental service projects, endeavors, and events.	5.71%	18.57%	75.71%

4.3.2 Eco-helping and eco-initiatives

In the context of organisational citizenship behaviour for the environment, employees can take part in OCBEs assisting their companies in becoming more environmentally friendly. According to Boiral and Paillé (2012), employees can accomplish this goal in a few ways: first, employees can help their organisations become more environmentally friendly by providing mutual support to their peers through eco-help. For instance, workers can educate newly hired employees about environmental best practices or assist their colleagues in expanding their environmental knowledge and skills. The current research aimed to determine if this was the case at PepsiCo. Secondly, employees can also conduct individual green actions (eco-initiatives) at work, including suggesting ways to increase energy efficiency or properly dispose of recyclable goods.

Table 3: Eco-helping engagement of participants

Question 1.2 - Eco-Helping (Please rate the level of likelihood)

Field	Unlikely	Sometimes	Very Likely
I think it's important for people to share their perspectives on environmental issues with one another.	4.29%	15.71%	80.00%
I try to influence the other people at work to be more eco-friendly.	1.43%	17.14%	81.43%
In my group, I take on environmental issues through participating in initiatives, endeavors, and events.	5.71%	18.57%	75.71%

Most participants were very likely to engage in eco-helping activities (Table 3), 81.43% of the participants stated that they try to influence other people at work to be more eco-friendly. The overwhelming majority of participants (77.14%) stated they were more inclined to switch off the lights in an empty room. The highest percentage on the "unlikely range" related to using common appliances rather than personal appliances (Table 4). Considering the impacts of the Covid-19 pandemic and associated hygiene practices, only 20% of the participants claimed they were unlikely to use common appliances in the workplace. Future research may examine how load-shedding, or cyclic electrical interruptions, affects eco-friendly behaviour.

Table 4: Eco-initiatives findings

Field	Unlikely	Sometimes	Very Likely
Recycle all used paper	2.86%	37.14%	60.00%
Recycle all plastic bottles and aluminum cans	2.90%	30.43%	66.67%
Consume drinks from reusable containers (communal cups)	18.57%	11.43%	70.00%
Switch off your computer monitor	8.57%	35.71%	55.71%
Offer to share your workspace or downsize your workspace	14.49%	43.48%	42.03%
Print on the paper's back and front	5.71%	25.71%	68.57%
Use common appliances rather than personal appliances	20.00%	17.14%	62.86%
In vacant rooms, turn off the lights	2.86%	20.00%	77.14%

4.4 Affective commitment

Affective commitment describes a person's emotional investment in and dedication to their organisation. Therefore, employees with high affective attachment to their workplace do so voluntarily. Happier workers, according to Biga et al. (2012), are more likely to be environmentally conscious on the job, despite a lack of data to support this assertion.

According to Paillé and Boiral (2013), there is a lack of research on how contentment in one's profession affects their pro-environmental actions on the job. Despite the lack of evidence, according to research by Endrejat and Kauffeld (2018), positive workplace attitudes directly correlate with PEB.

Most (88.57%) of the research participants stated that their current organisation has much personal significance. Also, most (77.14%) participants said they would be delighted to continue working for their current organisation for the rest of their careers, while 85.71% of participants stated that they felt like a family member at work, and 74.29% stated that the organisation's problems were their own. Interestingly, almost half (48.57%) of participants thought it was likely that they would become linked to another organisation.

