

**Developing an eco-friendly strategy via the use of QR  
codes and a smartphone application.**

**A thesis submitted in accordance with the requirements of  
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By

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## **ABSTRACT**

The DBA Thesis writing engages an active inquiry and troubleshooting of a wicked problem to devise a meaningful managerial solution. The author of the present DBA Thesis, acting as both a scholar and a practitioner, embarked on a knowledge action trip in tackling Coffee Island's large-scale foe, its pollution generating activities. Over the last few years, various groups, mainly governmental and environmental ones, have attacked Coffee Island for acting as a carbon dioxide generator in the Athenian and Greek natural environment.

The author realised the magnitude of the problem and its evolution. During its initial stages, Coffee Island did not use much plastic, glass, or other metals. However, due to subsequent heavy expansion, a lot of garbage, and gas was generated to create and deliver coffee, beverages, confectioneries, and the like. In this critical action research intervention, an innovative and actionable proposal has been made on how to reverse the damage, caused and work out of this industrial problem. Managers can benefit from the problem-solving technique offered by critical action learning and thinking.

The author has developed two coping mechanisms for cessation of pollution caused by Coffee Island. These two mechanisms heavily support recycling of Coffee Island's goods via a green recycling smartphone application and QR scanning before and after recycling. The efficacy of the proposed two solutions is disclosed mainly in Study 1 and Study 2 of the present paper. Specific assumptions, terms, and conditions must be met to motivate Coffee Island customers to download, start using, and continue actively using the smartphone application and QR scanning.

Finally, a general framework has been designed to solve the specific wicked problem of Coffee Island's pollution creation, which can be extended and adapted/adopted by other managers. Scaling the problem to cater to individual organisation is something that goes without saying. Yet, the algorithm of tracking down the problem, discussing it with stakeholders, and actively engaging all participating parties in it to find a win-win solution is paramount in modern 2020 managerial efforts. Critical action learning can most definitely help Coffee Island become more eco-friendly, using a recycling smartphone application, alongside recycling via QR scanning. Other firms can learn from this overall mega-project. The author was able to solve the problem through an integrated critical action learning practice. To be more specific, initially, the problem

of soil, air, and water pollution was identified, and Coffee Island was named its cause. Subsequently, such an acrimonious challenge had to be dealt with the utmost care; hence, specific actions for tracking down specific, measurable, and efficient solutions were proposed. The result of the thesis is that through the implementation of a smartphone recycling application and QR scanning recycling, Coffee Island will empower its internal and external customers to engage and participate actively in its recycling effort. Reducing pollution takes two to tango. Even if Coffee Island does its best to promote ecofriendly approaches, it would not mean anything if its customers do not engage in it. Study 1 and Study 2 of the present thesis revealed that customers would be motivated if they are rewarded with coffee, confectioneries, and vouchers. Similarly, if a famous NBA athlete participates in endorsing the project, it would boost the customers' morale. Other means of motivation can be social media sharing, promoting, and subscriptions to Coffee Island's Youtube channel. The final step was to enhance and actively favour Youtube videos that would educate and depict real-life recycling efforts by ordinary Coffee Island customers. The research methods included Study 1, quantitative research analysis of a sample of 300 electronic questionnaires, out of which 270 were answered, and Study 2, which entailed four qualitative interviews.

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## **Declaration of Own Work**

I declare that the thesis has been composed by myself and that the work is my own. The work has not been submitted for any other degree or professional qualification. All quoted sources have been acknowledged.

Lampros Kaitatzis

Date: 31 January 2020

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## **ABBREVIATIONS**

3G	Third Generation of Mobile Telecommunications
CAL	Critical Action Learning
CSR	Corporate Social Responsibility
DBA	Doctorate in Business Administration
eWOM	Electronic Word of Mouth
IKEA	Ingvar Kamprad Elmtaryd Agunnaryd [Furniture Multinational Chain]
IT	Information Technology
LR	Literature Review
MSP	Multi-Stakeholder Parternship
NBA	National Basketball Association [USA Professional Basketball League]
NGO	Non-Governmental Organisation
NYPD	New York Police Department
QR	Quick Response
R&D	Research and Development
RAM	Random Access Memory [Storage Space of a Smartphone Mobile Phone]
SMART	Specific Measurable Attainable Relevant Time-Based [Managerial acronym for organisational business goals]
SME	Small and Medium Enterprise
TV	Television

UNISEF	United Nation's Children's Fund
USA	United States of America
USB	Universal Serial Bus
WiFi	Wireless Fidelity

## **CHAPTER 1: Introduction**

### **1.0 A brief background**

This first chapter introduces and preludes what is to come about Coffee Island's DBA Thesis. More specifically, the author has adopted an interventionist approach on how Coffee Island can cope with the problem of pollution it generates via modern technology. This approach proposed recycling smartphone application and QR scanning when a customer disposes of her garbage in a designated Coffee Island recycling hot spot. The idea of recycling is not new; yet, the real innovation lies in the process of recycling. As the research shall unfold, the whole process immensely benefited from the accountability gained from engaging customers via the above-mentioned technological tools. This thesis aims to determine to what extent Coffee Island can reverse the negative externalities caused by its pollution by implementing a smartphone recycling application and QR scanning recycling. Such an implementation demands the simultaneous cooperation of its internal and external customers, so both Study 1 and Study 2 were conducted to figure out the willingness and ability of its customers, and the four interviewed experts to embrace and promote the proposed critical action intervention. The action-oriented approach followed the typical Critical Action Learning (CAL) method while identifying the problem, asking stakeholders what can be done, creating a problem-solving algorithm (i.e., the smartphone application and QR scanning), and debugging the application and scanning to make them more meaningful and continuous.

### **1.1 Nature of the organisation**

The company was found in the city of Patras (Peloponisos, Greece) in 1999. Nowadays, it has 256 retail shops, which cater fine coffee to its customers. Coffee Island sells fine Canephora Robusta and Arabica coffee (black or blends), confectioneries, and savoury snacks. Sixty are privately owned assets of the company, while the others are operated under a franchising scheme. Initially, the whole concept was to expand as a privately owned company, but the franchising system was deemed more efficient in the process. Also, 15 privately owned shops only service other businesses, namely large-scale supermarkets in Greece. It currently holds many prestigious awards in terms of coffee quality (i.e., 2019 Best Coffee Chain in Southern Europe) and its business growth (i.e., 2020 Grand Ermis Award in the

Branding & Design Category). There are 456 coffee grinders around Greece which sell excellent quality coffee. Delivery and/or takeaway options are offered to customers as well. The firm has started going international (i.e., Cyprus firstly and 2009 in Dubai and Canada). Part of its vision is to expand even more, following the footsteps of other coffee retail giants. More than 2,000 employees work for Coffee Island as baristas, delivery personnel, cleaning staff, etc.

The author is hired in Coffee Island as the West Greece General Manager. The company has created a geographical managerial segmentation, breaking down Greece into territories. The role of the West Greece General Manager is not merely to delegate authority and responsibility and only to deal with strategic planning and execution. On the contrary, based on the principles of Critical Action Learning, he has become a scholar-practitioner. Having a genuine interest in Corporate Social Responsibility and a keen eye on modern technology, he proposed the current intervention. Government officials, whistle-blowers, NGOs, and the media accused the firm of polluting the natural environment from time to time. Internal social audits revealed that Coffee Island could improve in the specific field, so immediate action was taken. As a scholar-practitioner, the author analysed the existing literature and took a hands-on approach on physically moving from one location to another, viewing the extent of debris, clutter, and pollution Coffee Island was generating. The general principle about the author's position is to actively engage in a situation in which something deviates from the initial goal. In its mission statement (Coffee Island, 2020), Coffee Island actively promotes socially responsible business activity. Since discrepancies were tracked down, modifications and corrective actions were needed.

Engaging stakeholders is also vital. Furthermore, the author decided to use a stakeholder analysis, using a Big Picture approach, and engage in the Critical Action Learning four steps method. The four steps were the following: problem analysis, action planning and implementation, reflection and evaluation, and final decisions. Unfortunately, due to unforeseen external major forces (Covid-19 crisis), the project will not be fully materialized until the crisis fades away. Some employees work from home, and others are working in shifts, socially distanced of course. Yet again, the Critical Action Learning method dictates a small lag in the implementation of the project. Due to its contactless nature (digital application, scanning from a distance) can be easily applied. Stakeholders interviewed (called Experts in the thesis) were



audited as a pre-test to this mega-intervention based on the benefits of Critical Action Learning.

## **1.2 Overview of the present thesis**

Green marketing is a term gaining a lot of popularity over the past few years since poor manly operations are directly causing global warming, excessive carbon dioxide emissions, and tsunamis. 'Green marketing has moved from a trend to a way of doing business and that businesses should recognize the value of going green and incorporating this message into their marketing programme and communicating the green concept to their consumers' (Selvakumar et al., 2019, p. 274).

Firms create products, yet many of their byproducts and waste end up in the oceans and animals' natural habitats. Coffee Island, in particular, creates a lot of plastic cups, coffee beverages, and of course, consumes tons of gasoline to distribute its coffee and various drinks to customers. It goes without saying that the firm is responsible for a part of the overall planet's pollution. Besides governmental control and heavy pollution fines, public scrutiny has led the author to find a meaningful and efficient solution to this problem by implementing a Critical Action Learning strategy.

To find a meaningful intervention, the author used modern technological achievements as the basic premise to actively engage Coffee Island's customers in pollution reduction and, more specifically, recycling. Customers should not be far from the problem but become part of its solution. As with most wicked problems, a stakeholder analysis revealed that the problem could be solved with their help and intervention. Educating them about why recycling was necessary, how it would affect them, and using which means they could recycle was also necessary alongside. At the same time, Coffee Island and the author of the present thesis are firm believers that the company should go to any possible lengths to facilitate the overall intervention and foster conditions that will reduce pollution. Different departments, such as Information Technology, Marketing, and Finance, are doing their best to accomplish the proposed intervention as fast as possible. Through meta-analysis, they have developed a new Critical Action Learning problem-solving loop to see how effectively they can reverse this negative situation.

The title of the thesis, '*Developing an eco-friendly strategy via the use of QR codes and a smartphone application*', discloses that Coffee Island wishes to embark on a

different path than before and lead its way through 2020 onwards towards an eco-friendly marketing strategy. Such a strategy can be pursued via QR codes (QR scanning of recyclable items) and, of course, the much-discussed smartphone application. Reciprocity of effort exists in this paper, both from the firm and its customers/potential users of the application and QR scanning. One party will be helping the other through active and honest effort, offering useful technological apparatuses, providing feedback on troubleshooting, and mitigating negative situations. They will be promoting recycling on social media, sharing online content amongst friends, etc. to spread awareness.

The basic parts of investigation and research questions in the present thesis, stemming from the DBA's Research Proposal submitted by the author, are following:

*a) How many customers will be willing and able to use the smartphone application and QR code scanning consistently for the purpose of reducing pollution generated by my firm?*

The other two subsequent questions based on the first one (which is the key one) are:

*b) What specific actions will be taken in collaboration with users/customers' proposals to reduce pollution? (Users/customers will be interviewed through the e-questionnaire) and,*

*c) Which factors will actively influence customers' decision to participate in the QR codes/smartphone application e-marketing?*

Based on the author's Research Proposal, a given/constant condition that Coffee Island is polluting the environment was set. Moreover, since the author acted as a scholar-practitioner, he decided to embark on the above-mentioned questions and after a thorough stakeholder analysis. More specifically, about question a) on how many customers will be willing and able to use the application and QR scanning, it made eminent sense because without their participation and education on reversing the situation, the whole programme cannot succeed. Reynolds and Vince (2004) wrote that 'as educators, we should be placing a good deal more emphasis on educational approaches that can be applied to the workplace and informal learning' (p. 443). Indeed, educating existing customers and motivating them to use the specific application and QR scanning is vital. After all, Critical Action Learning requires those

being part of a problem to become part of the solution. As they are familiar with the situation, once they are motivated and well-informed on the topic, they are highly likely to react positively. Thus, question b) is justified by the stakeholder's analysis, which requires an active stance from all involved parties in polluting. About the third question, Warwick, McCray, and Board (2017, p. 105) clearly stated that 'action learning is the development of people through activity, usually a task that is important to the participant in an organisational setting'. In the author's case, the importance of recycling via the two proposed methods is deemed paramount since, without motivation, there is no point in the whole intervention. Moreover, Warwick, McCray, and Board (2017, p. 105) wrote that Critical Action Learning is 'an ongoing activity of exploration combining given or accepted knowledge with contextual learning'. The basic premise about question c) is that participants will be actively engaged in the intervention if they are first informed about its existence and subsequently its benefits (i.e., by demonstrating how much carbon dioxide was not emitted to the atmosphere). Question a) is answered through Study 1 (e-questionnaires), which is analytically discussed in Chapter 5. The number of customers willing and able to use the smartphone application and QR scanning is significant. Many users are required to make the project feasible and worth investing in. About the second research question, Study 1 and Study 2 revealed specific actions which can be taken in collaboration with users and Coffee Island to promote the intervention. These comprise motivational tools (i.e., vouchers), active engagement in recycling videos, walkthroughs in recycling premises, and getting the smartphone application endorsed by a famous NBA player. The final question c) goes along with some of the notions already mentioned in question b). It proves that using motivational and behavioural factors and the transparency of actions can lead more people to download and frequently use the green smartphone application and recycle through QR scanning items.

### **1.3 Impetus of the author to construct the present thesis, and his aspirations about it**

A basic impetus for creating the present thesis was the author's exposure to an extensive and interesting presentation of the myriads of Critical Action Learning theories during his academic career. The business environment is turbulent, volatile,

and a manager must be flexible in finding solutions to wicked problems. Moreover, technology tends to reduce labour and overhead costs, and at the same time, reach millions of new prospects. So, given that pollution is generated by Coffee Island, and thousands of Greeks already own fast 3G or faster smartphones, the author decided to make customers of Coffee Island a part of the solution. It is easy to see a problem but easier to see it as a challenge. For example, since pollution is already a constant, the users can readily observe on their screens the extent of the issue, and through guidance offered by the organisation try to alleviate it. Of course, moral and practical support shall be given to reward and further promote the critical action intervention. Finally, the author asserts that although technology created pollution initially, technology can also control it. After all, Critical Action Learning requires actions coming from stakeholders' standpoints, not from a single direction. Such an approach requires 'an emphasis upon a process, a commitment to research contributing and giving back to community collaborators, and a recognition of the power of knowledge produced in collaboration and action'(Cerecer et al., 2013, p. 218).

#### **1.4 Desired outcomes of the present DBA Thesis**

A primary desired outcome is finding out how many actual paying customers of Coffee Island are interested in downloading the designated smartphone recycling application and starting QR scanning when recycling. Furthermore, the interest lies in their doing so not on an erratic timeline but instead on a frequent and ideally daily basis. Another desired outcome discussed heavily in Study 2 is how stakeholders (i.e., four experts) saw the efforts of Coffee Island. This study tries to understand if they believe these efforts to be true or merely greenwashing attempts –attempts to lie to the public of being a green company when in reality the firm does not care and/or do anything or too little about protecting the environment.

So, the harsh reality of creating pollution and how it can be resolved by intervention with two pillars, the customers and a recycling smartphone application and QR scanning, has been extensively elaborated. Moreover, the literature review (Chapter 2), interviews with four experts (Study 2), and 270 completed e-questionnaires (Study 1) cumulatively lead to the knowledge creation that customers will be willing and able to help resolve the specific problem if certain terms and conditions are met. Some positive outcomes to the industrial problem can be found by motivating customers,

offering them transparency and engagement in the problem, and allowing them to intervene, comment, provide online feedback and referrals. Of course, the findings of the present thesis are scalable to other industries and managers, provided they are adjusted, adapted, and scaled to each organisation. They can be a starting point of finding a solution to a dispute via conducting an extensive stakeholder analysis and making the creators of a problem a part of its solution.

### **1.5 Arrangement of next chapters – Bridging introduction with the main body of the thesis**

The second chapter illustrates an extensive literature review, on both green marketing and its various definitions, alongside modern technological achievements using a smartphone and, more specifically, a smartphone application and QR scanning. The literature review revealed that not many firms engage in combining the two (at least till the time the literature review was initially written). For Coffee Island, it is a tremendous opportunity to mix the pros of green marketing with the two proposed technological achievements to alter its old polluting image and make its customers active participants in the solution rather than mere observers of the whole process.

The third chapter describes the methodology of the current DBA Thesis. It explains why specific methods – four open-ended qualitative interviews with practitioners and 300 sent e-questionnaires to loyal Coffee Island customers – were chosen as a suitable means for bringing new insight to the research. The fourth chapter analytically describes the third Critical Action Learning Cycle, through which specific measures were decided based on the literature review findings and pure managerial intuition.

Chapter 4 presents the four qualitative interviews with the four experts (Study 2). Some of the answers are quite interesting about how to solve the recycling issue for Coffee Island. Chapter 5 discusses the 300 sent e-questionnaires and the feedback of them (270 were answered). Findings are shown in pie charts. Chapter 6 writes about the practicalities of how to use the proposed green smartphone application and recycling through QR scanning. This chapter also mentions Action Research in the business environment and how Coffee Island can benefit from it when applying it to its current problem. Success comes via customers downloading the application and using it continuously, as much as possible. Chapter 6 mentions pre-commitment alongside making the application a passive transaction (i.e., via monthly goal-setting,

reminders, etc.). Hence, it becomes second nature for its users and prospective ones. Chapter 6 offers an overall discussion of the contribution of the DBA Thesis to Critical Action Learning. It discusses future research potentiality within the realm of green marketing and the two proposed ways of achieving better and more motivated customers. Lastly, chapter 6 remarks on the limitations of the DBA Thesis. They may have stemmed from the scalability of the findings to other Coffee Island locations in other countries (i.e., Cyprus). Since the whole research was conducted in Athens, Greece, some of the results might not suit other cultures, business conditions, and consumer behaviour.

Finally, chapter 7 is the conclusion of this Doctoral Thesis. It presents the study results, its Critical Action Learning trip, and most importantly, the learnings that the author, along with Coffee Island, has learnt utilising Critical Action Learning and Critical Action Research tools and mechanics. More specifically, the author has learnt to appreciate the great benefits of looking holistically into a problem and reversing a situation by engaging all stakeholders into the issue and working out a meaningful solution. At the same time, feedback on results and recycling efficiency on how recycling using the smartphone application and QR scanning tools made the author stay alert on taking corrective actions. This also helped him repeat the necessary parts of the learning cycle.

## **CHAPTER 2: Literature Review**

### **2.0 Introduction to the literature review**

The present literature review is focused on the key concepts of *Quick Response (QR) scanning, green marketing, corporate social responsibility, green consumer, etc.* related to the main issue of the thesis – the integration of green marketing strategies and their implementation in combination with the application of technology. Green marketing could play a key role in firms' corporate social responsibility (CSR), as it emphasises firms should not only take care of their bottom line, that is, financial profits, but also should look into the effects their actions are having on society and the environment. For instance, a firm might wish to produce capital goods to maximise its profits. In doing so, it must respect people and local communities which might be affected by excessive waste, noise pollution, carbon emissions, etc. The two most important tools used in the present thesis are QR scanning, which requires customers to scan items they purchase and/or recycle, and a smartphone application, which helps them keep accountable to the project and the research. This application makes them aware of the extent of the effort and effectiveness of the project. Firms produce goods and services to satisfy human needs. Yet, during their production process, they create a lot of by-products that create negative externalities of production and consumption. When corporations create a good, that is, a fast-moving consumer good, plastic, wood, and metal are used. These materials end up producing more litter for the environment. Skouloudis et al. (2017, p. 1575) clearly wrote that 'the reduction in environmental quality can alter and discredit the intrinsic characteristics of a distinct locale and stigmatize the overall image, reputation and identity of the area'.

The role of the manager is to reduce some negative externalities, adopt a more ethically correct approach, as well as create value for his/her firm by doing so. According to Ranjan and Kushwaha (2017), green marketing is defined as any attempt to create a product by the free market in the least environmentally invasive way. Ranjan and Kushwaha (2017, p. 11) also mentioned that there are several definitions, but they cannot be summarised to form one concrete definition that describes green marketing as a strategy focusing on informing consumers about the environmental friendliness of the products they are about to buy and allowing them to make informed choices on the level of pollution they will create and the impact they will have.

The author's motivation pertains to his passion for business excellence, and a mutual and meaningful combination of business profits and environmental, social responsibility. Coffee Island was under fire due to its pollution-creating attributes. Through the author's Critical Action Learning mentality, a solution had to be found.

## 2.1 Green marketing

Every firm operating in the world economy utilises and exploits resources. Unfortunately, due to the production procedure, many by-products are created, which pollute the environment. Globally, the concern for the negative impact of pollution is growing, and firms, as well as consumers, are held accountable for their actions.

The present study employs Action Research to explore the chosen firm Coffee Island's activities relating to environmental pollution. In doing so, the study also focuses on environmentally conscious consumer behaviour that can be described as any action of consumers that demonstrate the benefits derived from green marketing purchases.