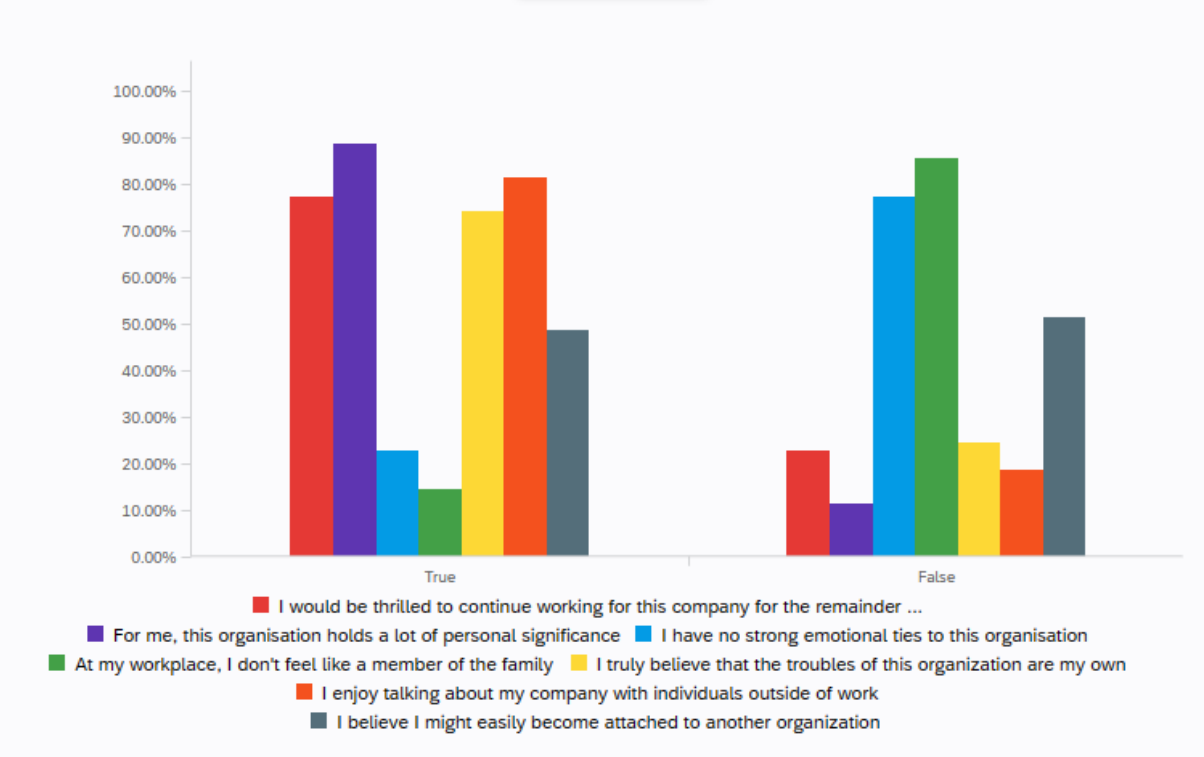


Figure 2: Organisational affective commitment findings

4.5 Employee's perceptions of the organisation

Studies show that employees' sense of workplace belonging directly impacts their job happiness, as Organ et al. (2006) reported. According to Paillé and Boiral (2013), there is a lack of research on how contentment in one's profession affects pro-environmental actions while on the job. Generally, most of the research participants had a favourable impression of their organisation in terms of its environmental consciousness (Table 5). Research conducted by Organ et al. (2006) indicated that employee job satisfaction and organisational citizenship are positively associated; thus, happy employees are more pro-environment.

Table 5: How participants perceive their current organisation

Field	Unlikely	Sometimes	Very Likely
The organisation supports environmentally sound concepts and considers the wise use of natural resources	0.00%	20.00%	80.00%
The organisation has rules to track and measure its active efforts to reduce its environmental and carbon footprint	4.29%	18.57%	77.14%
The company manages its effects on the environment as part of its routine business operations	4.29%	14.29%	81.43%
The company practises sustainable resource management for energy and other resources	4.29%	14.29%	81.43%
Employees can engage in eco-friendly activities at work, like recycling and using office space sustainably	1.43%	17.14%	81.43%

4.6 Conclusion

This study investigated the key drivers of workplace PEB. Previously scholars (e.g., Ellis and Korzenny, 2012; Hertel et al., 2013; Smiley et al., 2022) have indicated that social demographic factors can impact the propensity to act environmentally friendly.