Griffiths et al. (2019, p. 445) explicitly stated that 'the interconnected networks of the sharing economy can produce overflows from production and consumption'. More particularly, in some cases, those overflows 'can be either absorbed by the demand in the market, renegotiated by the involved parties or remain as a negative after-effect a blight on society'. In Coffee Island's case, the blight to society remains as its pollution is not easily absorbed by the economic system, as currently, there is no motivation in doing so. The smartphone recycling application and QR scanning to promote recycling are specially designed to correct the above-mentioned negative externality that the market system cannot tackle.

There is a wide range of definitions of green marketing. Table 1 presents an indicative list of definitions of green marketing.

Green Marketing Perspectives	
Definition/Perspectives	Source
'Eco-marketing is a component of the new marketing approaches which refocus, amend and improve existing	Mishra and Sharma (2012 cited in Dangelico and Vocalelli, 2017, p. 2168).



<p>marketing philosophy and practice, offering a considerably dissimilar perspective. Eco-marketing belongs to an assembly of approaches which try to make reconciliation between the lack of fit between marketing as it is presently practiced and the ecological and social realities.’</p>	
<p>‘Any good which has the following characteristics can be considered as green, hence green marketing refers to products which bear the following attributes: “biodegradable, compostable, ozone friendly, photodegradable, recyclable, recycled.”’</p>	<p>Indiana’s Environmental Marketing Claims Act (2008 cited in White, 2010, p. 332).</p>
<p>‘Green marketing is all about green products, services and consumer awareness towards green products.’</p>	<p>Gleim (2013 cited in Sharma and Kushwaha, 2019, p. 56).</p>
<p>‘All activities designed to generate and facilitate any exchange intended to satisfy human needs or wants, such that the satisfaction of these needs and wants occurs with minimal detrimental impact on the natural environment.’ (The terms green and eco marketing are deemed as synonymous in the present part of the table).</p>	<p>Polonsky (1994 cited in Parkman and Krause, 2018, p. 86).</p>
<p>‘Green marketing programmes are recognized as a bridge that links corporate environmental ethics with firm performance.’</p>	<p>Papadas et al. (2017 cited in Han et al., 2019, p. 932).</p>

<p>‘They refer [green marketing programmes] to marketing practices that minimize negative impacts on the environment in pursuing the goals of a company.’</p>	<p>Menon et al. (1999 cited in Han et al., 2019, p. 932).</p>
<p>‘Green marketing is the marketing of products that are presumed to be environmentally safe. Thus, green marketing incorporates a broad range of activities, including product modification, changes to the production process, packaging changes, as well as modifying advertising.’</p>	<p>Aggarwal (2016 cited in Selvakumar et al., 2019, p. 274).</p>

Table 1. Definitions of green marketing.

Indiana’s Environmental Marketing Claims Act (2008, cited in White, 2010, p. 332) provides specific aspects of how and when a good can be described as green like ‘biodegradable’. Comparing the previous reference with Polonsky (1994, cited in Parkman and Krause, 2018, p. 86), who refers to ‘minimal’ negative repercussions to the environment, a resemblance is observed. In both definitions, the main objective is to reduce pollution to the maximum possible degree or at least not to negatively impact the natural environment of the planet. Papadas et al. (2017, cited in Han et al., 2019, p. 932) defined it as ‘a bridge that links corporate environmental ethics with firm performance’. Corporate ethics were clubbed with a firm’s performance in this definition. Menon et al. (1999, cited in Han et al., 2019, p. 932) only mentioned green marketing as a notion that strives to ‘minimize negative impacts on environment in pursuing the goals of a company’. ‘Minimizing negative impacts’ (Menon et al., 1999, cited in Han et al., 2019, p. 932) can happen, but it is not necessarily the same as business ethics, since the latter is something objective. After all, it could be legal to pollute the environment to a certain degree with governmental permission. Still, it might not be ethical to pollute, threatening sustainability.

## **2.2 Environmentally conscious consumer behaviour**

Moser (2015, p. 169) mentioned that consumers have the propensity to 'integrate sustainable actions' into their daily purchases from retailers, i.e., a supermarket or vendor, and appreciate 'ecological attributes' of given goods. According to the author's opinion, this is the basis for forming such an endeavour in the present study. By endeavour, the author means that he wishes to promote sustainable recycling efforts via modern-day technology, which is the smartphone recycling application and QR scanning recycling project. The author acknowledges that sustainability management is important. According to Moser (2015, p. 171), customers should actively be willing to pay for and able to use the QR codes and smartphone applications for the project to be successful. Purchasers and users of goods should have concerns about environmental issues, and when they purchase goods, they should be valuing the impact of their actions on the planet. Moser (2015), in this case, emphasises the fact that consumers do take into consideration their physical surroundings and the external environment they live in. It makes sense to align this thought with their buying decision patterns. The present study aims to make customers accountable for their purchases and inform them about the impact that buying a plastic cup has on the environment.

Furthermore, as consumers care for the environment (Moser, 2015, p. 171), they will try at least to do something about pollution. The application, which Coffee Island will construct for the present research, can ensure tracking of certain activities like recycling a set amount of plastic cups and gathering eco-points. Such efforts will hopefully result in more motivation for them to continue actively participating in the overall project. Promoting the application and QR scanning through active and continuous participation of customers greater benefits will be accrued to society and Coffee Island.

The Roper Organisation and S.C. Johnson & Sons, (cited in Justin and Jyoti, 2012, p. 413), segmented five categories of consumers based on their ecological commitment (Figure 1).

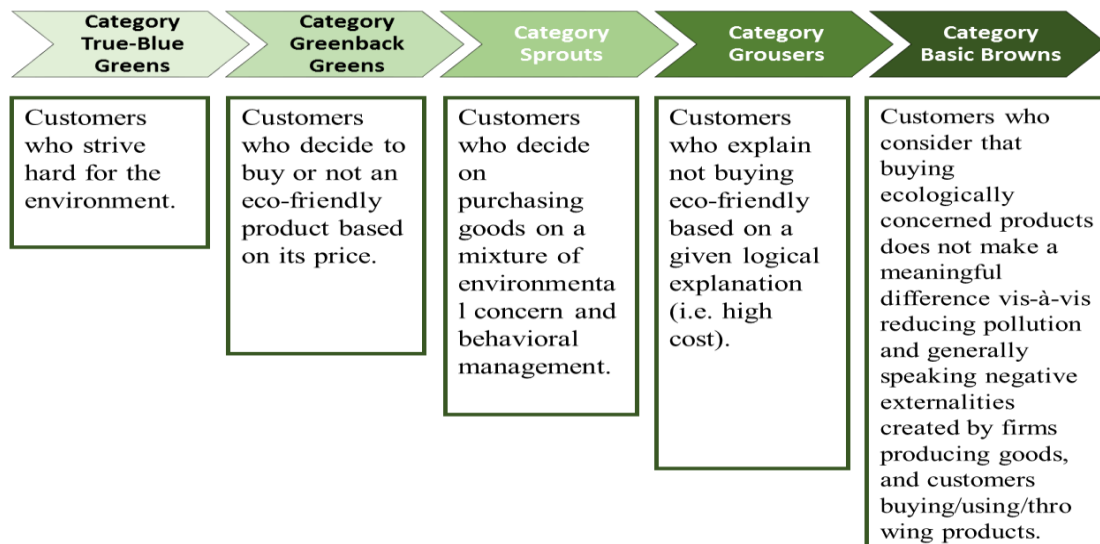


Figure 1. The five categories of consumers, segmented by the degree of ecological commitment (Justin & Jyoti, 2012, p. 414).

Environmentally-conscious consumer behaviour is growing in popularity. Lin and Niu (2018, p. 1680) wrote that ‘environmental consciousness is not only pertinent to one’s perception and knowledge towards environmental issues but also towards the behaviour that one consequently conducts’. There are many reasons for this trend, namely the depletion of the planet’s resources, adverse weather phenomena caused by human actions, and the popularity of going green by firms. Gonzalez et al. (2015, p. 290) mentioned that ‘biospheric values, universalism, and benevolence’ are the leading influencers in customers going green and making eco-friendly buying decisions. In reducing plastic consumption and litter, the author believes that the personal benefit of recycling is typically less than the social benefit.

A customer might be rewarded for recycling by a voucher or an app offering him/her an award. Yet, the main gain for the green customer is derived from society and future generations to come. Future generations can benefit from a reduction in carbon dioxide emissions, litter, and overall pollution. Gonzalez et al. (2015, p. 290) elaborated even further on the value of ‘collectivism’ and ‘environmental concern on ecological purchasing’. This dimension seems totally sensible in the overall context of helping the planet and giving back to local communities. Collectivism is a notion pertaining to the main idea of offering something to society, instead of the other way round – expecting society to give something back to you.

Moreover, environmental concern exists in contemporary societies and markets. For instance, there is a growing debate on buying local produce instead of foreign ones since the former enhances the local economy and reduces the total carbon footprint of an entire area. Contributing to the discussion on environmentally-conscious consumer behaviour, Franz and Papyrakis (2011, p. 392) commented on the popularity of ‘online personal calculators’ as a meaningful and efficient way of keeping track of personal buying decisions and holding individuals accountable for their purchases.

Franz and Papyrakis (2011) analysed the usefulness and purpose of tracking the ecological footprint of consumers via technology. Initially, Franz and Papyrakis (2011) mentioned that technological systems should train individuals to identify eco-friendly options. Subsequently, the pollution problem should be communicated to them, and finally, an efficient way of reducing negative externalities should be presented. Franz and Papyrakis (2011) imply that should consumers be presented with such options, they will consider them. They will probably act on them since they will be given a reasonable and productive way to do something favourable for the environment. On the other hand, White (2010, p. 326) presents a case on ‘greenwashing’, a technique through which consumers are kept blissfully unaware that certain goods are not properly green, and have no eco-friendly assets. White (2010, p. 326) claims that since consumers cannot readily know whether a good is ecologically sound or not, they might be tricked by firms into believing that it really is. They may be charged more for the supposed green characteristics rather than the conventional ones. A key solution is legislation in the United States and anywhere else on the globe. It specifies the attributes a final product must have to be named ecofriendly.

Papadas et al. (2017, p. 238) wrote about ‘strategic enviropreneurial’ initiatives that aim at raising awareness about a firm’s social image and impact and align its business operations to what is expected of it by existing and potential stakeholders. Firms should have a strategic green marketing orientation because their objectives should be in line with what is expected of them by customers, their legal environment (i.e., regulatory authorities), and various focus groups, whistle-blowers, etc. The environmental cause is quite important as any firm is directly or indirectly affected by it.

The author does realise that a firm of the magnitude of Coffee Island should be involved in environmental conservation since its large-scale operations do affect the environment. Small firms do not harm the environment that much and most probably lack the resources, experience, and willingness to contribute to recycling attempt actively. Papadas et al. (2017, p. 244) mentioned that a company having a green management approach depicts its long-run dedication and monetary commitment to specific eco-friendly business strategies.

The author wishes to extend this idea to the active participation of other departments like the Information Technology department, the Marketing department of the case firm Coffee Island, the thousands of existing prospects, and future customers/consumers of the good. Environmental conservation is an integrated process; hence all Coffee Island departments should actively contribute to the project. Future customers/consumers of the firm's goods should also be aware of their environmental impact and the benefits they can derive from using the QR scanning and application vis-à-vis pollution reduction. An interesting point made by Papadas et al. (2017, p. 244) is that firms ought to target their green marketing strategy to specific consumer clusters willing and able to follow them. This again boils down to market segmentation, wherein key demographics, behaviour and patterns of consumerism play an important role in deciding who will use the product, to what extent, and how motivated they are to propose the green project (i.e., recycling, QR code scanning, etc.) to other users.

Porter and Kramer (2006, p. 81) commented on why firms follow corporate social responsibility and subsequently reach key demographics for their marketing strategies. Porter and Kramer (2006) stated the four main parts of what makes firms reach eco-friendly customers: 'moral obligation, sustainability, license to operate, and reputation' (p. 81). They discuss how each of the above-mentioned items is important in breaking down the market into specific groups and the mechanics to reach them. Reputation, for instance, is vital to develop a strong brand name and, at the same time, gain some bargaining power over competitors or even local governments (Porter & Kramer, 2006).

Furthermore, sustainability is the ability to cater to contemporary market needs without jeopardizing natural resources or pollution levels for future generations. Throughout the masses of consumers around the globe, the market can be broken

down into particular market segments. A socio-behavioural segmentation might be appropriate as demographics is not a fundamental factor of an eco-friendly approach. In reality, children of all walks of life actively participate in recycling and active reduction of pollution. In Greece, for example, many campaigns of cleaning beaches during the winter routinely take place with the aid of children.

Rosenbaum and Wong (2015, p. 84) discussed 'green equity' as a total package that a customer receives when buying a product or service characterised as ecological, green, or environmentally sensitive. The customer's opinion on the extent of how green the product is and how honest the firm's intentions are, is considered to be purely 'subjective' (Rosenbaum & Wong, 2015, p. 84). 'Green equity' is an additional consideration for companies to take into account as prospects have to be convinced about the firm's dedication to the cause. Additionally, they must be persuaded to believe the importance of the purchase on the overall benefit of the environment. Adnan et al. (2019, p. 145) clearly stated that the 'more the customers evaluate the quality of a product and its credibility, the more is the chance that they will end up their evaluation influenced by the environmental specific perception and attitude toward that green brand'. Indeed, green brands tend to be seen as brands that care about the environment. Customers are willing and able to observe such an ethical shift in those firms' behaviour (Adnan et al., 2019).

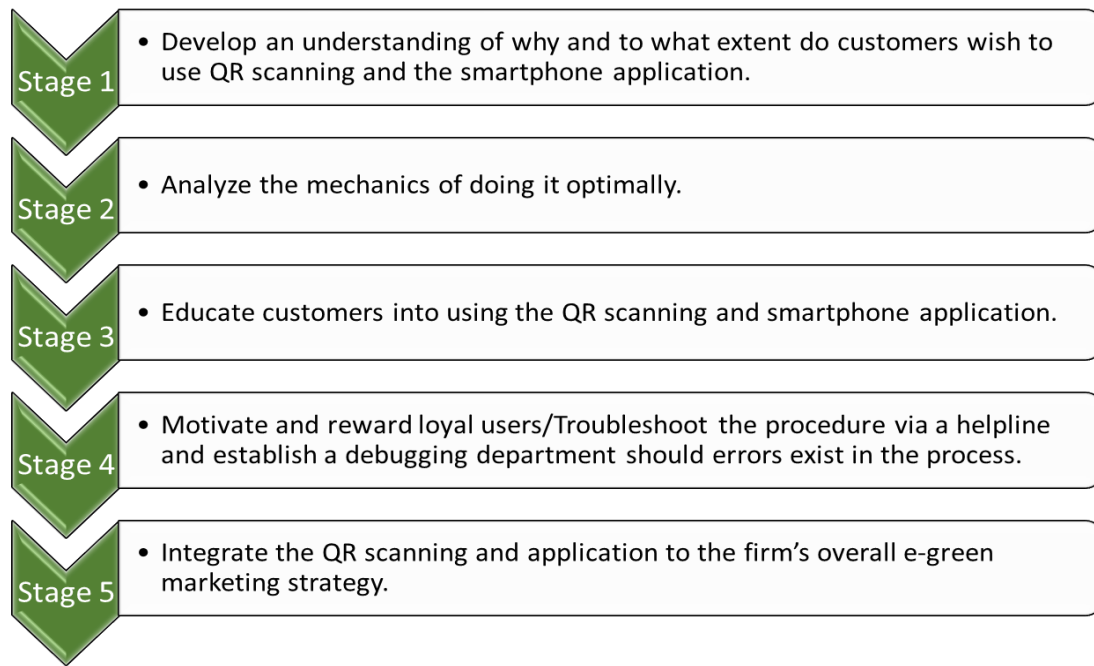
Feedback can be a strong motivator. Prospects, as mentioned above, will receive immediate feedback when they scan a good before buying to see the related carbon emissions. Similarly, when they return goods, recycle products, they will be informed online about the positive impact on the environment. Rosenbaum and Wong (2015, p. 84) mentioned green hotel criteria as eco-friendly. They identified various hospitality materials like bulbs that save energy, and switches, as crucial drivers in customers' perceptions of green hotel marketing. Coffee Island's business package should include key eco-friendly goods consisting of recyclable cups, limited carbon dioxide footprint local groceries, and energy/water efficiency in all production lines, retail included. By eco-friendly goods, it is meant that these are products specifically manufactured to 'immediately reduce the environmental impact of the goods and services that support our lifestyles and economic activities, and promote a shift in demand toward eco-friendly goods' (Nagarajan & Jiji, 2013, p. 73).

Moreover, green constructions are a key in reducing energy waste and pollution throughout the planet. Nagarajan and Jiji (2013, p. 73) specifically indicated ‘developing viable techniques and mechanisms for construction waste reduction to improve the effectiveness of resource utilization’ as a major concern for contemporary economy and preservation of the planet. Energy-saving bulbs and reduced water consumption in doing laundry and producing coffee and beverages will be a must. In addition, the customers will be able to observe it either first hand at a shop and/or via their smartphones through the proposed application. The research extensively talks about green marketing and how to save energy. The author argues that since there is such a high demand for ecological products and a trend towards green marketing, Coffee Island can motivate and practically convince its customers about its true intentions on protecting the environment through recycling. In actuality, Study 2 tried to uncover whether the practitioners believed that the audience would perceive such an endeavour as an honest or just a greenwashing attempt.

### **2.3 Data flow chart of the e-green marketing strategy**

Data flow charts are a useful managerial tool. They create an algorithm using which an executive can create a step process and then achieve a meaningful outcome. For instance, in Coffee Island’s case, the idea is that there is a strong connection between its business strategy and the e-green marketing methods to be applied. Specifically, the author is interested in engaging both the firm and the customer to reduce negative externalities. These will be the key points in activating customers to use the QR code scanning and the smartphone application altogether. Figure 2 depicts the data flow chart of this process.





**Figure 2.** Flow chart of steps to be taken to use the *green* QR scanning and smartphone application (Marketing Department of Coffee Island's business process).

Davari and Strutton (2014, p. 564) mentioned that green marketing strategies do not yield profits for firms unless specific and targeted consumers can perceive value and marginal private benefit when they buy goods branded green and eco-friendly. In addition to the previously mentioned statement, the uniquely desirable position (Davari & Strutton, 2014, p. 564) for Coffee Island will be recycling and promoting reusable resources during the production of the goods in cooperation with the consumer. The latter will receive training online on reducing waste, promoting eco-friendly daily habits, and remaining accountable and loyal to the application via e-recording on his/her smartphone and Coffee Island's database.

Being eco-friendly shows a sustainable approach to the planet and future generations. Customers can correlate their desire to have a pollution-free environment alongside Coffee Island's active and passionate attempts about such a problem. Do Paco and Raposo (2010, p. 432) extensively discussed the green marketing segmentation process, including 'recycling'. According to Do Paco and Raposo (2010, p. 432), through the assortment of packages, the willingness and ability to separate them and gather points for doing so are ways that actively promote recycling behaviour. The author can learn from this in the sense that there is a strong market segment that does not only have environmental knowledge about the problem of pollution but also actively engages in the problem via 'environmental concern' and 'resource saving'

(Do Paco & Raposo, 2010, p. 432). The key point is to make users aware of the QR codes and the smartphone application of the environmental problem and engage them in saving the environment as much as possible. Do Paco and Raposo (2010, p. 434) mentioned three market segments of green marketing: 'the uncommitted (36%), the green activists (35%), and the undefined (29%)'. The uncommitted customer segment is an unsaturated part of the market. They can be reached through e-green marketing practices. This customer segment is either not aware of pollution problems or believes that their contribution will not matter. The green activists are an excellent focus since they are already aware of the problem and engage in it actively. Most probably, they will take little persuasion to adopt the proposed policies. Finally, the undefined people are quite suspicious about the firms' messages and intentions, which strive to go green and present an environment-friendly face (Do Paco and Raposo, 2010, p. 434).

Wu and Lin (2016, p. 153) went to great lengths to analyse their survey findings on the relationship between green marketing and business performance. Wu and Lin (2016, p. 153) found that when an organic firm uses and applies a green marketing strategy, it experiences rising economic revenue, leading to other benefits like better quality of goods and increased brand reputation among the public. The key point was that spending resources on green marketing yields meaningful payoff and positively affects business performance.

After hypothesising and testing the theory, Ahmadzadeh et al. (2017, p. 840) showed that constructing a well-grounded 'environmental-organisational strategy' results in the 'creation of green marketing strategy'. They statistically confirmed it. In reality, creating a green marketing strategy means that the company's actions aim to reduce the carbon footprint (i.e., carbon dioxide emissions). Since consumers are actively trying to protect their natural environment, they pay more for green products (Ahmadzadeh et al., 2017). So, Coffee Island and any firm polluting the environment can capitalise on such a green marketing trend and consumer's environmental consciousness by engaging in a green marketing programme. In Coffee Island, such a thing shall happen via a smartphone application and recycling through QR scanning.

## **2.4 Social marketing in a contemporary business environment – the role of stakeholders**

A stakeholder analysis was extensively used in the critical literature review. Initially, the focal matter was identifying who was involved in green marketing. It turned out that most firm's internal and external customers can immediately be affected by most green marketing efforts. Khurram et al. (2019, p. 144) even mentioned the difficulty of finding who exactly is a stakeholder. Apart from the 'definitive stakeholders', 'expectant [and] latent' were also added to the mix. This, again, made the research reframe itself as it required to embark not only on the pollution generated by a product but also on the opinions of consumers, public groups, whistleblowers, and management experts who all can comment on the efficiency of a firm's environmental practices.

A stakeholder in social marketing is any given person, organisation, and/or group, which may be directly or indirectly influenced by the actions of other members or companies. Nelson (2019, p. 62) mentioned that 'interactive communication using social media could enhance relationships between an organisation and its stakeholders or followers, creating a stronger sense of community and encouraging a higher level of accountability, as the organisation has two-way communication with its publics'. Moreover, Nelson (2019, p. 61) emphasised that through viral marketing and namely '@mentions and retweets', dialogue is formed, and active forms of engagement are created between stakeholders and an organisation. The specific journal article found a correlation between viral marketing and socially responsible actions.

It is key to evaluate the role of stakeholders as they always have a positive or negative impact on a social marketing campaign. Ali (2017, p. 153) mentioned that firms that can not cooperate and efficiently work with their stakeholders 'cannot function successfully'. It is a basic principle in management that finding key players within and outside an organisation help develop proper communication channels through which specific problems can easily be aired. Moreover, based on Ali (2017, p. 155), success for a firm practicing stakeholder management comes from mutually beneficial interactions at the stakeholder level, and 'cooperation, dialogue, alignment of interests, alliances...' are the primary benefits derived from it.

Cordano, Marshall, and Silverman (2010, p. 466) elaborated on the motivation that specific US firms voluntarily embark on environmental management planning. The key perceived benefits, according to Cordano, Marshall, and Silverman (2010, p. 466), are reductions at the cost of production, meeting and superseding governmental standards about the level of pollution and other anti-pollution goals (i.e., the volume of recycled materials), and improved organisational image to various stakeholders. Cordano, Marshall, and Silverman (2010, p. 466) also discussed that if a firm went organic, this practice meant that its motive was to ‘strive to lessen environmental impact’. Organic products, by definition, use less pesticides and actively conduct every step of the production process with environmental management practices. Reducing pesticides can help farmers take some of the burdens off from the planet’s limited resources. Organic culture has a lot to offer, and it goes along with stakeholder salience. Less pesticides in a harvest mean less drainage into oceans, rivers, and nearby farms and landfills.

Lane and Devin (2018, p. 269) mentioned that through ‘dialogue, collaboration, [and] power sharing’, stakeholder management principles of engagement and mainly ‘consultation, [and] participation’ can be achieved. Dialogue is an essential part of any stakeholder management approach. It is rather common for stakeholders to be unaware of certain negative impacts of their actions on the environment. Collaboration entails a firm meeting specific opinion leaders, discussing with them, and subsequently developing peer pressure to specific market segments to start adopting eco-friendly relationships with them. Moreover, power-sharing allows control of specific resources to external parts of an organisation.

To make it more specific, firms around the globe allow their customers to vote for the new colour of a product, what would be the best packaging for a certain product, etc. A proposal to power-sharing as stakeholder management would be to allow customers to have access to crucial recycling information and notify them whether they would like to find out recycling mechanisms. Customer groups and their representatives could themselves propose recycling tools and pollution prevention mechanisms. Active recycling would be, for instance, returning plastic and glass bottles to a firm, while passive one entails using less plastic and other environmentally harmful raw materials.

Lane and Devin (2018, p. 272) mentioned steps in finding who a firm's stakeholders are. Besides tracking down their existence, the firm needs to grasp their interest, implement strategies with them, and make legit decisions. For instance, a firm should map its stakeholder's backgrounds and establish communications with them ideally through their PR and Marketing departments. After that, the critical point is to implement a corporate social responsibility policy to set specific goals and reach them to the best possible extent. Yet again, it requires a lot of fine-tuning amongst alternatives and commonly conflicting stakeholders' interests, but through 'interaction, involvement, and integration' (Lane and Devin, 2018, p. 274), common ground arrangements can be found.

Lewandowska et al. (2017, p. 28) directly mentioned that it is fashionable for modern firms to go green and Furthermore, Lewandowska et al. (2017, p. 28) used quantitative analysis to observe the level of pollution created by firms and find meaningful ways to meet specific marketing goals. Based on the stakeholder analysis, one of them could be an overall improvement of the conditions under which firms pollute the environment and cooperate with their stakeholders, particularly with their customers. Shi and Yang (2018, p. 82) interestingly focused on the stakeholder analysis and the actions of a firm, which by definition affect other members of society based on the company's size.

According to Shi and Yang (2018, p. 82), the size of a firm is an important factor. A larger firm can more effectively apply, use, and support green marketing operations as they have the workforce, technology, and financial resources. Moreover, according to Shi and Yang (2018, p. 82), critical factors of successful green marketing are the support of senior executives and the will and preparedness of their stakeholders like 'customers and suppliers', particularly in achieving a meaningful result in terms of going and remaining green. Especially in projects requiring recycling, a firm could implement them, yet support, motivation, feedback, and control of the overall process are critical. Customers should be made part of the value-addition to society through spreading awareness and education by the company.

## **2.5 Technology and green marketing**

Technology is any technical means or apparatus that allows human beings to increase their productivity and efficiency in specific tasks. Technology has dozens of

applications, yet for the present study, the scholar-practitioner shall almost exclusively focus on QR coding and smartphone applications and how they can be incorporated into marketing strategies.

Mobile phone usage and ownership have increased over the previous years. It is a fact that people use and most probably will continue using mobile phones, which tend to become smarter and smarter. The ITU report (2018, cited in Nikolopoulou, 2020) mentioned that Greece is ranked as a ‘higher scoring European nation in the Information and Communication Technologies Development Index; between 2014 and 2016, fixed broadband mobile penetration increased by four percentage points in Greece’. Another critical article authored by Fortunati and Taipale (2014, p. 318) states that an ‘increase in [smartphone] traffic can no longer be achieved by increasing the number of customers (as the penetration rates of mobile phones have almost reached saturation point), the only realistic strategy is to intensify the use of mobile phones’. So, according to Fortunati and Taipale (2014), in advanced European countries, the saturation point of users is at its maximum, and only the degree of use can change (i.e., data transmitted over and to smartphones).

Hosseini, Mohammadi and Safari (2018, p. 2526) clearly stated that ‘mobile technology’ can act as a blue ocean marketing strategy. Hence, it generates unsaturated and potentially unknown market segments. It can change a firm’s vision and impact the way communication and market structures are executed. Through ‘mobile technology’, electronic mails and messages transmitted electronically in real-time have changed the nature of communication between consumers and firms (Hosseini, Mohammadi, and Safari, 2018, p. 2527). Indeed, firms immediately get feedback from their customers and can approach the customers online in real-time. Advertising messages can be easily conveyed as they offer audio-visual facilities. Animation is also an extra benefit compared to print messages or radio advertising. Furthermore, through technology (like QR scanning and an application that actively promotes recycling and pollution reduction via raising awareness of the problem), a manager can get on-time replies on how much an audience is interested in specific themes. The audience can also propose ways of going on with an electronic campaign (i.e., the campaign title, the coloring to appear on the website, etc.). Technology that reduces pollution (i.e., actively engaging customers to reduce carbon dioxide emissions, recycling, etc.) can benefit humans and the natural environment. Recycling

is based on using factors of production like capital (landfills). Through special recollection, vehicles disposed of cans of soda, litter, and the like are transformed into reusable material. Hence, fewer natural resources are consumed.

Before the advent of the Internet, recycling was traditionally done through an opinion leader giving the initial message about its benefits. Then flyers and other printed material allowed the public to become aware of the benefits. Moreover, radiophone and other means, mainly television, acted as reinforcements in the specific novel cause. Ganguly, Das and Farr (2017, p. 5) reported that through destructive technology, an existing and prevailing form of doing business could be replaced, if the conditions are right, by another one. In recycling and a firm adopting a green marketing approach, the critical issue is to make it easy and enjoyable for them. Ganguly, Das and Farr (2017, p. 5) also claimed that innovative technology could offer a good 'product advantage' over competitors provided two essential conditions are met. Firstly, consumers should become familiar with the new technology. Subsequently, they should observe an immediate advantage of the specific technology (i.e., QR scanning) vis-à-vis other recycling methods. Rogers (2003, cited in Kohles, Bligh and Carsten, 2013, p. 469), wrote that 'understanding the need for such an innovation is the first step in a complex innovation-development process in which an innovation is communicated through certain channels over time among members of a social system'. As a result, sharing innovation amongst consumers is no easy task. It takes a long time. However, it can be diffused amongst members through communication channels. Since innovation changes the status quo of things, it can be deemed disruptive (Kohles, Bligh and Carsten, 2013).

Ganguly, Das, and Farr (2017, p. 5) further mentioned that 'risk and speed' are two paramount parts of the success of any disruptive technology since, without them, consumers might opt not to use the new technology. A given smartphone application should be fast, free of viruses, and most importantly, perceived by its users as beneficial for both the environment and them. Such a critical condition might enhance repeat usage by consumers and increase the likelihood of going viral (Ganguly, Das & Farr, 2017).

Fernando, Jabbour and Wah (2019, p. 13) emphasised that firms that combine technology with green marketing create an augmented product to replace their already selling one. The innovation that comes along with the use of technology leads to

surplus value. Most specifically, it makes an imitation of the product or service difficult for competitors. Fernando, Jabbour and Wah (2019, p. 13) assert that through innovation, a firm can generate an ongoing positive ‘business performance’, which is an asset that corporations should consider when crafting their business strategy.

Sony and Ferguson (2017, p. 38) specifically mentioned that consumers tend to opt for environmentally friendly options. On the other hand, firms can go green through technological innovations by altering their production processes to reduce litter and proposing better recycling programmes. Moreover, Sony and Ferguson (2017, p. 38) maintained that since firms can integrate more ‘green product innovations’, consumers can easily look favourably at those goods and have a positive attitude to the products. Their buying intention correlates positively with these green, technologically innovative products. Sadovnikova and Pujari (2017, p. 253) interestingly stated that firms could keep a tally of their carbon footprint and damage they cause to society and the environment through technology. More specifically, organisations can produce ‘zero-waste products’. It is easy to identify and eradicate ‘hazardous materials’ because organisations can find them and easily substitute them with more eco-appropriate options. Sadovnikova and Pujari (2017, p. 254) wrote that marketing, technology, and environmental proficiency could be melted together to produce superior business performance. In reality, firms can more efficiently link with consumers through technology and utilise opportunities in fresh and unexploited ‘green markets’ (Sadovnikova & Pujari, 2017, p. 254).

### **2.5.1 Use of smartphone applications and QR scanning**

Since looking at and browsing a smartphone is becoming a widespread habit for some consumers, the thesis discusses how such a positive trend can be linked with increased recycling. The present study takes it for granted (*ceteris paribus* hypotheses – all other variables have been kept stable, that is) that millions of people use old mobile phones, which adds to pollution. Despite that fact, its use is inevitable or cannot be easily reduced by the author. Thus, the QR scanning and recycling application can contribute to the reduction of pollution. Pitt et al. (2011, p. 31) pointed at ‘greenMeter’, an iPhone app that ‘calculates a car’s (or any other vehicle’s) power and fuel usage and evaluates how drivers could modify their habits to increase efficiency, reduce fuel consumption and cost, and lower their environmental impact’.



According to Pitt et al. (2011, p. 31), this has proved to be a highly successful app, leading to a reduction in the consumption of oil and gas, less carbon dioxide emission into the atmosphere, and an overall benefit to the environment via less pollution and use of renewable resources. The most significant benefit of the greenMeter is that it works on any vehicle. The data travels along with each passenger regardless of her address on the planet. The author can learn from this and apply these lessons to Coffee Island's application. For instance, the application should work on any Coffee Island retail shop. All saved data and loyalty points should be reachable by a few fingertip strokes of the smartphone owner. On the other hand, the scholar-practitioner cannot extend the use of the app to other recycling objectives as done by other firms. He must align his consumers' purchases and eco-friendly approach to the firm's products like coffee, beverages, confectioneries, etc.

Atkinson (2013, p. 388) believes that if a firm utilises applications and/or QR scanning, it gives the firm a chance to approach consumers while actively shopping. It can offer some rewards aimed to enhance loyalty to the cause on the spot. Indeed, it will be quite easy to identify prospects when they are actually at one of Coffee Island's stores and find out their real intentions and propensity to use the application and QR scanning. Atkinson (2013, p. 391) wrote that QR code advertising needs to have some content that makes it 'interesting, relevant and easily shared' to increase word of mouth, viral exposure, and online sharing.

To be more specific, in the case of Coffee Island, the QR code scanning will be focused on having a slogan that can be easily memorised, and shared among a large number of people. The simplicity of the slogan will make it easy for customers to reproduce, keep it in mind, subliminally recall when they are engaged in recycling activities, and actively promote Internet sharing via contests. Furthermore, the author would like to emphasise that QR scanning advertising is relatively new to Greece. Yet, according to Atkinson (2013, p. 391), the scholar-practitioner can frame the message in a meaningful way to the consumer, and at the same time, target the QR scanning to those most inclined to use it.

Inyim et al. (2018, p. 5) mentioned a smartphone application called Building Brain. Its purpose is to raise awareness about environmental issues and, at the same time, promote energy savings through learned behaviour and reward. The author can learn a lot from Building Brain as it successfully reduced carbon footprint whenever it was

used. Through a specific application, accountability is immediate. The user is directly informed on the impact of her buying (i.e., a bottle of water has that many grams of plastic and degrades after ten years), so his/her purchases can become more informed. Should specific recycling and pollution prevention goals be met, he/she will be awarded a certain e-flag and/or voucher (Inyim et al., 2018, p. 5).

Moreover, Inyim et al. (2018, p. 7) discuss the snowball effect that social influence and situational awareness can create towards protecting the environment. They highlight the following key point: a specific existence of a social network in which users exchange information leads to tacit knowledge communicated through experience and daily practice, and camaraderie. This leads to the creation of experience curves via the exchange of methods and daily routines regarding recycling. Eventually, it can create healthy competition and maintain meaningful accountability amongst users of a smartphone application.

In Coffee Island's specific case, users could be motivated by other people's recycling efforts and potentially recycling challenges and promotions. Achievements can be posted on social media; hence, making the project go viral, thereby stimulating healthy competition amongst its users. Ideally, such publicity and social interaction, combined with situational awareness of the problem of pollution on the planet, could attract new users to the QR scanning and smartphone application. Altogether, this raises the possibility of users being able to share their achievements on social media. Berger and Milkman (2012, p. 193) mentioned that people wish to do so via posting something deemed an 'upbeat' story or that 'makes others feel good' when sharing information over the Internet. In reducing pollution, a challenge could be posed as to which users would recycle the most over a week. Berger and Milkman (2012, p. 197) found that 'awe, anger, and anxiety' are subjects that get widely communicated via online means since they produce something desirable by the initial senders of the information.

The green draining of the planet and the increase of pollution-generating machinery, and the introduction of factories on a global scale can produce fear to the general public of how much pollution is created. Such information might be easily disseminated over the Internet, and the recipients of such knowledge could potentially be informed on the dangers of pollution and decide to act upon it. The notion is that the more exposure the problem gets through the Web, the more action the final users

are likely to take. Hinz et al. (2011, p. 55) mentioned that ‘viral marketing campaigns’ cost less for firms since the spread of the message is based on the users of the online application. They discussed the seeding marketing strategy through which a marketing message can be communicated to prospects and how well they will accept and use it (Hinz et al., 2001, p. 58).

According to Hinz et al. (2011, p. 58), the key point, in this case, is to reach ‘influenceable people’ who, in turn, can increase the rate of spreading the message. In the case of a smartphone application, this can be achieved by actively promoting and finding opinion leaders and, generally speaking, people who have fans, a wide audience, and, like to provoke an imitation of their behaviour patterns. If, for instance, a celebrity recycles through a certain app and does QR scanning of her recycled items, her fans can start doing the same, and this can lead to a drastic change. After all, raising awareness on environmental issues lies in finding ‘bridges’ (Hinz et al., 2011, p. 59), allowing a multiplier effect of the application and QR scanning process. These bridges can enhance the visibility of the app and QR scanning, create friendly rivalry amongst their users, and a critical word of mouth for such a novel cause.

The idea of greenwashing is somewhat self-explanatory and intuitive since it expresses a combination of eco-friendly actions done simultaneously as a firm craft, creates, promotes, and sells its goods and services. Most firms are obliged by the law and/or market conditions to confront specific environmental rules. Yet, the author’s analysis moved beyond merely obeying specific laws. Green marketing proved to be a strong arsenal for every firm, as in some cases, green products are deemed superior to their standard ones, and customers are willing and able to pay more for those.

Dangelico and Coalelli (2017, p. 1269) specified target groups based on a market segmentation into the following realms of concern: ‘environmental protection, health fanatics, and animal lovers’. Coffee Island is concerned about all those specific areas. Its products intend to pollute the environment less, enhance individuals' health status, and protect animal habitat, wildlife, etc.

The main lesson learnt from the Critical Action Learning was that green marketing has its pros and cons, and some strong believers and groups of people oppose it. Schmuck et al. (2018, p. 131) wrote that ‘greenwashing’ could mislead consumers into believing that a product does not pollute or is eco-friendly. Its attempts to influence the consumer psyche in the firm’s favour with false claims can infuriate

consumers and turn them against the organisation practicing poor marketing strategy. Finally, the analysis of Schmuck et al. (2018, p. 134) identified a fundamental concept of greenwashing. It was concealing important information about a product to make it sound more attractive to the average consumer, convincing her to purchase the product on false or misleading claims. That was a significant issue to help the author with his future research. This study appreciated the true and altruistic cause of green marketing and indicated specific steps for users of QR scanning and smartphone applications to measure and understand exactly the impact of recycling on the environment and specific accountability indexes of savings on carbon dioxide emissions, etc.

## **2.6 Power dynamics in recycling and firms' polluting the environment – the role of opinion leaders**

Corporations are under fire for acting unethically and polluting the environment. A key concept of power dynamics is that through pressure, some change may occur. Companies have the properties and rights of physical persons, yet they have no physical corpus. Moreover, their actions immediately have profound effects on the environment. With the same notion as the one required to control consumers' actions and hold them accountable via the QR scanning and smartphone application, firms can be controlled by environmental audits, whistleblowing, and pressure groups. Berner, Graupner, and Maedche (2014, p. 15) stated that 'horizontal visibility' that is visibility inside and outside a firm, can give power to employees and offer new challenges to 'post-bureaucratic organisation'.

Through technology, firms can be immediately held responsible for the pollution they generate, and government authorities should regulate them. According to Berner, Graupner, and Maedche (2014, p. 15), 'panopticon', which is a medium of control and subordination in some cases, helps 'guards' of the system to have control over a given situation. The word 'panopticon' comes from the Greek language and can be literally translated as 'viewing from above'.

It goes without saying that if firms are left to act as per their consciousness, very few of them would put society over business profits. On the other hand, using 'panopticon' (Berner, Graupner & Maedche, 2014) measures, society can ensure accountability for firms. It can make firms accountable for their positive or negative

actions through continuous monitoring of their activities. Every firm can be held accountable based on its actions, which can be traced down through technology. For example, a video camera can capture a company illegally disposing of its litter into the lake in real-time. In the contemporary era of speedy information technology, whistleblowers and agencies are observing firms' behaviour. It is logical to assume that the function and usefulness of the 'panopticon' (Berner, Graupner and Maedche, 2014) are very high.

Additionally, De Saulles and Horner (2011, p. 212) emphasised that two crucial factors exist in the contemporary panopticon: mobile technology, and personal accountability of individuals, and public scrutiny. De Saulles and Horner (2011, p. 212) indicated that consumers behaviour towards a third party could be controlled through the Internet. The mobility of technology allows immediate accountability and control over them. Their recycling patterns can be easily tracked. Similarly, monitoring agents can exercise control over a firm's social audit representation and corporate social responsibility statement.

Internal audit is vital. Yet, external assessment should be conducted based on how much firms pollute the environment to ensure accuracy and impartiality. Ideally, any attempt to recycle more and evaluate the programme's effectiveness should be transparent to the public. At the same time, external groups and stakeholders should have access to such data.