In this study, participants generally had a positive assessment of their organisation's environmental consciousness, which is consistent with the idea that employees need to perceive their employer as caring about environmental sustainability if they were to take part in green initiatives and act responsibly. The study reached a point of saturation rapidly; as such, it was difficult to establish whether participants with a university degree would have a higher level of limiting overall consumption versus participants with a matric qualification. The study's point of saturation also affected the ability of the study to determine the relationship between ethnicity and PEB.

5 Chapter Five: Analysis and Discussion

5.1 Introduction

This section demonstrates how the study's objectives were accomplished. The study objectives were accomplished through the processes of data analysis and discussion. During these processes, conclusions were drawn about the study based on the collected data and afterwards categorised to answer the research questions. To answer the research questions (a) assess the relationship between social-demographic factors and pro-environmental behaviour and (b) determine ways in which employees can contribute towards the greening of the workplace, data was filtered against certain parameters. The study's objectives and aims were also addressed by the interpretations drawn from the data.

5.2 Background of the study

According to Wynes and Nicholas (2017), human behaviour is often recognised as a major contributor to environmental problems such as pollution, anthropogenic climate change and the loss of biodiversity; hence it is imperative to recognise and correct these behaviours.

The study's overarching objective was to ascertain the variables most responsible for shaping workers' attitudes toward environmental sustainability programmes on the job. Thus, the purpose of this study was to evaluate the prevalent attitudes toward greening the workplace held by employees and to identify the primary drivers of environmentally conscious behaviours displayed in the workplace.

In survey research, some feasible possibilities include recruiting participants, collecting data and using various tools. Permission was granted to utilise PepsiCo premises as a research site. According to Check and Schutte (2012), a sequence of questions is posed to a representative sample of individuals in surveys to collect data, and thus a questionnaire was utilised in the data collection process for this investigation.

It is possible to utilise quantitative and qualitative research methods in survey research; in the former case, researchers use questionnaires containing numerically evaluated items, while in the latter case, researchers use open-ended questions. Because of its usefulness in describing and investigating human behaviour, as well as the low costs associated, survey research was utilised in this project, utilising a quantitative approach.

5.3 Summary of Findings

5.3.1 Organisational affective commitment

According to a review by Organ et al. (2006), there is a favourable correlation between employee job satisfaction and organisational citizenship. The results of this study corroborate the findings of Organ et al. (2006), as 88.57% of participants in this study sensed a strong impression of personal relevance with their place of employment, whereas 11.43% sensed no such connection. While 85.71% of participants indicated they viewed their workplace as a family, 74.29% of research participants said they felt personally accountable for the organisation's challenges. These results imply that employees with a high sense of duty may feel more accountable and responsible for a company's green activities.

5.3.2 The impact of gender (eco-helping)

The responses of men and women were separated from the data-by-data filtering. Filtered results indicated that 71.66% of female research participants were likely to provide eco-helping (i.e., the inclination to influence other people at work to be more eco-friendly) in the workplace, whilst 82.00% of male research participants were likely to provide eco-helping in the workplace. These findings dispute the findings of Kennedy and Dzialo (2015) who argued that women engage in environmental programmes more than males.

5.3.3 Impact of gender (eco-civic engagement)

Eco-civic engagement refers to the support that employees provide to companies by participating in workplace environmental programmes. Under eco-civic engagement, 87.50% of females that participated in the survey reported that they would likely participate in eco-civic engagements such as taking part in environmental matters by participating in initiatives (e.g., recycling campaigns). The study found that males were 81.00% more likely to participate in eco-civic engagement. Duchene (2011) hypothesised that this finding might be partly because women reported taking more pro-environmental actions daily, such as recycling and water saving; however, this may be influenced by the roles that females play in managing households.

The study's data indicated that only 60.82% of females were more likely to engage in eco-initiatives, such as recycling used paper and switching off lights in a vacant room, whilst 63.66% of males were likely to participate in eco-initiatives. PepsiCo has colour-coded bins strategically placed throughout the facility to encourage waste recycling and separation at the source. The site also utilised motion sensor lights, but certain areas still used manual switches to operate lights.