Finally, Berner, Graupner and Maedche (2014, p. 17) empirically proved that fewer problems exist in controlling information if 'privacy protection and data ownership' are in place. The same could happen in measuring the success of recycling programmes of firms when they apply technology. External, anonymous agencies could control the effectiveness of the attempt. Furthermore, government and NGOs should monitor the pollution generated before and after certain recycling programmes and offer unbiased advice on the effectiveness or ineffectiveness of those programmes.

Opinion leaders gain their relevance from people's support. Their opinions make a meaningful impact on society. Traditionally, opinion leaders can influence masses of the population, and at the same time, their say is quite crucial in identifying the purpose of social events. Nunes et al. (2017, p. 59) emphasised that the Internet has

allowed the fast and worldwide spread of information. Moreover, Nunes et al. (2017, p. 59) wrote that ‘digital social media users’ could quickly discuss social issues by posting their opinions on social media. Thus, opinion leaders can readily affect public opinion via global, online communities. While opinion leaders can readily scrutinise the actions of firms, they can also popularise positive initiatives such as recycling among consumers and interested groups, which can produce a meaningful and positive reaction in society and promote the overall novel cause of protecting the environment. Nunes et al. (2017, p. 60) further discussed the ability of an opinion leader to spread persuasive messages to the public, which, in turn, are transformed into ‘source credibility’ since, by default, an opinion leader’s followers take it for granted. Subsequently, the information is accepted by the public. It changes the public’s attitude on the issue and positively impacts their ‘purchase intention’.

Opinion leaders are vital in any online recycling programme. With a post on social media, or, even better, a positive comment and a picture of the recycling programme, they can influence their supporters to embrace the new project. Advertising recycling programme using opinion leaders can increase its success rate because an opinion leader’s words offer credibility to a certain cause (Nunes et al., 2017, p. 59). In addition to the reference, Nguyen et al. (2017, p. 11) wrote that it could become easier to promote and increase demand for household recycling using opinion leaders and attractive communicators. The point is that opinion leaders can exercise social pressure on various societal groups. It is logical to understand that opinion leaders influence them by the very definition of being a leader altogether (Nguyen et al., 2017, p. 11). Recycling clubs can be formed to increase effectiveness and motivation, and ideally, opinion leaders should promote them in open-air discussions, social networking announcements, media press conferences, etc. (Nguyen et al., 2017, p. 11).

A global NBA star from Greece participated in a massive effort made by the Municipality of Athens to bring back used soda cans for money coupons (33 cans for 1 Euro). The visitors got the chance to meet the player, receive free basketballs signed by him, etc. (Rewarding Recycling, 2019). Glass, plastic, aluminum, and paper were collected, and through proper management, they ended up being recycled with the most efficient method available to the Greek economy. Giannis Antetokounmpo is an opinion leader. He is globally admired to be one of the best players in the world. His

name and presence led to positive results in the overall rewarding recycling and environmental education project.

### **2.7 Alternative methodologies available to tackle Coffee Island's pollution challenge**

The Critical Action Learning methodology was used throughout the present paper. The author had at his disposal other means of identifying the issue and trying to reverse the situation. A potential methodology would be mere observation and offering some general solution to track down the extent of pollution Coffee Island generates. On the other hand, Critical Action Learning made the author a scholar-practitioner who does not merely observe the issue and propose a solution but actively embarks on it. He takes a stance, is ready to debug the proposed solution algorithm, and create a meaningful Critical Action Learning loop, which involves all stakeholders into the problem, and makes them part of the solution. An experiment was considered not appropriate due to its very nature. Stakeholders should be asked to express their free opinion on whether they liked the idea of recycling via modern technology and whether Coffee Island can motivate them to do so or not. Another rejected method was the Delphi Method.

According to Alarabiat and Ramos (2019, p. 88), it is clearly stated that although the Delphi Method (asking a group of panelists their opinion on a matter over an extended period) is not without its merits, it has a crucial problem. Because the Delphi Method takes a lot of time, far more than a simple interview, 'experts may change their opinion to force a quicker [apparent] consensus, which may harm the final result credibility' (Rowe and Wright, 1999, cited in Alarabiat and Ramos, 2019, p. 88). Fortunately, the present thesis conducted four interviews, each with a duration of one hour, and experts were not allowed to communicate among themselves to avoid the previously mentioned problem.

### **2.8 Summary**

The literature review uncovered an array of definitions on green marketing that tend to expand and add new things with time. Furthermore, the true intentions of firms are questioned by some critiques of green marketing. So, the author's research questions are tied to the literature review regarding how to motivate and convince Coffee Island

customers that the company engages in genuine and honest green marketing, wishing to make an actual difference in pollution generation and recycling.

Another key issue that came to light was a divergence of opinion across consumers. Some believed that companies going green were merely doing ‘greenwashing’ (White, 2010), while others considered such efforts novel and for a good cause. Opinion leaders are the key in convincing consumers to participate in these endeavours, through their public support of such activities. Social media and TV seem to be effective tools for opinion leaders to express gratitude and support for recycling efforts and enhance the reach of the activity. Technology and QR scanning are popular methods of using online resources, and consumers are inclined to opt for them on various occasions. The literature review revealed the propensity of users to embark on recycling activities could be an indicator and means of ensuring user retention, proper representation of participation, the volume of recycling achieved, final results, etc. There is a hotly debated issue about recycling and the means of doing so.

Also, there is growing literature on QR scanning and smartphone applications to promote specific corporate actions. The gap in the literature goes into combining these two different notions, which are recycling/raising environmental awareness via the implementation of technology and apparatuses like smartphones. It is interesting to identify the willingness and ability of consumers to frequently and consistently use such a smartphone application and QR scanning to reduce the negative externalities typically created by the use of metal, plastic, and glass. The following chapter of Methodology shall present in detail whether such a connection can be achieved or not. It explicitly is the propensity of consumers to recycle and become aware of pollution issues via QR scanning and the smartphone application.

## **2.9 Preview to methodology**

The next chapter presents in detail the mechanics of the two studies, Study 1 and Study 2. These studies have been used to gather first-hand data and establish a connection between theory and practice. In reality, the missing link between the literature review and practice is how firms can utilise QR scanning and application to promote recycling. After promoting recycling, the author wants to see whether a measurable impact on pollution reduction has been made or not. The author tries to identify the extent to which Coffee Island pollutes the environment. As predicted, if it



does so, based on a stakeholders' analysis and Big Picture analysis, measures will be taken. The author apprehends that Coffee Island is a significant polluter based on public criticism, internal audits, and pure managerial intuition.

Another key indicator of pollution that the firm allegedly created was customers' feedback on Coffee Island's use of plastic cups, bottles, confectionery wraps, and the like. The action-oriented method that the author followed is grounded on Critical Action Learning. The action research cycle comprises ways of identifying the problem. It requires critical analysis on behalf of the writer. With rigorous and active participation, the problem was tracked. The subsequent efforts included inquiring stakeholders on potential solutions to pollution generated by Coffee Island, and trying to achieve a meaningful intervention via engaging customers through a motivating reward system comprising a smartphone recycling application and QR scanning recycling process.

## **CHAPTER 3: Methodology**

### **3.0 Introduction**

The Methodology section describes and justifies various techniques implemented throughout the research to reach useful, valuable conclusions on the proposed QR scanning and smartphone application suitability. Through critical action research and primary research, the author can reach conclusions on whether there is a need to engage in such a project. The mechanics of the proposed questionnaires will reveal what could potentially motivate consumers to take up using such technology tools like QR scanning and the smartphone application regarding Coffee Island.

The objective of the specific section is to analyse the various techniques used during the research process. Moreover, recycling programmes, which are another objective of this research, have been analyzed. Interestingly from the literature review, opinion leaders and their influence emerged as proven motivators. Various reward programmes were reviewed because consumers, apart from being eco-friendly, wished to receive something in return. After the literature review, first-hand research was initiated. Three hundred e-questionnaires (Likert scaled) were sent, and four open-ended interviews with experts were conducted on the topic. The main goal was to develop actionable knowledge and a contribution to theory.

Despite numerous research on recycling and QR scanning/smartphone applications, there is no in-depth analysis of the combination of those tools. Mixing modern technology with recycling and actively engaging various stakeholders with the problem are the goals of critical action research. Cerecer et al. (2013, p. 221) noted that participatory research, which entails researchers becoming part of the problem and a potential solution to it, could and should act as ‘co-producers of knowledge based on shared experiences’. Co-producing knowledge is what the author is interested in. Coffee Island potentially views the problem of pollution from a narrow perspective. For a bird’s eye view, Critical Action Learning must be implemented.

The present thesis strives to access various stakeholders to gain a multi-facet view of the problem and find a sustainable and efficient solution to pollution. Flood (2010, p. 271) discussed that firms are open to external stimuli and act to the best of their capacity to ‘secure desirable growth, by transforming inputs and by adapting to changes when they occur’. In Coffee Island’s case, the inputs are its external

customers and the existing level of technology. With the IT department's help, the company needed to generate the codes for the recycling smartphone application.

Moreover, getting external and internal points of view made author aware of the difficulties of recycling through QR scanning and smartphone application. A manager needs to motivate and actively convince potential users of the great benefits of the proposed solution. Cerecer et al. (2013, p. 221) emphasised that a policymaker, or in Coffee Island's case, a manager, has to engage more in a certain problem than simply asking 'what is the impact of research, policy, or educational reform?' In reality, Critical Action Learning requires identifying if there is a problem. If there is a problem, the next step is to understand its severity and subsequently educate stakeholders on how to deal with it. Finally, a meaningful and efficient solution that can benefit them needs to be worked out. For instance, in this DBA's case, the realm of litter and pollution does exist.

Moreover, there is a vital issue of using plastic, straws, and other materials like glass, which inevitably pollute the planet. A fundamental way is to make users aware that their action leaves a certain carbon footprint. The following step is to make them more accountable with an application that can monitor their progress in recycling and motivate them through reminders and reward points.

Cerecer et al. (2013, p. 221) made a very interesting point when they suggested the need to communicate and distribute 'research findings accessible and useful' to various stakeholders. Another purpose of the present research is to alleviate pollution, not via imposing pollution taxes or pollution quotas by the government but by actively engaging the product users and the producer (Coffee Island) to reduce pollution. One way of doing so could be QR scanning of products (preferably recyclable ones) and using the smartphone application to keep track of how many bottles were recycled each week, carbon emission savings, etc. A vital concept of Critical Action Learning is that stakeholders actively engage, discuss, and contribute to a meaningful solution to a wicked problem.

Cerecer et al. (2013, p. 221) accurately wrote a rhetorical question on what potential benefits exist when stakeholders are 'at the table participating in decisions that impact their lives as active contributing members of society'. That is exactly the purpose of the present methodology, as the problem of pollution does exist. Through extensive

literature research and primary data gathering/analysis, an active attempt is made to confront it to the maximum possible degree. The literature review disclosed that green marketing is a long-time notion. Unfortunately, some corporations have used it with unscrupulous tactics and made it look like greenwashing – a pretentious act of going green while doing all the wrong things and usually lying to their customers, at best-presenting half-truths to them. Moreover, QR scanning and smartphone applications are quite effective in modern-day marketing; hence the author can combine these two realities and make the best out of them.

### **3.1 Research Methods**

The research will engage in two different studies, Study 1 and Study 2. In detail, there will be Study 1, which will entail web surveys of a sample of 300 prospects. In particular, the sample will be coming from both genders, provided it is a paying customer of Coffee Island for at least two years. The sample demographics come from a key segment that is the 25 to 45 years old group. There is a filter question to ensure that they are indeed the persons who are supposed to answer the question.

The questionnaires were sent via the Internet, as it seems an efficient and quick way to send them and retrieve them. The cost is next to zero, and they can be answered at the convenience of their own homes. Also, a reminder was sent to anyone who did not participate at the first attempt, and as Van Mol (2017, p. 324) cited, it can increase participation rates. Participants were asked about their opinion on recycling and ways to engage them in identifying the problem and working out a meaningful solution. The responses were likely to help achieve critical action research objectives. Yang et al. (2014, p. 43) made a hypothesis which they later proved based on the fact that there is a positive correlation between ‘customer knowledge management’ and ‘project performance’. Firms wish to maximize their profits through a continuous reduction in costs and selling larger quantities at higher prices. For this strategy to succeed, the target market that each firm aims at should see a meaningful market preposition. In Coffee Island’s case, the market does like its coffee product line and its confectioneries, cold dishes, etc. The controversy is the level of pollution generated into the environment.

Through a careful analysis of the existing customers via Study 1, the author could reach conclusions on specific actions that needed to be taken. According to Yang et

al. (2014, p. 43), knowledge comes through four levels: ‘acquisition, storage, sharing, application’. This is precisely the process through which the author embarked on his critical action research journey over the years. He acquired knowledge via primary and secondary research; then, it was stored safely and confidentially. After those two initial steps, through the DBA and potential firm’s future actions, the study outcomes will be shared with the general public and the business world. The firm’s action will include the large-scale application of the proposed techniques to reduce the negative externalities of production caused by Coffee Island.

Yang et al. (2014, p. 40) clearly identified the role of customers’ needs to know how and why using a product, along with the generated knowledge, can be mutually beneficial for customers and organisations. Based on Yang et al. (2014, p. 40), corporations need to collect data on ‘customer’s viewpoints’ and carefully monitor them to ‘build greater customer relationships’. Greater customer relationships can be built when Coffee Island listens to the problem or worry of a customer, namely pollution, and then takes specific, distinctive, and productive steps to deal with it. The ideal critical action research should even build mechanisms to ensure that the upper-level management commits to a certain goal by expressing the great benefits of ‘customer knowledge’ (Yang et al., 2014, p. 40). After all, if Coffee Island pollutes the environment and is under fire by various stakeholders, its customers can instantly revert to competitors offering a more environmentally friendly marketing mix.

There are specific cycles of action research, and definitely, the author is interested in each of them. Through Study 2, four qualitative interviews were conducted to identify the true nature of customers’ intentions and, more specifically, by asking the Marketing Manager, an NGO manager, and two other subject matter experts about the research question ‘b’. The research question b was: *What specific actions will be taken in collaboration with users/customers proposals to reduce pollution?*

The 300 e-questionnaires revealed the intentions, perceptions, and desires of the existing customers. The four qualitative interviews unearthed specific, tractable steps that can be taken to alleviate such environmental pollution caused firstly by the firm during manufacturing the goods and secondly by the users who consume them and dispose of the waste.

Action research is about firstly constructing a pre-step that realises and identifies the notion and perception of the current project. This has already been done as the author has realized the significance of hands-on actions on reducing pollution and negative externalities via the active engagement of external customers of the firm and the company's key stakeholders. Then there are four critical steps in the Critical Action Learning process, which are 'constructing, planning, taking action, and evaluating action' (Atienza, 2017, p. 572). The following Figure 3 is adapted from Atienza (2017, p. 572) and discusses how critical action research was combined with the author's research on Coffee Island's e-green marketing campaign initiative.

# Critical Action Learning Steps/Cycle

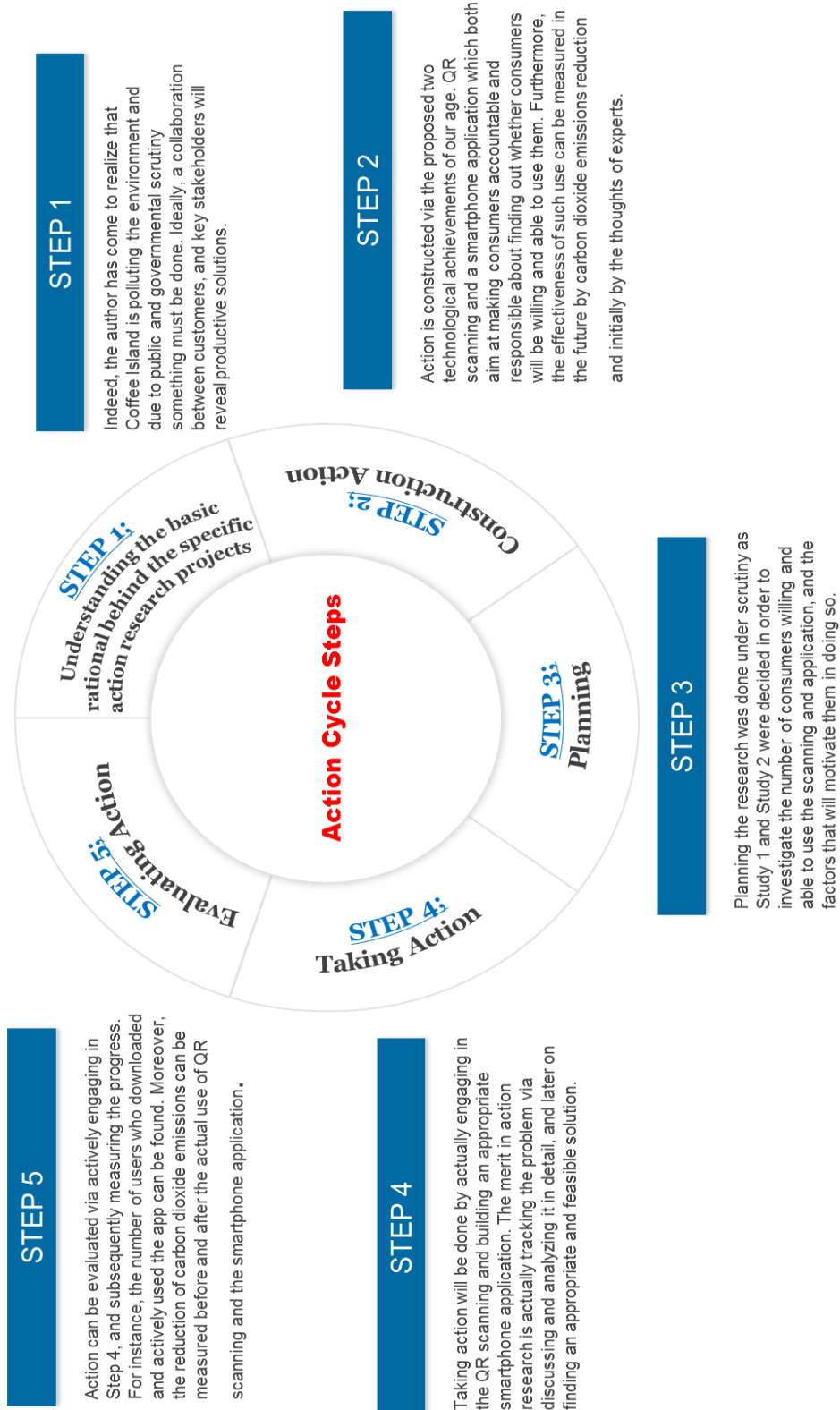


Figure 3. Action cycle steps adapted from Atienza (2017, p. 572).

### **3.2 The author's approach on the critical action research of Coffee Island**

Data collection is one part of the research. Study 1 and Study 2 aim at doing so. Before moving on to collecting data, identifying the nature and cause of the problem was made. Initially, the author realized that Coffee Island was polluting the environment. A solution needed to be devised to avoid heavy media attention and negative public opinion. Moreover, the solution must come through a mutual understanding and cooperation of all involved parties. The gap in the literature lies between the integration of technology and modern recycling. So, the present DBA thesis discusses a productive way of mixing recycling techniques with specific technological achievements that make consumers' lives easier.

The plan for the research was based on sending the e-questionnaires and conducting the four qualitative interviews. All of these processes are done according to the principles of critical action research. There are limitations to the four qualitative interviews. That is why four was the number chosen for practicality as well validity and reliability. Asking only one expert might lead to a biased opinion. Furthermore, when four different experts from alternative walks of life express their honest and impromptu opinion, better comparisons and analysis can occur.