The tallying of the data obtained during data collection revealed that when taking into consideration eco-civic engagement, eco-helping and eco-initiatives, 73.32% of female participants and 75.55% of male participants were more likely to participate in OCBEs in the workplace, implying that gender does impact one's propensity to act in a pro-environment manner in the workplace. These findings dispute those of Kennedy and Dzialo (2015) who claim that women engage in environmental programmes more than males. One of the reasons for this finding might be due to social transformation in South Africa, as both males and females have equal access to education and work opportunities. This finding requires an in-depth analysis. As described in Chapter Four, there were also a substantial number of male participants in the study.

5.3.4 Impact of age

Relations between age and pro-environmental workplace behaviours were discovered using data filtering on the Qualtrics platform. Hertel et al. (2013) discovered that most impacts of age and PEBs are small, even though older people are more likely to engage in PEBs. Despite the vast age range of the participants, the 25 to 34 and 35 to 44 age groups were the two largest demographics in the study: 83.62% and 83.93%, respectively. According to the research findings filtered by age, people in the 35 to 44 age range were more likely to participate in eco-civic engagement. Examples of eco-civic engagement in the PepsiCo site include placing recyclable items in the correct waste bins. The 35 to 44 age group had an 88.09% likelihood of conducting workplace eco-helping, such as influencing other people at work to be more environmentally friendly (the 25 to 34 age group indicated only a 75.86% likelihood), and a 60.76% likelihood of engaging in workplace eco-initiatives, such as recycling used paper (the 25 to 34 age group indicated 62.07% likelihood). When comparing the percentages for each age group under the three types of workplaces OCBEs (eco-civic engagement, eco-helping and eco-initiatives), 77.59% of the 35 to 44 age group and 73.85% of the 25-34 age group were likely to participate in OCBEs. This study found that older people are more likely to engage in workplace pro-environment behaviours, maintaining the conclusions of other studies (i.e., O'Connor et al., 1999; Hertel et al., 2013).

This study found that 75.17% of the 25 to 34 age group were happy with their company, whilst 90.51% of the 35 to 44 age group were happy with their company. An explanation could be that South Africa has a severe youth unemployment problem (Statistics South Africa, 2019) and that the research participants were primarily low-paid workers who work jobs like construction, cleaning and security. The nature of these jobs may be the cause of the 25 to 34 age group's lower level of happiness, while

the 35 to 44 age group participants are content with their employment amidst their lack of education and advancing age.

Relating to organisational affective commitment, 64.28% of participants aged 35 to 44 and 56.07% of participants aged 25 to 34 reported feeling a strong sense of loyalty to the company they worked for. The study results indicate that happy employees are more likely to be pro-environment, in line with the findings of Organ et al. (2006), who stated that employee job satisfaction and organisational citizenship are positively associated.

A plateau was achieved in the number of participants willing to contribute to the study and offer data; for future research to succeed, it will be necessary to enlist a much larger sample of people to draw conclusions about the relationship between education and environmental awareness. Future research may also consider how other conditions, such as load shedding and water shortages, affect people's willingness to act sustainably.

5.4 Summary

The drivers of behaviour must be understood to alter human behaviour contributing to environmental problems effectively. Based on this research, PEB is determined by an interplay of socio-demographic, attitudinal, habitual and contextual factors, which differ in their intensity. Age and education were found to be reliable indicators of pro-environmental concern by Van Liere and Dunlap (1980). Ellis and Korzenny (2012) discovered a correlation between stated PEB and ethnicity.

6 Chapter Six: Conclusion and Recommendations

6.1 Introduction

This study set out to identify the factors that contribute most to environmental awareness in the workplace. Human activity is responsible for a large proportion of the world's present environmental problems. Companies employ millions of individuals globally, placing them in cubicles or other workgroups where their collective actions could be shaped by management. While many businesses are taking steps to reduce their environmental impact, such as installing solar panels and implementing water conservation measures, these efforts can be undermined if staff members fail to report leaks, leave lights on, and otherwise squander resources. Therefore, it is essential to investigate the aspects that can be improved in the quest to boost worker participation in workplace green initiatives.

When considering the broad environmental sustainability field, it is important to consider the linkage between sentiments and environmental sustainability. As detailed in Chapter One individuals and organisations can reduce environmental harm and improve the environment through direct and indirect environmental behaviour, as reported by Jensen (2002). As detailed in Chapter Two theoretical frameworks have demonstrated the importance of knowledge in shaping behaviour and attitude, suggesting that information can influence behaviour via altered perspectives.

6.2 Limitations of the study

There are certain restrictions to the current study, notwithstanding its merits. More research is needed to determine how environmental variability affects PEB consistency, as Whitmarsh and O'Neill (2010) did. This study also had limitations, including not investigating ways to mitigate the negative effects of unstable work environments. The study primarily focused on employee attitudes and did not examine greening strategies implemented by businesses, such as automatic lighting or sensor lights.

The study also suffered from the fact that the behavioural measure relied on intentions rather than actual behaviour when assessing morality, considering the three forms of OCBEs; one of the questions under eco-helping states that ‘I try to influence the other people at work to be more eco-friendly’; a query of this nature does not inquire about actual previous behaviour. The main forces behind PEB were well identified by this study, yet it may be exaggerated to say that these forces encourage PEB in other workplace settings.

6.3 Findings of the study

Although there is evidence connecting present-day purposeful behaviour with future PEB, Ajzen (1991) claims that this behaviour could only be anticipated to a limited extent. A field experiment that measures actual environmental behaviour, rather than participants’ stated intentions to do so, is recommended for future studies that seek to investigate the key elements of PEB.

It is essential for building managers and other office management stakeholders to recognise that employee happiness has a direct effect on their tendency to participate in environmentally friendly projects. As stated in Chapter One, Organ et al. (2006) showed that employees’ sense of belonging to their workplaces directly impacted their job happiness.

Communication that emphasises the future repercussions of unsustainable behaviours, as described by Gardner and Stern (2002), has been found to be unsuccessful. One approach could be to ground the message in the “here and now”, highlighting the immediate value of PEB rather than its long-term significance. According to van der Wal et al. (2018), positive reinforcement, such as praise or rewards,

could go a long way toward encouraging long-term sustainability, especially in times of stress and doubt.

According to Johnson et al. (2004), education increases PEB (e.g., recycling, joining an environmental group), and educated people are more aware and more concerned with social welfare. As this study's sample size was limited, this research could not draw any firm conclusions on the relationship between education and the likelihood that people will engage in environmentally friendly behaviour on the job. Future investigations must increase the sample size.

Although not substantially, age did affect a person's inclination to be environmentally conscious, according to this study, which indicated that older people are more inclined to engage in workplace PEBs.

Men and women differ significantly in PEB (Eisler et al., 2003). Women exhibit higher PEB than men (Lynn and Longhi, 2011; Longhi, 2013), a difference which has been confirmed across nations (Hunter et al., 2004). When Ifegbesan et al. (2002) studied six African nations, they discovered that female respondents had higher PEB mean scores than male respondents. According to the findings of the current study, gender does impact a person's inclination to be environmentally conscious.

An association between ethnicity and PEB were not shown in this study. Larger sample sizes may be helpful in future research to gain a more in-depth, holistic view of participant behaviours in the workplace.

6.4 Conclusion

The study set out to establish the key determinants of PEB in the workplace. The results suggest that future research be undertaken in the field and not by measuring stated intentions; the study revealed that the highest responses were intended actions rather than responses on previous tasks performed.

In contrast to the findings of Kennedy and Dzialo (2015), the current study found that males are more likely to conduct workplace environmentally friendly practices.

In the context of increasing employee involvement in green initiatives in the workplace, workplace programmes and initiatives must find a way to target females, as previous studies (i.e., Kennedy and Dzialo, 2015) have shown that females are likely to be environmentally friendly, whilst special attention should be given towards males to increase their propensity to be environmentally friendly. O'Connor et al. (1999) found that elderly people were more inclined to support action to counteract global warming but also found that the elderly are less likely to engage in personal, voluntary activity. Depending on the organisation's objectives, workplace environmental programmes could focus on specific age groups.