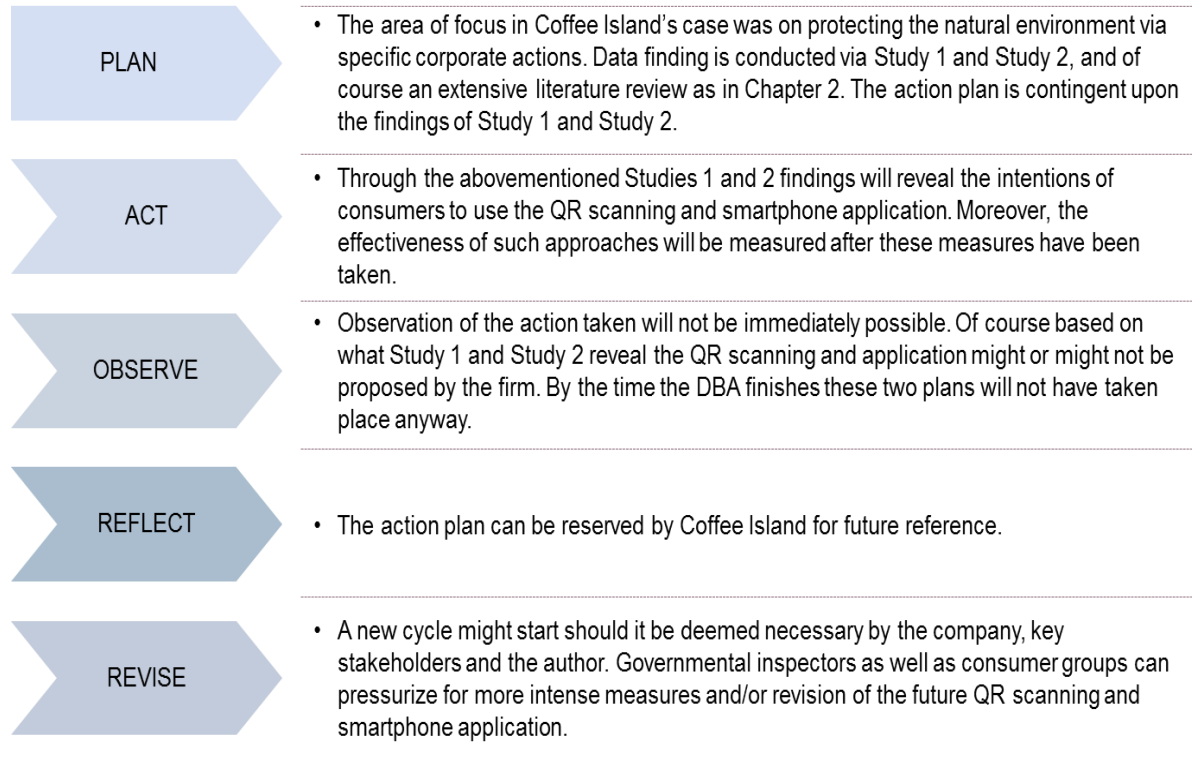
The qualitative interviews discussed what the proposed critical action research solution suggests to ensure maximum results. Expert views may apply in specific cases. Since each person expresses their viewpoint, experience plays a critical role. For instance, an NGO manager could potentially favour corporate social responsibility while a marketing manager, despite supporting the cause, might try to make a profit for the company. Collaborative action research necessitates the need to accurately identify an issue on time. Figures 4 and 5 show in detail all the steps of collaborative action research.



## Action Research Plan



Figure 4. A simple model of action research adapted from Lau (2013, p. 60).



**Figure 5.** Coffee Island innovation management model of action research.

### 3.3 Action learning cycle 1 of Critical Action Learning

The basic problem of the present research was that the pollution issue had to be identified and counted as one needing immediate action. Edmonstone (2019, p. 144) pointed out that through Critical Action Learning, a scholar-practitioner can support action and learning. Edmonstone's (2019, p. 144) fundamental point was that through Critical Action Learning, power relations among managerial members and stakeholders could be challenged. Coffee Island's existing status has been challenged because it generates a lot of pollution. At the same time, the public, government organisations, and the firm's management wish to find a meaningful solution to the matter. Trehan (2011, cited in Edmonstone, 2019, p. 145), explicitly mentioned that there should be an alignment between critical action research and the 'emotional and political' environment in which it operates. The author has reached congruence (Edmonstone, 2019, p. 145). Before engaging in Study 1 and Study 2, special permission was asked to ensure that the Ethical Approval Form followed the

University of Liverpool standards and Coffee Island's internal business policy procedures.

In October 2018, the author applied to the International Online Research Ethics Committee, the designated body for the DBA Application for Approval of a Project Involving Human Participants, Human Data, or Human Material. This was done since the DBA's format requires it as a necessary step to engage in research entailing human participants. Moreover, an application form, a participant information sheet, and a consent form were all submitted following the School's regulations and prevailing principles of ethical research. On every occasion, participants must be aware of the benefits of taking part in such research. They will receive feedback and an appreciation letter for their time and effort in the overall process.

Another important part of the first step of the author's Critical Action Learning was using the data that existed from current customers. It was relatively easy, as they had offered consent since they were on the customer's loyalty list, and Coffee Island granted permission to use the list. Furthermore, the use of the list allowed the research to find 300 people for the e-questionnaires survey quickly.

The participant consent form is written to make participants realise what is happening during their engagement in Study 1. Full anonymity is secured via the use of numbers instead of names for participants, and all data are safely stored in a password-protected laptop. The Research Information Sheet and Participant Consent Form were given electronically (for Study 1 participants) or through a hard copy (for Study 2 participants).

The title of the study took some time to be finalised. It had to be something innovative, as well as challenging to the existing literature. Although extensive literature existed on green marketing and QR scanning/smartphone applications, there was a dearth of a study combining those notions. So, the title includes both to clarify that the overall notion will be analysed, studied, and extensively researched. The thesis is called 'Developing an eco-friendly strategy via the use of QR codes and a smartphone application'.

### **3.4 Keeping notes and a managerial journal**

Critical Action Learning involves making informed decisions based on stakeholder analysis principles, various learning cycles, feedback, etc. The author has learnt to

utilise various managerial tools with time. To begin with, the initial thought of using Critical Action Learning in such a sensitive topic for Coffee Island was of great mutual benefit for the organisation and its stakeholders. With a careful note-taking procedure, the author successfully kept track of his thoughts on the overall problem of pollution and the one especially coming from plastic and glass. After all, most coffee products and confectioneries heavily utilise both. Keeping handwritten and subsequently, computerised daily notes allow for careful consideration of specific problems (i.e., pollution) and how meaningfully Coffee Island can tackle them. Lynam et al. (2010, p. 68) mentioned ‘active experimentation’ in their analysis of the experiential learning theory. Indeed, it was not that easy to first grasp the gravity of the pollution problem and then convince stakeholders to actively participate in meaningful and productive quantifiable measures to reach a solution.

Based on Kolb’s learning cycle (Lynam et al., 2010, p. 69), a virtuous circle can lead to learning in four following steps: ‘watching, thinking, doing, feeling’. Initially, the author embarked on a careful ‘reflective observation’ (Lynam et al., 2010, p. 68) of the issue by identifying various customer complaints and specific feedback from whistle-blowers, consumer groups, and personal intuition.

Lynam et al. (2010, p. 68) made a very keen reference when they discussed that it is paramount to ‘apply and test ideas’ theoretically and practically. This requires using them both in the paper via a computerised and/or purely theoretical discussion. If the project seems worthwhile and is approved by the appropriate departments, then it should be pursued to lead ‘active experimentation’ and ‘doing’ (Lynam et al., 2010, p. 68). In actuality, the author realised the matter, and through endless meetings with the owners and various stakeholders, decided to pursue the present DBA thesis.

### **3.5 Action learning cycle 2: Planning future actions and Critical Action Learning**

The second learning cycle of Critical Action Learning was constructing an in-depth and detailed literature review comprising as many academic journals as possible on green marketing, QR scanning, and smartphone applications. Ideally, the concept was to compare and contrast opposing viewpoints on the need for green marketing and its scope and combine it with modern technology. Since Critical Action Learning is learning by doing and motivating stakeholders, the author extensively researched the stakeholder salience and theory in various prestigious journal databases.

### **3.6 Action research cycle 3: Implementing action on Coffee Island's CAL**

The present chapter discusses the rationale and exact questions posed in Study 1, which contains the 300 e-questionnaires, and Study 2, which has four open-ended interviews with identified experts (namely a Coffee Island's Marketing Manager, a customers' representative, a Coffee Island's IT manager, and a green NGO manager). The first step in the present thesis is the primary data collection. The primary data collection is an important part of the thesis analysis. The e-questionnaire partly expresses it as an easy, inexpensive, and efficient way to contact many customers based on specific criteria.

These criteria require participants to be paying customers for at least two years and be in the 25 to 45 age group. There is a fifty-fifty inclusion of gender (males-females). After the data was digitally retrieved, the author securely saved them and started analysing them in detail to understand how social media usage for more efficient implementation of the project emerges.

The first ten e-questionnaire items (Table 3) emphasize filtering out participants who answered randomly. The filter question about age allows the author to see who answered randomly in the desired age range criterion. Moreover, although the author is aware that all participants are in a specific age group, it is difficult to know who owns a smartphone capable of QR scanning and whether they have Internet access. In Greece especially, smartphones run on a per Megabyte basis, and it is typical for users to run out of Megabytes during the day before they reach a Wifi hot spot.

Alternatively, they use a landline router, which offers unlimited Internet access at a monthly fee. The key success factor of Study 1 is the e-questionnaires response rate. That is why those who did not respond to the first e-mail were sent a second reminder e-mail. Overall, the response rate was very high. 89% of participants belonging to the firm's loyalty card programme responded.

Susman (1993, cited in Baskerville and Wood-Harper, 1996, p. 238), analysed that the action research cycle consists of a loop that starts from finding your 'client-system infrastructure' and then moves on to 'diagnosing, action planning, action taking, evaluating, specifying learning'. This loop is presented as a virtuous one by Susman (1983, cited in Baskerville and Wood-Harper, 1996, p. 238) since the very nature of Critical Action Learning is learning from experience, feedback, and obvious mistakes

made during every phase. In Coffee Island's case, a pivotal point in the first ten questions was to lock answers regarding the perception its key demographic external customers have, particularly how they perceive the company's role in polluting the environment.

In addition, a focal issue is how many of the customers have the technology (smartphone and Internet access, QR scanning technology), apart from the willingness to use it consistently. Motivation and feedback are vital concepts in repetitive behaviour; hence the research wanted to explore and analyse the results of the first ten e-questions.

### **3.7 Concluding remarks on Critical Action Learning and thinking**

The thesis has learnt from experience and the learning cycles of critical action learning that any problem needs to be broken down into smaller parts. Also, a key issue in identifying any problem is to conduct a stakeholder analysis and receive contrasting viewpoints on the matter. In Coffee Island's case, it is clearly expressed that the organisation pollutes the environment. Thus, every possible effort shall be made to reduce the negative externalities of production and consumption (i.e., clutter, plastic waste, disposal of final goods, litter, etc.). The comprehensive literature study revealed that firms are seen as profit-making organisations by the public. In some cases, the negative term 'greenwashing' describes that companies are hypocritical when mentioning and applying recycling efforts.

The author desired to make Coffee Island an ethical global citizen that acts at the edge of its productive capability curve to reduce pollution and litter. This can be done through the four qualitative interviews with experts and the quantitative analysis of e-questionnaires. Vince et al. (2018, p. 88) indicated that individuals are affected by specific 'action learning groups', so answers from a specific group member could express the group's opinions. Both methods have limitations; hence, a mixture of those is used to reduce the cons over the pros. Moreover, the present research attempts to resolve the problem actively, not only with the mere mention of possible solutions but also critically finding a meaningful and effective solution to reduce pollution measurably.

Ideally, after the thesis is written and the project is implemented, a meta-analysis takes place to review to what extent the case was improved, what went right or wrong

and analyse the impact of the particular critical action solution on a given situation. Vince et al. (2018, p. 88) wrote that organisations at times place ‘limits to and possibilities for leaning’ for their stakeholders. Through the process of unlearning, the author realised and implemented solutions that might not have been considered and accounted for previously.

What helped the author proceed with his learning circles was that he engaged in tracking down the ideal way of proceeding to primary research after identifying the problem and conducting an extensive stakeholder analysis.

The following paragraphs present the mechanics of Study 1 and 2 and scrutinise why they were chosen and their perceived benefits.

### **3.8 Mechanics of the thesis methodology and Study 1 and Study 2**

Study 1 and Study 2 namely involve a lot of research in green marketing. More particularly, to identify specific notions regarding the way consumers perceive recycling as important and of benefit to society, stakeholder analysis was conducted. Moreover, Study 2 has to do with an analysis of open-ended interviews with management experts to dig deeper into the realm of reciprocal marketing in terms of recycling, reward programmes, and everything covered under the umbrella of QR scanning and a smartphone application.

All participants, both the e-questionnaire samples and the four experts, were given a Participant Consent Form 24 hours before participation (Appendix 3, Participant Information Sheet - Study 1, Appendix 4, Participant Information Sheet - Study 2, and Appendix 5). Items appearing in Appendix 4 and 5 were given 20 minutes before the actual filling-in process so that participants had sufficient time to read and comprehend them.

#### **3.8.1a Study 1 and e-questionnaires**

Through the critical action research, the author identified that the problem could be solved partly by the firm increasing its recycling efforts and partly by engaging consumers in the whole process. Any attempt by the company to alleviate pollution would not be that successful unless paying customers of the beverages and confectioneries like the cooperate and embrace whichever initiative it takes. Critical Action Learning is about learning from experience, analysing case studies, and

embarking on the project as an observer and an active researcher. In the case of Coffee Island, three main research questions are asked relating to how the firm can reduce pollution. One was a) how many customers will be willing and able to use the smartphone application and QR scanning consistently to reduce pollution generated by Coffee Island. The 300 e-questionnaires focus on this part.

The majority of the respondents were in the age group of 25 and 45 as they are heavy users of coffee, confectioneries, and similar goods. Furthermore, according to previous statistics, they tend to increase their consumption even more in the years to come, so it is logical to ask them about this specific eco-friendly marketing project. Another criterion for them was that they must be paying customers for at least two years. This was easily identified from the database through their initial date of registration with the system and their frequency of purchases. Inactive accounts were blocked out from the e-questionnaires.

E-questionnaires are friendly and efficient means of reaching many prospects. The positive part is that they are low-cost, efficient, and fast. Magoutas et al. (2010, p. 730) cited some problems which e-questionnaires might have. They included the reluctance of participants to take part in web surveys, the former not wanting to complete an extensive e-questionnaire, and users may differ in their experiences with the company and may not have the same mentality or values.

To reduce some of these problems with the e-questionnaires, the author constructed them not to tire the respondent, would offer him/her the chance to receive the final dissertation when completed on request, etc. Most importantly, saving the planet and creating a sustainable future is a reward in itself, and the wording of the invitation letter made it clear.

The number of questions was kept to a bare minimum to encourage complete answering since Magoutas et al. (2010, p. 730) have written, 'completeness of the questionnaire' can be a real challenge if the latter is wordy, poorly written, requires a lot of time and energy from the participants. So far as the issue of different experiences is concerned, different people might perceive the world differently, have distinct buying patterns, ecological perception, diverge ideas of impacts of their actions on nature through daily transactions, etc. This is the reason 300 different



people were chosen and asked to participate in the survey so that the results add reliability and validity to the research.

A very interesting part of the e-questionnaires is the context that focuses on ‘what specific actions will be taken in collaboration with users/customers proposals to reduce pollution?’. Critical Action Learning analyses a problem but most critically finds a solution to it. The author has proposed using QR scanning and a smartphone application to keep users of Coffee Island accountable to actively recycling and understanding the benefits of their actions, mainly through technology (i.e., a QR scanning screen and/or a smartphone one). Ogle et al. (2013, p. 66) noted that e-mail questionnaires could be a good supplement to paper if used correctly. Indeed, part of the author’s future strategy is to gather data through the present thesis research and follow up on them in the years to come. Ogle et al. (2013, p. 66) further commented that some research on the hospitality industry embraced the e-mail approach for the research and for offering updates and special offers to customers.

Through the e-questionnaires, participants were informed about the potential positive externalities that the novel cause might create for the planet and society. On any occasion, being selected to participate in the research could be considered a privilege to them as they get the chance to express a certain viewpoint on the way Coffee Island did business. Jacobs (2015, p. 12) stated that ‘the primary reason for engaging in action research is to assist the actor in improving or refining his or her actions’. The Coffee Island case is precisely that. It is much needed to reach specific questions and gather conclusive evidence on whether participants would be willing and able to participate in the recycling programme through QR scanning and/or the designated smartphone application.

According to Jacobs (2015, p. 17), feedback is a strong motivator for its recipients and a tool for those using and practicing it. The e-questionnaire included Likert-scale questions on three major questions, depicted in the following table 2. They were meant to collect feedback and unbiased opinion of 300 participants.

*a) How many customers will be willing and able to use the smartphone application and QR code scanning consistently for the purpose of reducing pollution generated by my firm? And the other two subsequent questions based on the first one (which is the*

key one) are:

*b) What specific actions will be taken in collaboration with users/customers proposals to reduce pollution? (Users/customers will be interviewed through the e-questionnaire) and,*

*c) Which factors will influence customers' decision to participate in the QR codes/smartphone application e-marketing?*

Table 2. Three basic questions that are the pillars for the e-questionnaires in Study 1.

Action cycle three in critical action research is all about taking action. Through the meticulous gathering of information and feedback from the samples (300 participants), the author reached a stage where data can be analysed to draw specific conclusions and evidence on the overall proposed thesis project.

### **3.8.1b E-questionnaire design and execution**

An e-questionnaire was sent to 300 different participants, seeking their opinion on the overall project of how exactly to reduce pollution through technology. Their opinions were examined to identify the usefulness and potential room for improvement for the proposed smartphone application and QR scanning process.

The key goal is to answer three basic questions when the e-questionnaires are retrieved and scrutinized. The first one is to track down how many customers will be willing and able to use the smartphone application and QR code scanning consistently to reduce pollution generated by Coffee Island. The rationale behind the question was for participants to measurably write down their intention of using the application and the overall QR scanning.

Furthermore, apart from willingness, their ability was specified. For a user to engage in the process, it requires certain technical criteria like having access to the Internet (i.e., via Wifi network or through an Internet Café). Another necessary condition is to have a smartphone that has the capability of QR scanning since out-of-date smartphones and generic non-Android or non-iPhones cannot utilise such scanning. The following e-questionnaire questions (Table 3) correspond to the above-mentioned material and how the author tried to cope with them.

**Question 1:** About the participant. What is your gender?

Male  Female

**Question 2:** What is your age?

20-22  22-25  25-30   
 30-35  35-40  40-45   
 Other

**Question 3:** How many years have you been buying goods from Coffee Island?

0  1  2  3  4 and more

**Question 4:** Do you consider Coffee Island as a firm which pollutes the environment?

Yes  No

**Question 5:** Do you currently have access to the Internet on a regular basis?  
 (More than 20 hours per day via any means i.e. Wifi network, USB connection, Internet Café access).

Yes  No

**Question 6:** Do you personally own, carry and use a 3G smartphone (or newer version) on your daily routine while shopping at super-markets, retail shops etc.)?

Yes  No

**Question 7:** How often would you use an application which can reduce pollution generated by humans? (only mark one)

Zero times per week  Once per week  Twice per week  Three or more times per week

**Question 8:** Which of the following, if any, are deemed useful by you in order to use a smartphone application aimed at reducing pollution? (Mark as many as necessary).

Speed of the application  Reward points   
 Cost of using it  Graphic design and sound effects

**Question 9:** Have you ever used QR scanning from your mobile phone? (only mark one)

Never  1-50 times  51-100 times  More than 100 times

**Question 10:** What can motivate you to keep using an eco-friendly application? (mark as many as necessary)

Seeing the results gained via a graph at the end of each period (like an accountability design graph)   
 Gaining points the more I participate (i.e. more recycled bottles more reward points in vouchers)   
 Reminders by my smartphone at regular intervals   
 Famous people promoting the application   
 Participating in social media support groups which actively promote recycling via the specific application

Table 3. E-questionnaire, first ten questions.

**Question 11:** Which social medias do you use? (Tick as many as appropriate from none to potentially all if you do use them).

Facebook	<input type="checkbox"/>	Twitter	<input type="checkbox"/>	WhatsApp	<input type="checkbox"/>	WeChat	<input type="checkbox"/>
QZone	<input type="checkbox"/>	Tumblr	<input type="checkbox"/>	Instagram	<input type="checkbox"/>		

Table 4. E-questionnaire, 11th question.

Table 4 illustrates an e-questionnaire question on specific social media that sample uses. It is aimed to find the channel through which they can be contacted to communicate the message of the upcoming application and QR scanning procedure, besides a regular e-mail newsletter.

This specific question is set to evaluate the social media use of participants. A working hypothesis is that since viral marketing exists for a long, the heavy usage of different social media could lead to higher acceptance of recycling applications. Coffee Island can aim at specific social media, based on the findings of *Question 11*, and promote the application to the target market (25–45-year-old consumers) through marketing, direct advertising (i.e., banners), and cross-sales promotion via viral marketing and agreements with large-scale online firms like Facebook.

Going viral is a popular contemporary phrasal verb in the English language, implying spreading across a broad audience. Coffee Island intends to go viral with the specific application. It aspires to put up YouTube recycling challenges, post photos on Twitter and Instagram of the app, and QR scanning to boost popularity and use digital tools. Tellis et al. (2019, p. 4) mentioned possible reasons for social media sharing. Reasons for social media sharing can be ‘self-serving, social and altruistic’. In terms of self-serving, Tellis et al. (2019, p. 4) commented that it is done so that an individual feels well and comfortable with herself. Promoting recycling helps the overall society and economy, albeit it could promote a person’s self-image. As a polar opposite, altruistic motives might exist amongst social media users who will embark on sharing the activities to ‘help others’ (Tellis et al., 2010, p. 4). In the author’s opinion, the vast majority of the sample falls somewhere between those two extremes. Recycling has some personal motivators, yet the author does not consider them strong enough to stimulate action without the social element and the global trend towards recycling.

Especially in Greece, climate change partially caused by pollution is prevalent, and last year, many people died due to it.