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APPENDIXES

Appendix A: Three forms of organisational citizenship behaviour

Appendix B: Affective commitment

Appendix C: Employee perception of organisation

Appendix D: Ethics clearance certificate

Appendix E: Permission to conduct research

Appendix F: Participant information sheet

Appendix G: Example of signed consent form

Appendix A: Three forms of organisational citizenship behaviour

Eco-Helping	Eco-civic Engagement	Eco-Initiatives
(a) I spontaneously give my time to help my colleagues take the environment into everything they do at work (b) I encourage my colleagues to adopt more environmentally conscious behaviour (c) I encourage my colleagues to express their ideas and opinions on environmental issues	(a) I actively participate in environmental events sponsored by my organization (b) I stay informed of my company's environmental initiatives (c) I undertake environmental actions that contribute positively to the image of my organization (d) I volunteer for projects, endeavours, or events that address environmental issues in my organization	

Eco-initiatives Index		
How likely are you to do the following while at work	**Very Unlikely**	**Very Likely**
Recycle all paper waste	1	7
Recycle all aluminium cans or plastic bottles	1	7
Use reusable bottles or cups for beverages	1	7
Turn off your computer monitor	1	7
Volunteer to have a smaller workspace or share your workspace	1	7
Print on both sides of the paper	1	7
Use common appliances as opposed to personal appliances	1	7
Turn off lights in empty rooms	1	7
Minimum and maximum totals (range) Scale reliability coefficient=.71	1	7

Three forms of OCBE research questions were adopted from Stritch and Christensen (2016)

Appendix B: Affective commitment

	Disagree	**Agree**
I would be very happy to spend the rest of my career with this organisation	1	7
This organisation has a great deal of personal meaning for me	1	7
I do not feel emotionally attached to this organisation	1	7
I don't feel like part of the family at my organisation	1	7
I really feel as if this organisation's problems are my own	1	7
I enjoy discussing my organisation with people outside	1	7
I think that I could easily become attached to another organisation	1	7
Minimum and maximum totals (range) Scale reliability coefficient=.71	1	7

Affective commitment research questions were adapted from Allen and Meyer (1990)

Appendix C: Employee perception of organisation

Rate statements in importance		
	Disagree	**Agree**
The organisation subscribes to environmentally sustainable ideas and considers the sustainable use of natural resources	1	7
The organisation actively contributes to reducing their environmental and carbon footprint and has policies to monitor and measure there	1	7
The organisation manages its impacts on the natural environment as part of its regular business processes	1	7
The organisation manages energy and other resources in a sustainable manner	1	7
The working environment of employees allows for green initiatives such as recycling, the sustainable use of office space and the like	1	7
Minimum and maximum totals (range) Scale reliability coefficient=.71	1	7

Appendix D: Ethics clearance certificate

UNIVERSITY OF THE WITWATERSRAND JOHANNESBURG

SCHOOL OF GEOGRAPHY, ARCHAEOLOGY AND ENVIRONMENTAL STUDIES

ETHICS COMMITTEE

CONSTITUTED UNDER THE UNIVERSITY HUMAN RESEARCH ETHICS COMMITTEE (NON-MEDICAL)

ETHICS CLEARANCE CERTIFICATE

PROTOCOL NUMBER: GAES-0922-01

PROJECT TITLE
Employee sentiments concerning workplace greening

INVESTIGATOR
Phumudzo Khorommbi

SCHOOL/DEPARTMENT OF INVESTIGATOR GEOGRAPHY, ARCHAEOLOGY AND ENVIRONMENTAL STUDIES

DATE CONSIDERED
19 SEPTEMBER 2022

DECISION OF THE COMMITTEE Approved unconditionally

EXPIRY DATE
On submission of project report for final assessment

ISSUE DATE OF CERTIFICATE 19 OCTOBER 2022 **CHAIRPERSON** _____

(DR ALEX WAFER)

cc: Supervisor : DR Raeesa Moolla

DECLARATION OF INVESTIGATOR

To be completed in duplicate and **ONE COPY** returned to the Chairperson of the School/Department ethics committee.

I fully understand the conditions under which I am are authorized to carry out the abovementioned research and I guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee.

_____ **Signature**

Date 25/10/2022

PLEASE QUOTE THE PROTOCOL NUMBER ON ALL ENQUIRIES

Appendix E: Permission to conduct research

PERMISSION TO CONDUCT RESEARCH

19 May 2022

Dear Ethics Committee:

The purpose of this letter is to inform you that I give *Phumudzo Khorommbi* (student number 1104657) permission to conduct the research titled *Employee Sentiments towards Corporate Greening* at the Simba/PepsiCo premises in Isando, Kempton Park, Johannesburg. We give *Phumudzo Khorommbi* permission to conduct a survey among contractors within the 2022 calendar year.

Kind regards

Phineas Moraswi

Project Manager
Projects Team
Phineas.Moraswi@pepsico.com
066 483 5661

SP Moraswi
19/05/2022

Simba (Pty) Ltd/PepsiCo | Andre Greyvensteyn | Isando | Gauteng | South Africa | 1600

Appendix F: Participant information sheet



Participant Information Sheet (PIS)

Good day

My name is Phumudzo Khorommbi. I am a Masters student in Interdisciplinary Global Climate Change Studies at the University of the Witwatersrand, Johannesburg. My supervisor is Dr Raeesa Moolla. I am conducting a research study about the key drivers of pro-environmental behaviours in the workplace. The study title is Employee Sentiments Toward Workplace Greening.

I am inviting you to take part in answering an electronically transmitted questionnaire. If you decide to take part, your participation in this research study will last about 15 minutes. The research activity will take place at Simba/PepsiCo, Spartan, Kempton Park, 1619, South Africa at 10h00 to 16h00 as soon as ethics clearance from Wits university is obtained.

With your permission, I would like to send you the research survey via email. This data will be stored in my password protected personal laptop for 5 years. Only me as the researcher will have access to the data.

During the research activity, I will need to ask for some personal information about you, including how often you recycle waste material.

The survey will be confidential and anonymous. When I share the results of the research study, I will not include your name or anything else that could identify you. With your permission, other researchers may use the data collected from this research study, but your name and any personal information will not be used or passed on.

If you decide to take part in the research study, it 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 cost you data; an email address and internet connection will be required. You will not be paid for being in this research study. Your data costs to respond to the survey will not be reimbursed.

The risks for this research study are no more than what happens in everyday life. OR Some of the questions asked may make you feel sad or upset. If this happens, you can stop the survey and continue another time.

This research study will be written up as a research report. 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 on the details listed below. If you have any concerns or complaints about the ethical procedures of this research study, you are welcome to contact the University Human Research Ethics Committee (Non-Medical), telephone +27(0) 11 717 1408, email hrecnon-medical@wits.ac.za.

Yours sincerely,

Phumudzo Khorommbi

Researcher:

Phumudzo Khorommbi, 1104657@students.wits.ac.za , 082 76 77 626

Supervisor:

Dr. Raeesa Moolla, Raeesa.Moolla@wits.ac.za , 011 717 6522

Appendix G: Example of blank consent form

Consent Form

Research Title: Employee Sentiments Concerning Workplace Greening

Researcher: Phumudzo Khorommbi

I, ……., agree to participate in this research project.

I agree to the following:

(Please circle the relevant options below)

The research study was explained to me. I understand what this study is about.	YES	NO
I understand that I can volunteer to take part in the study	YES	NO
I agree that my participation will remain anonymous (my name will not be used by the researcher in their research report)	YES	NO
I agree that other researchers may use the information I provide in my survey (depending on their own ethics clearance being obtained) but my name and any personal information will not be used or passed on	YES	NO

…… (signature)
…… (name of participant)
…… (date)

…… (signature)
…… (name of researcher/person seeking consent)
…… (date)