**Question 12:** How likely is it for you to suggest a recycling application to a friend/relative/person from your social network? (Mark from 1 least likely to 5 most likely).

1      2      3      4      5  

Table 5. E-questionnaire, 12th question.

This question is strategically asked, as cross-referrals and suggestions can help improve the chances of the firm's success, especially at the application level when a person uses an application and collects points, for example, *green coins*, which creates competition amongst users. Moreover, QR scanning can go hand in hand with the application as many smartphone cameras scan the codes of retail goods. Subsequently, the recycled items can add points to their accounts.

The above-mentioned term 'green coins' is newly introduced in the thesis. It can act as a motivator for users of the service, firstly to keep them accountable for their contribution to recycling and, more importantly, promote engagement in the plan via positive feedback and reinforcement. Green coins can act as a reward and improve the efficiency of the application.

**Question 13:** Suppose that through using the application you are awarded green coins which correspond to various Coffee Island gifts (i.e. vouchers, free coffee mugs etc). Would that encourage you to keep using it more? (Tick from 1 to least likely to 5 most likely).

1      2      3      4      5  

Table 6. E-questionnaire, 13th question.

Question 13 has to do with a basic Critical Action Learning notion, that of management by learning and positive feedback to the desired action. Since learning from experience is a crucial component of Critical Action Learning, the author wishes to positively condition potential smartphone application users. Such conditioning can take place via a reinforce action like the proposed *green coins*. The brain releases

specific chemicals viewing cash in any form and makes humans more aware of any action they engage in. The green coins will be virtual and not have any token value, albeit they will be easily traded for monetary discounts at Coffee Island’s stores and gifts like coffee mugs, summer caps bearing the firm's logo so on.

**Question 14:** Which of the following means of communication will cause you to keep using a recycling application for long term?  
(Tick as many as appropriate).

Reminder       Vouchers       Reward program       WeChat

Virtual prizes       Social media exposure (i.e. Facebook notification that a certain recycling goal was achieved)

Table 7. E-questionnaire, 14th question.

In Question 14, a paramount action of retention is mentioned. Critical Action Learning is a marathon instead of a race to reverse a negative situation. Organisations pollute the environment, but to turn the tables, a recycling application must remain active with supporters and new entrants continuously. Moreover, retaining old users is equally important as there is no point losing 1,000 users and gaining 900 new ones.

**Question 15:** The recycling program may be endorsed by a world renowned athlete coming from the NBA (USA professional basketball). Will such an endorsement convince you to use a recycling application?  
(Mark from 1 the least possible to 5 being the maximum possible).

1       2       3       4       5

Table 8. E-questionnaire, 15th question.

Question 15 is primarily targeted at sports fans who theoretically enjoy watching an NBA star performing on the field and actively using, promoting, and endorsing the recycling application. Opinion leaders are vital in some marketing campaigns as they have a given number of fans linked with firms that produce certain goods (from sports equipment to food/shampoos/beverages). Hence they can cross-promote the application. Merwe and Heerden (2009, cited in Nunes et al., 2017, p. 59), indicated that opinion leaders could influence their followers in three ways: ‘serving as a model to be copied, through word-of-mouth advertising, or by advising on purchase and use’. The author desires all three means of influence. Followers typically support and,

by definition, will follow the actions of their idols. However, this is not a sure-proof action; yet, the likelihood of an opinion leader influencing a certain group of people is more significant than any random personality trying to promote recycling (or other activities).

Nunes et al. (2017, p. 61) suggested that to convey a persuasive message and subsequently achieve the desired use/purchase of a good/service. Firstly, the audience should be made to listen to the information and accept them. At the same time, their attitude needs to be changed towards positivity from a neutral or negative one. The thesis proposed that an opinion leader can positively affect the recycling campaign via Instagram and other social media exposure.

Kuwashima (2018, p. 243) narrates the importance of hashtags since they allow easier search on the Internet and readily attract likes. Yet again, this proves a powerful weapon in the digital arsenal of the proposed green marketing campaign. Hashtags are symbols used in any social media to refer to a certain place, activity, quote, application, etc. Since they are a symbol (#) they are readily available to anyone owning a standard computer keyboard. Viral marketing can create a snowball effect regarding the application's success, as more exposure could lead to more users, and finally to a higher level of recycling of plastic bottles, confectioneries packages, etc.

<p><b>Question 16:</b> How likely are you to QR scan items purchased from Coffee Island before disposing them in designated areas of recycling (i.e. recycling parks, recycling bins, Coffee Island's green hot spots designated for recycling)? (Tick from 1 to least likely to 5 most likely).</p> <p>1   <input type="checkbox"/>   2   <input type="checkbox"/>   3   <input type="checkbox"/>   4   <input type="checkbox"/>   5   <input type="checkbox"/></p>
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Table 9. E-questionnaire, 16th question.

The author raises concerns about QR scanning and the inconvenience it might pose before the users. It will take time and effort to separate them, and after that, take out her phone and QR scan them. Time is money for some users, so they may not be willing to use the tool. It is also proposed that the QR scanning will take place before throwing the item into the designated recycling place to ensure that users do not scan random firm's items to collect the green coins. Additionally, a recycling drive-through can be dangerous since the driver will need to steer her vehicle and subsequently scan and discard the goods, which raises security concerns.

McCray et al. (2018, p. 71) elaborated that in Critical Action Learning participants can develop a sense of 'self-awareness and reflection'. The author wishes to capitalise on that. The e-questionnaire is a first step in at least making the participants aware of their role in polluting the environment and any potential steps that can be taken to reverse the situation.

The e-questionnaires were designed to analyse the willingness and ability of a critical demographic group among Coffee Island's existing customers to continuously and meaningfully utilise the proposed application and QR scanning. Moreover, the author made an effort to make the e-questionnaire ergonomic, efficient, and easy to read. Most importantly, it is designed to help promote a high response rate.

A high response rate was achieved by asking participants to checkboxes and engage in as little writing as possible. Knowing that some participants might answer at random to get over with the questionnaire, a filter question was used. Both genders were included in the study. All key demographics used in the e-questionnaires are a minor image of the average customer in any privately-owned or franchise-operated Coffee Island retail stores.

Obviously, such an e-questionnaire is designed to address the average customer and get into more detail on how exactly the firm can alleviate pollution via an effective intervention, including the firm and its customers. Minto et al. (2017, p. 158) reported that e-questionnaires offer a wide array of benefits like 'speed in collection and data analysis, personalized design for target sample, lack of influence of researcher presence, comfort for respondents who can complete the questionnaire when and where they prefer'. So, all these key benefits allowed the author to send e-questionnaires to customers who fitted the key demographics criteria and shopping patterns from Coffee Island stores.

On the other hand, Minto et al. (2017, p. 158) pointed out some problems that e-questionnaires typically have, like sampling due to 'low connection, small bandwidth, browser configuration'. The author addressed this issue in the e-questionnaire by listing customers who were already digitally listed as loyal customers, had included their e-mails, and had ready access to the Internet. For dealing with the issue of 'non-response' (Minto et al., 2017, p. 158), the author sent a second request to those who did not respond at the first time as a reminder of the e-questionnaire. Also, Edwards et



al. (2009, p. 6) clearly stated that when a ‘white background’ was used in the e-mail, it favoured the chances of a reply. Indeed, the present thesis utilised a white background to improve responses vis-à-vis a black background.

After the data were gathered through e-mail responses (on Coffee Island’s domain e-mail address), the author securely retrieved them in a password-protected laptop’s hard disk. Each questionnaire was marked with a number to ensure anonymity. The author wishes to emphasise that all ethical management as dictated by the University of Liverpool was strictly followed to protect personal data, anonymity, etc.

### **3.8.2a Study 2 and open-ended interviews**

Study 1 is the basis of the author’s primary research. Its basic form contains a lot of input about how customers perceive Coffee Island’s intentions to conduct the proposed eco-friendly project. The research wishes to extend this specific notion of Critical Action Learning to other stakeholders, besides its paying customers. The key concept of Critical Action Learning, among other things, is stakeholder analysis and stakeholders’ salience. Extending the notion of CAL, this study will try to understand how stakeholders, people, and legal entities, who are directly or indirectly affected by the company’s actions, react to and perceive the recycling programme through the QR scanning and the designated smartphone application.

Study 2 comprises four qualitative interviews: interviews not in a Likert-scale, but an open-ended format to elicit responses to key issues on the value, usefulness, and purpose of the recycling effort. Four significant stakeholders were identified to participate in the four interviews. Their opinions can be compared and contrasted to those found in Study 1 and the literature review.

The four interviews took place with the following participants: a Coffee Island’s Marketing Manager, an eco-friendly NGO manager, a customer’s representative agent, and an IT programmer of Coffee Island. The firm’s Marketing Manager was chosen since the project combines sales, customers’ data, and purchasing decisions based on specific notions and beliefs. Moreover, the green-oriented NGO manager has a saying in the project as indirectly it can affect the whole planet by reducing the negative externalities both of production and consumption. The customer’s representative had a saying on the project and expressed his opinion as, by default, he was given a chance to speak on behalf of a broad consumer basis.

It is grounded that experts' opinions should and will be taken under consideration as they depict aspects that might not be revealed either in Study 1 or the literature review. Edmonstone (2019, p. 137) made an excellent point on wicked problems and stated that a social problem could not have a one-size-fits-all answer, nor a solution that will indefinitely be appropriate. Finding a solution in perpetuity is not feasible based on Edmonstone's (2019, p. 137) writing, hence 'human diversity' and 'social structure' must be kept in mind when dealing with a wicked problem. In the case of recycling, 'time, place and historical circumstances' (Edmonstone, 2019, p. 137) are important issues and dimensions. More specifically, nowadays, smartphone usage in Greece is at an all-time high. So, it makes eminent sense to at least try to utilise such a technological tool.

Furthermore, the project took place in a country where heavy coffee drinkers, confectionery consumers, and caffeine-based beverage drinkers reside. The European Union pressurises state members to reduce pollution; otherwise, it will impose heavy fines and implement other consequences. Finally, the circumstances seem ideal. Many countries like the United Kingdom have abolished plastic straws, disposable plastic utensils, and plastic in basic goods (i.e., plastic cups). Even the Royal Family refrains from using plastic in its coffee drinking habits.

Also, open-ended interviews were selected as the means to ask the four abovementioned experts (namely a Coffee Island's Marketing Manager, a customers' representative, Coffee Island's IT manager, and a green NGO manager) to generate responses to such a wicked problem. All of the participants are familiar with Coffee Island and the pollution it creates, and its organisational culture and have been engaged in recycling efforts. Transparency of the qualitative data and credibility was ensured via the application of thematic analysis.

Thematic analysis is a 'translator for those speaking the languages of qualitative and quantitative analysis, enabling researchers who use different research methods to communicate with each other' (Nowell et al., 2017, p. 2). The author of the present thesis took the interviews, transcribed them, and subsequently analysed and scrutinised as a scholar-practitioner all the answers of the four experts. Credibility on the interviews can be gained via 'prolonged engagement, persistent observation, data collection triangulation, and researcher triangulation' (Nowell et al., 2017, p. 3).

Through open-ended questions like ‘What is your opinion on the effectiveness of the programme in a measurable reduction of pollution created by Coffee Island?’, respondents are not prompted or biased into a specific response. On the contrary, they are allowed to answer freely. The screening was used to analyse and better interpret their answers. Such a procedure took place during the interview process if the reply was deemed as not satisfactory.

Reynolds and Vince (2004, p. 443) wrote that ‘experience’ is not a reliable tool for many academics as a focal/beginning step to create a certain theory. Reynolds and Vince (2004, p. 443) further mentioned the need to place ‘learning’ in a manager’s daily ‘working context’. In the case of Coffee Island, such an issue can be materialised as the author can learn from experience, particularly from Study 1, Study 2, and the literature review. The subsequent analysis of the findings and the decision of whether the proposed project will be finally implemented or not shall be parts of the overall learning experience. Study 2, through its open-ended questions, has to deal with critical opinions on recycling and the thoughts of experts inside and outside the firm. As confidentiality is kept to the maximum possible degree, their opinions are unbiased, somewhat strict on the firm's intentions, and the program's potential effectiveness. Reynolds and Vince (2004, p. 447) mentioned that organisational learning must occur through a ‘practical reflexivity’ as there is the need to have a continuous exchange of ‘learning and critique’. So, combining the critique coming from Study 2 with analysis can be a positive attribute of the thesis research and the author’s managerial learning from both experience and theory.

### **3.8.2b Details of the approach to interviewing, critical details about the interviewees, and mechanics (methods of execution) of the interviews (Study 2)**

The interviews consisted of open-ended and Yes/No questions for the four experts. Seeking an overview was the interviewing approach. Such interviews allowed the researcher to dig into the expert’s opinions.

Tavory (2020, p. 451) mentioned the ‘desirability bias’, in which ‘people want to put their best foot forward, and so are less likely to tell the interviewer things that they think would reflect badly on them’. Indeed, all open-ended questions were designed to create as little personal discomfort as possible. Moreover, no question pointed towards the ‘stigmatized aspects of the self’ (Tavory, 2020, p. 451).

All questions focused on personal opinions about the pollution Coffee Island is currently producing or asking them to offer constructive criticism. They were also asked to provide suggestions on alleviating the specific problem via the proposed intervention based on the merits of Critical Action Learning. Learning from the experts is a vital point of the present thesis.

Coffee Island wishes to elaborate more and analyse the nature of the overall pollution problem. Study 1 is most important for the thesis, but additional external information can be potentially valuable. The critical point was to identify the mechanics through which a reduction in negative externalities of production and consumption caused by Coffee Island can be reduced.

Furthermore, every firm has external customers, those who pay for drinks, beverages, confectioneries, and internal stakeholders who engage with the company even if they do not directly purchase goods. Stakeholder salience and stakeholder analysis are paramount in the author's writing. It is recognised that most organisations do not operate in a vacuum but are part of a thriving and turbulent environment that interacts. For example, an NGO manager might offer feedback on how he and his organisation see such a campaign. Jones et al. (2018, p. 371) commented that according to 'instrumental stakeholder theory', companies develop close relationships with groups immediately or indirectly affecting each other, and these are characterised by 'trust, cooperation, and information sharing'. A fundamental issue is developing such well-grounded relationships with parts of the community. Thus, the two interviews with the eco-friendly NGO manager and the customer representative agent.

Creating lasting relationships is something that Coffee Island is interested in; hence every effort will be made to reduce pollution through the two interventions mentioned in the thesis. Over time, it will build collaboration networks to reduce these externalities further and continue a potentially fruitful relationship in the realm of pollution reduction efforts and strategies, ideally via meta-analysis.

According to Jones et al. (2018, p. 371), an organisation can 'co-create more economic value with stakeholders' under conditions like having stable relationships, efficient communication, and trust. In Coffee Island's case, this is highly desired. Since both projects will cost a lot of money, there is an inherent risk. Moreover, management experts, government officials, and whistle-blowers have already

scrutinised the organisation about any pollution it might create. Through an integrated and scientific Critical Action Learning approach, the company shall learn from the experts by asking their opinion on the topic. Also, it will engage with them for their constructive criticism on improving the measures to resolve the issues.

Finally, the IT programmer can offer some insight into how the proposed Critical Action Learning programme is feasible based on a key managerial concept of SMART goals. The managerial principle of SMART goals includes ‘specific, measurable, achievable, realistic, and time-bound goals’ (Srivastava, 2015, p. 30). The author claims that this is the route to follow to make the proposed intervention work. Since Coffee Island does pollute the environment, the four experts will answer questions based on their experience and qualification, which shall address and review the organisation’s strategy. For instance, QR scanning is deemed to help in an active reduction of pollution. Srivastava (2015, p. 30) also wrote that SMART goals empower a manager to ‘evaluate employees’ performances without any biases and unilateral decisions’. Yet again, this is a vital concern in Critical Action Learning. Learning from experience is a must in Critical Action Theory, and being adaptive as a learning organisation in a turbulent environment is mandatory. Hence, the author’s evaluation of the employees’ ability to change will be decisive in implementing both the smartphone application and the QR scanning.

### **3.9 An analysis of the four Experts’ profiles**

For obvious reasons of anonymity and personal data protection, the four names are not be given in the present thesis. On the contrary, the four experts will be codified under the key code names Ex1, Ex2, Ex3, and Ex 4, which correspond to a Coffee Island’s Marketing Manager, an eco-friendly manager representing an NGO, a customer’s representative agent, and an IT programmer of Coffee Island, respectively. So, the following information is essential to understand why these experts were chosen and how they contribute to the exploration in the CAL genre in this thesis.

<b>Ex1 (Expert 1)</b>	Male. He is one of Coffee Island’s Marketing Managers. He has over ten years of experience running marketing campaigns for the company, mostly on the Internet, television, and fliers. His opinions are quite important to the campaign's success since all the messages will be
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communicated through his department. In the first place, customers and potential users will be notified that the application and QR scanning are available. Another thought is to make the application and QR scanning open to non-buyers of the goods we offer. For instance, someone else might have coffee bottles from Coffee Island, and a relative or friend might wish to recycle and gain green coins. The expert approved the idea and believed that it could be effective.

Expert 1 has a wide knowledge of Coffee Island's organisational culture and, most importantly, knows the logistics of utilising marketing concepts and environmentally-friendly initiatives. Therefore, he was chosen to take part in Study 2.

**Ex 2**  
**(Expert 2)** Male. He is an eco-friendly manager representing an NGO. NGOs are a growing part of the contemporary Greek market. Although NGOs do not directly buy goods or services from Coffee Island, they engage in social media, the press, and other forms of communication (the Internet is their primary arsenal) to comment on actions large-scale firms take regarding the environment and their potentially harmful effects on it. His experience is more than 12 years as an NGO manager. He is highly concerned about environmental sustainability, so he was chosen to be interviewed because he is proficient in environmental control and an external customer.

**Ex 3**  
**(Expert 3)** The customer's representative agent is again a male and has three years of working experience in the post. His contribution to knowledge can be significant, too, because he interacts with customers of Coffee Island daily and can communicate messages back and forth. Since he is already aware of the firm's business and organisation culture and has reached thousands of customers over his three years of tenure, he is characterised as an efficient link between the company and paying customers.

**Ex 4**  
**(Expert 4)** Male. He is an IT manager of Coffee Island. Based on the fact that the project relies solely on electronic means, i.e., the smartphone

application and the QR scanning, he has a saying in the overall intervention. CAL is all about learning from mistakes and mishaps. The author considers that although the cause is novel, the audience needs to embrace and love it.

What will distinguish the specific two projects from thousands of similar applications? Will it be easy, convenient, and, positively speaking, addictive to users to make heavy and continuous use of it? Will Coffee Island find new users and increase future usage by the application users? All these issues are to be discussed with the IT manager.

Table 10. A presentation of the four experts' profiles in terms of their level of experience and expertise on recycling, information technology, and/or corporate social responsibility.

### **3.10 Open-ended interview questions with the four experts**

The open-ended interviews took place in Coffee Island's premises, Athens, Greece. The location was the author's office, and it was selected due to ready availability and convenience. The data were immediately retrieved using a tape recorder. The questions were open-ended to ensure the easiness of answers and not to bias an expert. In typically dichotomous questions requiring merely a Yes or No answer, the interviewer followed up with seeking justification and further analysis of the Yes or No.

The open-ended focused on identifying the level of knowledge these experts have, the extent of their desire to offer knowledge and value to the thesis, and any potentially interesting items they may contribute to the research. Section 3.10 presents the exact questions asked. It also deliberates on the rationale behind what the author wishes to gain in terms of knowledge and insight regarding the tools and techniques Coffee Island plans to implement to reduce negative externalities in production and consumption.

**Question 1:** *What is your knowledge about Coffee Island's pollution generation? Do you consider it to be excessive or not?*

<b>Question 2:</b>	<i>Please name which factors actively encourage a user to start and maintain steady use of a smartphone application?</i>
<b>Question 3:</b>	<i>Please name which factors actively encourage a user to start and maintain steady use of QR scanning?</i>
<b>Question 4:</b>	<i>How should Coffee Island promote the application and QR scanning? Discuss various channels of communication with key stakeholders.</i>
<b>Question 5:</b>	<i>Present factors which will make a Coffee Island customer suggest and make the application viral? To what extent referral rewards could help the application succeed?</i>
<b>Question 6:</b>	<i>Do you consider that the general public will see Coffee Island's green marketing campaign with suspiciousness and not embrace it because it might consider it greenwashing (using marketing to mask pollution generated over many years in great amounts?).</i>

Table 11. Open-ended questionnaire.

Semi-structured interviews were used. Some questions can be answered with a yes or a no, yet the author explicitly asked all experts to justify their answers. The merits of semi-structured interviews are various. For instance, they offer a relaxed context within specific limits of getting extensive raw data for further explanation (Peesker et al., 2019). Additionally, semi-structured interviews allowing storytelling and sharing of previous knowledge so as the interviewer gains insight into past experiences (Peesker et al., 2019).

*Question one* aims at a stakeholder analysis and a 360-feedback. Since both internal and external customers are interviewed, their opinions should be tracked and ranked. Furthermore, it is ideal not to have any biased answers. Through the initial wording of the experts and observing their way of answering, the author tried to detect any bias in the answers. The positive thing about open-ended questions is that experts will be free to elaborate on how much pollution the company is producing.

*Question two* has to do with the mechanics of the overall project. Recycling is a novel cause, provided it is done correctly and ethically. The most vital issue is to engage the firm's key target market and other prospects who may become new users of the



company products. *Question two* focuses on smartphone applications. The NGO expert has a lot to offer as an outsider to the company. On the other hand, the IT expert was able to provide feedback on the practicalities of both the smartphone application and the retention of users. Some initial users might delete the application after some period if they become bored using it, find it meaningless, or are not motivated enough to keep having it on their smartphones.

In line with *question two*, *question three* keeps exploring the technological apparatus through which pollution will be reduced in the years to come. The focus is on QR scanning. The author wants to create a synergetic effect to motivate existing users to access the application frequently. At the same time, the author seeks to multiply their usage by making it easier with simple barcode scanning of items to be sent for recycling.

All experts' opinions are important, but the author values Expert's 3's opinion on QR scanning. Many Coffee Island items are sold either at franchise stores or retail (i.e., supermarkets, convenience stores, vending machines). Therefore, getting inside information of customers' intentions and perception of their desire and ability to engage in QR scanning can be a decisive factor in realising how well such an intervention may work as far as recycling success is concerned.

Starting the whole critical action was based on Critical Action Learning theories. Now, it is time to embark on the project. Yet, a focal issue is communication channels with the target market – the existing users of Coffee Island's goods. They should be reached before the launch of the application and the QR scanning initiative. Decisions need to be made about the optimal time.

Moreover, placing public ads could motivate prospects who never or rarely bought Coffee Island items to start using them just because they became aware of them and/or are interested in participating in a novel cause. The Marketing Manager (Expert 1), with his vast experience in integrated marketing communications, has a lot to offer and suggest in terms of materialising the attempt. Reaching key demographics and conducting a proper market segmentation can help the overall success of the current mega project of green marketing.

Word of mouth, suggestions and referral programmes are highly desired in contemporary marketing by most organisations. Sciandra (2019, p. 69) mentioned that

‘the presence of a referral reward for the recommender is unlikely to generate strong feelings of reactance in the recipient’. A referral reward is a tool often used in marketing. It could be green coins or even some other form of reward helping generate leads and make the application viral. The initial hypothesis is that it has the propensity to help. Sciandra (2019, p. 69) emphasised that individuals with strong ties with a brand have a higher probability of being noticed. This is because they are considered ‘as pure in intention’. Purity in intention is most appreciated as it increases the likelihood of acceptance of the proposed application by potential new users.

Ideally, Coffee Island’s recycling application could go viral. Hence, some form of a snowball effect vis-à-vis its use can be created, making users feel rewarded through give-back programmes like green coins, virtual awards when a certain recycling goal is reached, and posting high recycling results on social media to create competition amongst users, etc. Experts can contribute their ideas and give new insight into the issues.

The most novel of causes might hide something. The author is keen on observing the experts’ opinions on that. Since Coffee Island has been polluting the environment, the general public’s degree could be suspicious regarding the company’s honesty and true intentions is a potent question. Confronting such a scenario is profoundly damaging for Coffee Island. Yet, it should be taken seriously under consideration on all occasions. Van den Bulte et al. (2018, p. 133) discussed that when a firm’s offerings match a customer relating to the overall product offered, this results in ‘greater satisfaction and lower churn’.

Losing customers to competitors like McDonald’s, Starbucks, and the like is something that no competitive firm wishes to happen. Subsequently, making an active match between crucial target markets of Coffee Island and itself will make existing customers ‘know the firm’s offerings better than noncustomers do’ (Van den Bulte et al., 2018, p. 133). If existing customers actively match with Coffee Island’s offerings, new suggestions and referrals to the application and QR scanning could appear in the foreseeable future. If customers are suspicious of Coffee Island’s intentions, churn (lost customers) problems could come up.

### **3.11 Prologue to the next chapter**

The subsequent chapter illustrates in detail the four qualitative interviews with the experts. All of them were chosen as stakeholders. This means that they have a lot of experience with environmental management and/or with Coffee Island's business operations. Lumpkin and Bacq (2019, p. 384) specifically mentioned that 'to catalyze societal change initiatives, supporters such as donors, corporations, social service organizations, governments, and other regimes of support provide financial, technical, and political assistance'.

Reducing the carbon footprint that Coffee Island creates can be seen as a positive societal change since it improves the quality of life for the planet's inhabitants. Questions related to this aspect are asked to create reliability amongst experts' answers. Actionable knowledge is created since their answers are segmented by the theme to make them applicable to the intervention of the present theme. The answers of the four experts are printed as direct quotes, and immediately after that, commentary and analysis based on the principles of Critical Action Learning follow.

## **CHAPTER 4: Analysis of the Experts' Interviews on Coffee Island's intervention (Study 2)**

### **4.0 Introduction**

The data analysis for this research used a thematic analysis approach. Thematic analysis is a method researcher use to analyse qualitative data. The method involves identifying, analysing, and reporting repeated patterns from the data (Braun and Clarke, 2006, p. 79). The thematic analysis aims to interpret data through code selection and theme construction. Chapter 4 interprets and analyses the opinion of four experts who participated in an interview. The interview questions focused on personal opinions on the pollution Coffee Island currently produces and asked for their feedback or criticism. Additionally, the questions focused on the interviewees giving suggestions on how Coffee Island can solve the problem of pollution through the proposed intervention based on the merits of Critical Action Learning.

### **4.1 Thematic Analysis**

Thematic analysis is essential in analysing data that is written or spoken. Such data includes newspaper reports, interviews, and open-ended questionnaire responses. There are six phases of thematic analysis. These phases include familiarising with the data, generation of initial codes, searching for themes, defining and naming themes, and producing the final report (Braun and Clarke, 2006, p. 81). This research utilises these steps to identify various themes suitable from the interview.

#### **4.1.1 Familiarisation**

To conduct thematic analysis, a researcher must immerse themselves and become familiar with their data. The researcher must scrutinise this data over time. To scrutinise data, the researcher starts by transcribing it. Transcription involves processing recorded data into written data for analysis. According to Braun and Clarke (2019, p. 83), transcription of the data verbatim is essential as it helps to determine the level of detail necessary for analysis. In this study, the researcher transcribed the data from the interview into a written form for analysis. Transcription enabled the researcher to understand and familiarise with the information provided in the interview. Therefore, familiarisation is an essential phase during thematic analysis that enables the researcher to comprehend and familiarise the collected information.

#### 4.1.2 Generation of initial Codes

The coding process is essential when using the thematic analysis approach to analyse data collected through interviews. During this phase, the researcher carefully examines their data, notices patterns, and develops coding schemes. At this point, the researcher needs to consider the research question. The codes the researcher develops should answer the research question. This research used both inductive and deductive coding techniques to develop codes that would later translate to themes. Inductive coding is an approach where the researcher generates the codes directly from the data.

On the other hand, in deductive coding, the researcher generates codes from the literature that already exists. In deductive coding, the researcher decides in advance the information and features they will be looking for in the data. Some of the researcher's features pre-determined before data coding include motivation and social media, and viral marketing. This research developed the following transcripts for coding:

<b>Interview Questions</b>	<b>Transcript 1 (Expert 1)</b>	<b>Transcript 2 (Expert 2)</b>	<b>Transcript 3 (Expert 3)</b>	<b>Transcript 4 (Expert 4)</b>
Knowledge about Coffee Island's pollution generation	Reasonable limits, pollution generation, zero waste, minimalistic approach	Heavy pollution, excessive pollution, plastic consumption, overall litter	Heavy pollution, global eco-trend, modern technology	Bio-degrade, production of plastic wastes, production of methane, production of Carbon (IV) Oxide, burning of gasoline
Factors that impact a user to download and use the	Recycling, green marketing, usability, few	Quality of graphics, theme, RAM and Hard disk	Convenience, better graphics and sound effects,	User motivation, free, easy to use,

application	megabytes for downloads, web design, internet security, free of viruses, allows its users an ergonomic operation, maintain steady use, gifts, promotions, vouchers, referral programs, viral marketing	space (how heavy and resource intensive it is)	maintaining usage of applications through gifts	beneficial, convenient, favourite TV star or athlete
Factors that impact a user to download and use QR scanning	Capability of a smart phone to conduct QR screening, easy to use, the design, reaction time it takes to do the scanning itself, safe, motivate its users via the reward program, convenient, visual attractiveness, visible logo,	Easy to identify the QR codes, user should own a smart phone that can scan, form of reward should be offered, saves time and money, vouchers	Easy and fast, readily visible, compatible with all smart phones, motivate its users, a lot of QR hotspots should be available	Easy to use daily, form of reward, gain reward points, monetary products, and offerings, organise a free trip to the recycling plant, social media

	billboard advertisements, employees should spread information to the public about its existence, info graphics			
Promotion of the app and scanning  Paths of communications stakeholders	Television, public relation campaigns, internet, flyers, radio promotions	Website, billboards, in house posters, flyers, radios, television, public relations campaigns, press releases, interviews, media coverage, Twitter and other social media platforms	YouTube channel, internet, affiliate marketing	Short movies, internet, typical DVD clubs, self-help video, television, computer
Factors which will make a Coffee Island customer suggest and make the application viral, to what	Happy and satisfied customers, creation of a YouTube channel, free and easy access to the YouTube	Interesting to the public, gets publicity on forums and online news, vouchers, referral rewards,	Offering credit upon registering and downloading the app, provide an ongoing rhythm,	Public relations, magazine articles, meaningful, appropriate to its users, corporate

extent referral rewards could help the application succeed	channel, notification by bell on the YouTube channel, link in description, ease of use of the application, vouchers.	number of clicks, promote it on online web pages, YouTube, link in description, YouTube viewers hit bell icon	referral rewards, viral marketing, social media, vouchers and credit codes on daily purchases, anonymous cash-out option	website, YouTube Channel, free giveaways, vouchers, share on social media, referral pages
The general public's view	Re-positioning the general public's idea, convince an average customer	Embarking on recycling programs, spending money on recycling activities	Altering perceptions, raising awareness	Actively involving the audience, showing honest action of remorse, efficiently reducing the internalising externalities

Table 12. Generation of Initial Codes from the Interview Transcripts.

#### **4.1.2a Identifying similar Codes**

The researcher identified similar codes from the interview transcripts. The researcher did this using different colour to identify codes that were similar and carried the same information. This process involved going through all the transcripts and noticing similarities. For example, if the first transcript has a code labelled pollution, and the second transcript a code labelled heavy pollution, the researcher should note that there is a pattern in the transcripts. The author should then look for any information in the remaining transcripts that represent pollution and highlight them as codes that could



potentially form a theme. Colours are essential to aid the researcher to identify themes.

Interview Questions	Transcript 1 (Expert 1)	Transcript 2 (Expert 2)	Transcript 3 (Expert 3)	Transcript 4 (Expert 4)
Knowledge about Coffee Island's pollution generation	Reasonable limits, pollution generation, zero waste, minimalistic approach	Heavy polluter, excessive pollution, plastic consumption, overall litter	Heavy pollution, global eco-trend, modern technology	Bio-degrade, Production of plastic wastes, production of methane, production of Carbon (IV) Oxide, burning of gasoline
Factors that impact a user to download and use the app	Recycling, green marketing. Easily used, few megabytes to download, web design, internet security, allows its users an ergonomic operation, maintain steady use, gifts, promotions, vouchers, referral	Quality of graphics, theme, RAM and Hard disk space (how heavy and resource intensive it is)	Convenience, better graphics and sound effects, maintaining usage of applications through gifts	User motivation, free, easy to use, beneficial, convenient, favourite TV star or athlete

	programs, viral marketing			
Factors that impact a user to download and use QR scanning	Capability of the smart phone to conduct QR screening, easy to use, the design, reaction time it takes to do the scanning itself, safe, motivate its users via the reward program, convenient, visual attractiveness, visible logo, billboard advertisements, employees should inform the public about its existence, info graphics	Easy to identify the QR codes, user should own a smart phone that can scan, form of reward should be offered, saves time and money, vouchers	Easy and fast, readily visible, compatible with all smart phones, motivate its users, a lot of QR hotspots should be available	Easy to use daily, form of reward, gain reward points, monetary products, and offerings, engage users in the results of the overall recycling process, organise a free field trip to a recycling factory, social media
Promotion of the application and QR scanning Channels of	Television, public relation campaigns, internet, flyers, radio	Website, billboards, in house posters, flyers, radios, television, public	YouTube channel, internet, affiliate marketing	Short movies, internet, typical DVD clubs, self-help video, television,

communications with stakeholders	promotions	relations campaigns, press releases, interviews, media coverage, Twitter and other social media platforms		computer
Factors which will make a Coffee Island customer suggest and make the app go viral, to what extent referral rewards could help the technologies to succeed	Happy and satisfied customers, creation of a YouTube channel, free and easy access to the YouTube channel, notification by bell on the YouTube channel, link in description, ease of use of the application, vouchers	Interesting to the public, gets publicity on forums and online news, vouchers, referral rewards, number of clicks, promote it on online web pages, YouTube, link in description, YouTube viewers hit bell icon	Offering credit upon registering and downloading the app, provide an ongoing rhythm, referral rewards, viral marketing, social media, vouchers and credit codes on daily purchases, anonymous cash-out option	Public relations, magazine articles, meaningful, appropriate to its users, corporate website, YouTube Channel, free giveaways, vouchers, share on social media, referral pages
The general public's view	Re-positioning the general public's idea,	Embarking on recycling programs,	Altering perceptions, raising	Actively involving the audience,

	convince an average customer	spending money on recycling activities	awareness	showing honest action of remorse, efficiently reducing the internalising externalities
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Table 13. Identifying Similar Codes.

### 4.1.3 Searching for Themes

In this phase, the researcher studies the codes and establishes relationships among them. In this study, the researcher identified codes that have common characteristics and grouped them using colour codes. Grouping the codes enabled the researcher to develop themes. According to Braun and Clarke (2006, p. 82), a theme presents essential details about the data in relation to the research question and shows some level of patterned response or meaning within the data set. There are no rules when developing themes. A researcher bases the identification process on the research question and what they deem vital to the study (Braun and Clarke, 2006, p. 87). The following table shows how the author labelled themes for this study.

Interview Topic	Codes	Themes
Knowledge about Coffee Island's pollution generation	Pollution generation, heavy polluter, excessive pollution, production of plastic wastes, production of methane, production of Carbon (IV) Oxide, burning of gasoline, heavy pollution	Heavy pollution
Factors that impact the user to download and the app	Easy to use, convenience, convenient, allow its users an ergonomic operation,	Efficient usability, application features, application design,

	light in megabytes to download for minimal consumption of hard disk, RAM and hard disk space, quality of graphics, better graphics and sound effects, web design, user motivation, usage of application through gifts, promotion, vouchers, favourite TV star or athlete	motivation
Factors that impact the user to use QR scanning	<p>Capability of a smart phone to conduct QR screening, user should own a smart phone that can scan, compatible with all smart phones</p> <p>Easy to use, easy to identify the QR codes, Easy and fast, Easy to use daily</p> <p>Motivate its users via the reward program, form of reward should be offered, vouchers, motivate its users, form of reward, gain reward points, monetary products, and offerings</p>	<p>Compatibility</p> <p>Usability</p> <p>Motivation</p>
Promotion of the	Television, public relation	Social media and viral

application and QR scanning  Channels of communications with stakeholders	campaigns, internet, flyers, radio promotions, websites, Twitter and other social media platforms, YouTube, affiliate marketing	marketing, broadcast media, public relation campaigns
Factors which will make a client make the app go viral	Creation of a YouTube channel, vouchers, referral rewards, offering credit upon registering and downloading the application, viral marketing	Social media and viral marketing, motivation
The general public's view	Re-positioning the general public's idea, altering perceptions, raising awareness, actively involving the audience  Embarking on recycling programs, efficiently reducing the internalising externalities	Altering stakeholder's perception  Building trust

Table 14. Identifying and Selecting Suitable Themes from Codes.

#### **4.1.4 Reviewing the Themes**

The 'reviewing the themes' phase comes after the researcher has identified the initial themes from the generated codes. The identified themes for this study include motivation, heavy pollution, social media and viral marketing, altering stakeholders' perceptions, compatibility, efficient usability, and application design. In this research, the author ensured that the interview extracts were related to each code for accuracy. The researcher also adjusted the themes. They realised that some codes were almost

similar and were merged to form subthemes. For example, the themes altering stakeholder's perception and building trust both talk about altering perceptions. Therefore, building trust becomes a subtheme of the altering stakeholders' perception's theme. Also, application design and application features are related to the theme design. Thus, application features become the subtheme of the theme application design.

#### **4.1.5 Defining and naming Themes**

This phase involves the iterative process of ensuring that the name the researcher has given to each theme is appropriate and suitable. For this research, the author named the themes appropriately, and these themes will be essential in the thematic analysis process in the final phase.

#### **4.1.6 Producing the final report**

The researcher generated the final report after identifying the themes from the interviews. The researcher interviewed four experts who had different opinions and views on the pollution Coffee Island produced and to what extent the company can reverse its pollution using Smartphone recycling application and QR scanning recycling.

The identified themes for this study include motivation, heavy pollution, social media, viral marketing, broadcast media, public relations campaign, altering stakeholders' perceptions, compatibility, efficient usability, and application design. All the themes that the researcher developed to correspond to the research question whose aim was to determine to what length Coffee Island can reverse the negative externalities caused by its pollution by implementing a Smartphone recycling application and QR scanning recycling.

##### **4.1.6a Heavy pollution**

Heavy pollution is one of the themes that the researcher identified from the interview with the four experts. Pollution is the act of introducing harmful substances into the atmosphere (Schmaltz et al., 2020, p. 6). The experts labelled Coffee Island a heavy polluter. A company that's a heavy polluter translate to one that produces excessive pollution. Coffee Island is a major coffee company located in Greece. The company is famous among its customers for its services and the variety of coffee available.

However, Coffee Island is responsible for environmental pollution. The organisation serves its customers in plastic cups which litter the environment. Some of these plastic cups find their way into the oceans and other water bodies leading to the death of aquatic life.

Additionally, this organisation has a service where their employees deliver their products to customers. These services use gasoline, responsible for the production of Carbon (IV) oxide and other greenhouse gases. Greenhouse gases absorb and emit energy. This energy increases the temperature of the atmosphere and earth surface, leading to the greenhouse effect (Schmaltz et al., 2020, p. 6). Greenhouse gases have detrimental impacts on the environment. They lead to climate change and global warming. Therefore, Coffee Island is a heavy polluter, and its pollution has a harmful impact on the environment.

The first interview question seeks to find out the interviewees' information on the pollution from the Coffee Island Company. The first interviewee explains that Coffee Island pollutes the environment. They further explain that although Coffee Island pollutes the environment, it is within reasonable limits. Pollution within reasonable limits means that the pollution is within the acceptable threshold. The first interviewee says, 'I am aware of the fact that Coffee Island pollutes its natural environment and creates litter when producing coffee items, confectioneries, and the like. It is within some reasonable limits. I would like to emphasize the fact that most firms are trying to go zero-waste and follow a minimalistic approach in terms of pollution generation; hence Coffee Island should follow suit and try to create as little harm to the environment as possible' (p. 1). In other words, the interviewee agrees that Coffee Island is responsible for environment pollution. However, the waste they produce is within the recommended limits.

Expert 1 emphasises that the Coffee Island Company should adopt the zero-waste policy and follow an approach that will minimise its pollution. The zero-waste policy is a set of rules which guides pollution prevention and encourages organisations to re-use their wastes (Zaman, 2017, p. 54). The aim of the zero-waste policy is to ensure that wastes do not end up in landfills, incinerators, or oceans. Organisations disposing their wastes in landfills, oceans, or through incineration enhance environmental pollution (Hannon and Zaman, 2018, p. 67). Thus, Expert 1 recommends that Coffee



Island should introduce the zero-waste policy in their organisation to minimise pollution.

Expert 2 refers to Coffee Island as a heavy polluter of the environment. From the interview with the second expert, it is evident that Coffee Island produces so much pollution, but does not do enough to alleviate the problem. Expert 2 says ‘I am trying to say that although some efforts have been made to reduce pollution, unfortunately, Coffee Island is a heavy polluter and does not alleviate the problem of pollution. Instead, it exasperates it. I deem the pollution generated by Coffee Island to be excessive, and unfortunately, nothing seems to be working in the contrary direction. I wish Coffee Island reduced its plastic consumption and overall liter’ (p. 6). Therefore, from this interview, the theme of heavy pollution was evident from the second interviewee’s view of Coffee Island.

Plastic pollution is detrimental to the environment. Plastic pollution refers to the accumulation of plastics in the environment. Marine wildlife are the main species affected by plastic pollution (Rhodes, 2018, p. 210). Plastic wastes find their way to the ocean and river water causing the suffocation of marine life. Additionally, the aesthetic value of the environment is lost to plastic pollution (Rhodes, 2018, p. 210). Coffee Island is a big consumer of plastics. The organisation uses plastics to serve its customers. Heavy production and improper disposal of plastic wastes deems Coffee Island a heavy polluter. Therefore, the theme of heavy pollution, mainly caused by plastics, is evident from Expert 2’s interview.

Like the other two interviewees, Expert 3 agrees that Coffee Island causes heavy pollution from its activities. They also explain that the company can reduce their pollution levels. The interviewee said ‘...On the other hand, in some cases, it can be severely reduced, even if the company is already below the national levels of permitted pollution. I get daily reports by customers and Non-Governmental Organisations on pollution; hence I value that Coffee Island does create pollution, not withstanding not much more, or even border-line less than national limits, yet approaching 2020, it could do better. I set 2020 as a milestone since there is a global eco-trend (alongside veganism, reducing carbon footprint, etc.), and modern technology can help (for instance Wifi is everywhere available in major urban centers in Greece, and sometimes it is offered for free by companies and some

municipalities)' (p. 12). This coincides with the theme of heavy pollution that the researcher had identified in the study when generating themes.

From Expert 3's view, Coffee Island's pollution levels is within the national levels of permitted pollution. However, with the ongoing efforts to reduce pollution, the organisation needs to do better to minimise their pollution levels. The third interviewee discusses the global eco-trend. The global eco-trend is an initiative that seeks to protect the environment and animals through the reduction of their exploitation. Some aspects of the global eco-trend include veganism and reducing carbon foot print. Reducing carbon foot print involves limiting consumption of beef, select fish from sustainable fishing, and using re-usable shopping bags as opposed to plastic packaging, among other things (Kause et al., 2019, p. 11). Veganism as a global eco-trend encompasses the practice of avoiding the consumption of meat and other animal products in a move to save and prevent the cruelty against animals and rare species (Kause et al., 2019, p. 11). Thus, if Coffee Island wants to reduce their pollution levels, they should join the global eco-trends initiatives of environmental conservation.

Additionally, Expert 3 discusses the use of technology to minimise Coffee Islands' heavy pollution. The third interviewee suggested the use of Wi-Fi. Wi-Fi is a wireless technology that connects computers, phones, and other mobile devices to the internet. The use of Wi-Fi would enable Coffee Island to spread messages to their customers, and enable their customers to receive these messages. These messages could be about different ways the company and its stakeholders could minimise pollution. Also, the messages could be about the importance of having a clean and safe environment. Thus, modern technology, as Expert 3 suggested, could be useful in minimising pollution at Coffee Islands.

Expert 4 also supports the theme of heavy pollution. The interviewee talks about plastics as a non-biodegradable waste. Non-biodegradable wastes cannot break down organically. Therefore, they take a long period to decompose (Dussud et al., 2018, p. 57). The interviewee says 'I know for a fact that Coffee Island does indeed pollute the environment a lot. It is a natural situation, as since the firm uses resources and raw materials, these are broken down, disintegrate and take a lot of time to bio-degrade. Plastic is a typical example, as most coffee products require coffee cups, plastic spoons, and, of course, cookies, confectioneries, and generally speaking, sweets

which typically accompany coffee and various caffeine-based beverages, are wrapped in plastic' (p. 15). This shows that plastics from Coffee Island are the main cause of heavy pollution.

Additionally, the coffee production process leads to the production of greenhouse gases such as methane and Carbon (IV) oxide. 'Even the mere production of coffee and food takes up resources, which, in turn, generate a lot of pollution like methane and carbon dioxide' (p. 15). Carbon dioxide and methane are greenhouse gases. Greenhouse gases are responsible for various environmental problems, such as global warming and climate change (Dussud et al., 2018, p. 60). Therefore, the coffee production process leads to heavy pollution, which is the theme in this research.

Another heavy pollution problem from Coffee Island is burning a lot of gasoline when distributing products to customers. Gasoline is fuel used to run engines. Gasoline produces carbon (IV) oxide which is one of the greenhouse gases (Owino et al., 2020, p. 46). The fourth expert says '... A final problem is the delivery service that Coffee Island has, as its motorbikes burn a lot of gasoline to serve their customers' (p. 16). Gasoline contributes to heavy pollution (Owino et al., 2020, p. 46). Coffee Island uses motorbikes to supply their products to the consumers. Thus, they contribute to heavy pollution, which has detrimental effects on the environment.

#### **4.1.6b Motivation**

Motivation is another theme the researcher identified during the identification of themes. Motivation is a process that produces goal-oriented behavior (McInerney, 2019, p. 427). In other words, for an individual to achieve a certain set goal, there needs to be factors that drive them towards achieving the goal. The motivation theme is in line with the aim of the study which is to determine to what degree Coffee Island can reverse the negative impacts caused by its pollution by implementing recycling technologies. Smartphone recycling application and QR scanning recycling are forms of modern technology that would be essential in reducing environmental pollution.

In the current century, most people use mobile phones and other related devices daily. These devices can be used to reduce Coffee Island pollution. However, not everyone can embrace this technology to help reduce pollution. People use their smart phones for different purposes. Some use it for communication, while some use it for work or entertainment. Additionally, there are various applications offering different content

to meet the needs of the users. Thus, some customers require coercion to download any kind of smart application. To do that, the consumers need to be motivated to embrace the technology of the Smartphone recycling application and QR scanning recycling.

There are different ways in which an individual can be motivated. These ways include offering of gifts and rewards, celebrity influence, and using role models among other things (Breckenridge et al., 2019, p. 103). These motivation strategies are very effective as they enable an individual to change their behaviour, mindset, attitude, and beliefs towards something, in this case, towards using modern technology such as Smartphone recycling application, and QR scanning recycling to minimise pollution at Coffee Island.

The second and third interview questions aimed at finding out the factors that impact a user to use the recycling technologies. The first interviewee suggested that Coffee Island should establish a program that will encourage customers to use the application by offering rewards and gift cards to its customers. The first interviewee said ‘A way to maintain steady use is via a rewards programme, which will motivate usage by offering gifts, promotions, and vouchers at Coffee Island’ (p. 3). Individuals who use the recycling technologies would receive gifts and vouchers. This would motivate others to download the app and use QR scanning to minimise pollution.

Expert 2 was also keen to mention that having a reward system for individuals with the application would encourage more people to download and use this modern technology to curb pollution. ‘A user could start interacting with QR scanning provided it meets two essential criteria. It should be easy for her to identify the QR code and the user should own a smartphone that can scan. Some form of reward should be offered. Typically, QR scanning saves time and money for its users. Moreover, I firmly believe that QR scanning should be linked with some form of motivation. For instance, Starbucks motivates its customers to keep scanning when they purchase online and offers vouchers to frequent users of the service’ (p. 8). The expert suggested giving vouchers as a way of motivating the clients to download and use the smartphone application and QR scanning to minimise pollution. A voucher is a card or a small piece of paper that a customer receives as a form of reward. The voucher is exchanged for free goods or service at Coffee Island. Therefore, to

motivate the customers to use the Smartphone application and QR Scanning, Coffee Island could reward the customers with vouchers for having and using the application.

Expert 3 suggested that the company should organise an online contest on YouTube or any other social media application to promote the recycling technologies. The company would give winners of the contest free gifts to motivate them and other customers to download and use QR scanning and the smart phone application. '...The difficult part is actually maintaining usage of the application. Such a thing can happen via organizing a contest over YouTube.com or some other form of social media. For instance, a YouTube.com channel could promote the application and offer a gift to anyone downloading and using the application to a certain level' (p. 12). Thus, Expert 3's opinion on conducting online tests on social media platforms then rewarding the winners supports the motivation theme that the researcher had identified in this research.

Expert 4 suggested that to motivate Coffee Island's clients to download and use the smartphone application steadily, they need motivation. The customer could be motivated by using their favourite TV stars and athletes. Expert 4 believes that customers seeing their favourite celebrities using the smartphone application and QR scanning would encourage them to use these technologies as well to reduce plastic pollution. '...Steady use is about the motivation of its user. Also, any potentially added value will lead to more use of a smartphone application. Convenience, as well as positive reinforces, are more than welcome. Imagine if your favourite TV star or athlete started using a specific application. Immediately that would lead users to start upping their daily use of the application since they consider their favourite TV star a role model and opinion leader. Depending on the application engaging its users with the final result can also be helpful' (p. 18).

Celebrities, such as athletes have massive influence of their followers (Ambroise and Albert, 2019, p. 98). TV stars and athletes naturally command attention from the crowds and their followers. Coffee Island could employ celebrity branding to encourage more people to embrace and download the smartphone application and use QR scanning. Celebrity branding will enable the company to create awareness of the pollution control efforts. Additionally, it enhances the credibility of the application and the QR scanning making more people to use it (Ambroise and Albert, 2019, p. 98). People seeing their favourite TV stars and athletes on the frontline to reduce

pollution will be a motivation. Thus, to motivate people to use smartphone application and QR scanning, Expert 4 suggested that the customers be motivated by their favourite stars or athletes.

Expert 4 also suggested that to motivate individuals to use the smartphone application and QR scanning, the Coffee Island company should introduce a programme where individuals get rewarded with points for using the app or QR scanning. These points will then translate to money or offerings which the customer can use to purchase beverages and other products from Coffee Island. 'How can a user start using QR scanning? If he sees it as easy to use daily, and there is some form of reward for him. An idea for continuous usage of QR scanning can come via the engagement of all involved parties in QR scanning. For instance, Coffee Island wishes to embark on QR scanning to reduce pollution. One way to keep QR scanning continuously is by allowing its users to gain reward points and see some monetary and/or product offerings' (p. 16). The more an individual uses the app or QR scanning, the more points they get. People will be determined to use the application and QR scanning to get more points. Therefore, offering the customers rewarding points that can translate to money or other offerings is another way of getting people to use the smart phone application and QR scanning.

#### **4.1.6c Social media and viral marketing**

Social media and viral marketing is another theme that emerged from the study. Social media very popular in the current century. It refers to the websites and applications that enable users to network and interact with each other (Appel et al., 2020, p. 83). Viral marketing is a technique that most companies and businesses use to spread information about a product or service. Viral marketing involves the use of social media platforms. The social media and viral marketing theme aligns with the research objective that aims to determine to what length Coffee Island can reverse the negative impacts pollution caused by implementing the recycling technologies. Social media and viral marketing are the most effective and efficient ways to get people to adopt, download, and use the recycling technologies. Thus, for the organisation to minimise their plastic pollution, they have to use social media platforms and viral marketing techniques to coerce their customers to download and use the proposed modern technologies.

Expert 1 discusses viral marketing as one factor that will influence a user to use the smart phone application. 'Moreover, referral programmes by viral marketing and suggestions by current users could further motivate the use of the smartphone application' (p. 3). A referral programme is an initiative that gives incentives to individuals who had previously used the Smartphone recycling application, and QR scanning recycling for them to recommend their friends, colleagues, families, and other people they know. In other words, individuals who already have the smart phone recycling application or are already using QR scanning get rewarded online as a strategy to market the technologies. Individuals who receive the incentives become brand ambassadors or brand advocates of the company. Therefore, Expert 1 suggested that referral rewards by viral marketing is an effective way to encourage more users to download and use the smart phone application and QR scanning for recycling.

Expert 1 suggests that for the referral reward program to be successful, and to make the smart phone application go viral, the company should consider having a YouTube channel. 'Also, I would like to add that in order for the application to go viral, a Youtube.com channel should be created. Subscribers of this recycling Coffee Island channel will be notified by the bell icon and receive newsletters of future actions. Furthermore, via Youtube.com, anyone with an Internet connection can gain free and easy access to the channel and learn about the new application. A link on the description will help download it. Ideally, a Youtube.com tutorial on how to use the application and/or QR scanning should be created to promote easiness of use and, of course, the great benefits of recycling to come right away and in the future in the form of sustainable development' (p. 3).

YouTube is a social media platform that involves sharing of videos. Google owns the social media platform and it is a famous educative and entertainment tool. YouTube is the second most popular social media platform with more than one billion users (van Es, 2019, p. 223). This means that the social media platform has many users that Coffee Island can use to market the smart phone application and QR scanning for pollution prevention. Coffee Island can set up a YouTube channel and create videos on their efforts to minimise pollution through the Smartphone recycling application and QR scanning recycling. Customers and other stakeholders will subscribe to the channel and activate the notification bell to receive updates on Coffee Island's new video. Coffee Island can upload tutorial videos to teach their customers and other

stakeholders how to use the application and QR scanning to promote it. Thus, Expert 1's suggestion of YouTube to make the smart phone application and QR scanning technologies go viral supports the social media and marketing theme that the researcher had identified using the deductive approach.

Expert 3 suggested the use of Twitter to reach out to many stakeholders and to make the smart phone application and QR scanning go viral. 'Twitter and other social media can be a fantastic lead to generate publicity since Internet access is extremely heavy in Greece' (p. 11). Twitter is another popular social media platform that enhances interaction and networking among people. Twitter has over 300 million users (Zhang, Gosselt and de Jong, 2020, p. 364). When Coffee Island uses Twitter to market the smart phone application and QR scanning, it means that approximately 300 million people will know about these technologies that aim at minimising pollution. The company could create tweets. Tweets are short posts that convey information to the followers (Zhang et al., 2020, p. 367). The company's follows could re-tweet these posts, comment, like, and share to other people so that they can learn about the smart phone application and QR scanning. Twitter also uses hashtags to reach out to more people. The hashtag filters content and enables the users to easily access the tweet (Zhang et al., 2020, p. 380). Coffee Island could create a hashtag that will go viral to reach out to more people. Therefore, Expert 2 suggesting twitter supports the social media and viral marketing theme that the researcher had identified.

Expert 2 in the interview also suggested that Coffee Island should use YouTube to make the application go viral. They say 'Finally, a paramount activity for the application to go viral is to promote it on a popular online web page to get leads from it that will lead to more downloads of the application. For example, you could present the recycling application on a youtube.com video. A link in the description of the application may offer more and more unique visitors to download it. Also, notifications for new videos on how to use the recycling application, how to receive vouchers, results of recycling will warm up your audience with feedback. Prompting youtube.com viewers to hit the bell icon will make them immediately aware of new videos about the smartphone application and new characteristics and add-on it might have' (p. 13). YouTube is a popular and has many users. Therefore, YouTube will enable Coffee Island to reach out to more users.



Expert 3 also suggests that Coffee Island should use YouTube to make the application go viral and encourage people to use the smart phone application and QR scanning. ‘... Such a thing can happen via organizing a contest over YouTube.com or some other form of social media. For instance, a YouTube.com channel could promote the application and offer a gift to anyone downloading and using the application to a certain level. Coffee Island could start a YouTube.com channel in which it will promote both the application and its QR scanning. It should educate new users of these two on what are the benefits to be gained both for them individually and the overall planet, of course. One means of communication is the above-mentioned channel. An extra benefit would arise by asking viewers of the Coffee Island channel to subscribe to it, like it, hit the thumbs up option, register for notifications, share it amongst friends, etc. Making the video downloadable will allow a user to save it on her hard disk without even having access to the Internet. Another idea is asking an opinion leader, like an environmentalist, to promote it over the Internet. Perhaps she has a website and could do some affiliate marketing with Coffee Island’ (p. 14).

Expert 3 also suggested using a website to conduct affiliate marketing. Affiliate marketing is a strategy that companies use to compensate third parties to market their products, services, and brands (Dwivedi et al., 2021, p. 59). The third parties earn commission every time they market the company’s products. Expert 3 suggests that affiliate marketing will enable the smart phone application and QR go viral and attract many users. Thus, Expert 3 discussing affiliate marketing through websites supports the social media and viral marketing theme that the researcher identified.

Expert 4 suggests that to encourage more people to use QR scanning, Coffee Island should organise a trip to a recycling centre. The trip should be videographed and the videos shared on YouTube, Twitter, Facebook, and Instagram. ‘It would be more impactful to organise a free field trip to a recycling factory that Coffee Island would collaborate with and show them first-hand how the QR scanning of a waste item helps provide a recycling unit its raw material for another use. Thus, the process facilitates overall lowering pollution for everyone else on Planet Earth. Ideally, such a field trip should be videoed/photographed and then presented on the corporate site and YouTube.com, and various social media (i.e., Twitter, Facebook, Instagram)’ (p. 19). Facebook is a social media platform that enables people to share posts about different issues. Coffee Island needs to have a Facebook account to interact with its customers.

Facebook has over one billion customers (Appel et al., 2020, p. 83). Therefore, it is an appropriate platform for Coffee Island to share the videos on waste recycling to present pollution.

Expert 4 also suggested that Instagram will make more people use QR scanning as a move to minimise pollution. Instagram is a social media platform that enables users to upload pictures (Appel et al., 2020, p. 87). The social media platform has features that enables users to write captions together with their photos. Individuals can like, share, and comment on these posts. Instagram also allows sharing of videos (Appel et al., 2020, p. 87). Coffee Island could create posts and videos about the smart phone application and QR scanning and upload them on Instagram to give its customers and other interested parties more information about the technologies.

#### **4.1.6d Broadcast media**

Broadcast media involves the use of electronics such as televisions, computers, radios, newspapers, billboards, magazines, and the internet to send messages. Broadcast media is among the themes that the researcher identified in this study. Broadcast media is categorized as a traditional way of communication, especially now when social media has become more popular (Shomron and Schejter, 2019, p. 483). However, people still use broadcast media to receive messages. The broadcast media theme is aligned to the research objective which seeks to use smart phone application and QR scanning to minimise Coffee Island pollution.

Expert 1 believes that television is the best way to advertise and promote the smart phone application and QR scanning technologies for recycling. Expert 1 says 'The foremost important stakeholder is obviously Coffee Island customers. A potential channel of communication is television. Coffee Island could pay for a television commercial to generate publicity for its application and QR scanning. A more effective and cost-effective way of using the same channel, namely television, is via a below-the-line marketing campaign. Coffee Island could engage through a well-grounded public relations campaign that would promote recycling. Coffee Island's managers should appear as experts in recycling, and their attempt should be characterized by a novel and non for profit motivation' (p. 3). Expert 1 believes that promoting the smartphone application and QR scanning through television will be cost-effective and effective.

The first interviewee also does not agree with promoting through contemporary marketing channels. Contemporary marketing channels involve the use of social media. They promote the use of the internet, which is part of the broadcast media. ‘The second best channel of communication is the Internet, and users will be able to learn from the firm’s website, the application, and the overall QR scanning process. Obviously, there are other channels like fliers and radio promotions. I do not consider the contemporary marketing communication channels as ideal due to a change in customers’ patterns of communication’ (p. 4). Therefore, from the interview with Expert 1, broadcasting media theme is evident through the expert suggesting the use of television and internet for marketing as opposed to social media.

Expert 2 suggested that flyers, television, billboards, in-house posters, and radio would be effective to promote the use of the smart phone application and QR scanning. ‘Coffee Island is a large-scale firm. The promotion of the smartphone application and QR scanning should come through various means to ensure maximum success. For example, the firm’s official website should be used. Billboards, as well as in-house posters, are appropriate. Moreover, flyers, radio, and television promotion should be heavily used to ensure that such actions like the smartphone application and QR scanning are met with success’ (p. 8). Flyers, television, billboards, in-house posters, and radio are all forms of broadcast media. They offer information and entertainment to the user (Gutsche, 2019, p. 1035). Coffee Island using these forms of broadcast media to pass information to people about the smart phone application and QR scanning will enable them to download and use the application to minimise pollution.

Expert 4 suggested that creating short videos that customers can watch over the internet and DVD clubs would be efficient in motivating more people to download and use the smart phone application. ‘Short movies are very popular over the Internet and in typical DVD clubs. Coffee Island wishes to use the application and QR scanning to promote recycling amongst its current customers and prospective ones. To do so, Coffee Island should produce a short video (around 60 minutes) to describe the experience of recycling via the application and QR scanning. This video should be seen as an intervention in the problem and not a mere description of poor recycling practices’ (p. 19). Watching videos over the internet or DVD clubs is an example of using broadcast media to encourage people to use QR scanning and the smartphone

application. Therefore, watching videos through the DVDs and internet support the broadcast media theme.

#### **4.1.6e Public relations campaigns**

Public relation campaigns is a series of planned activities that an organisation sets up to achieve a particular goal. For this case, Coffee Island is the organisation that will run the public relation campaign, and its goal would be to encourage and motivate more users to use QR scanning and smartphone applications. Public relations campaigns are essential because they help a company build its brand and increase its credibility in the market, build a customer base, and educate the public on various issues. In this research, the public relations campaign theme relates to the research objective and discusses how Coffee Island can encourage and motivate more people to download the smart phone application and use QR scanning to minimise pollution.

Expert 1 suggested the use of public relation campaigns to promote the smart phone application and QR scanning recycling technologies. Expert 1 says, 'Coffee Island could engage through a well-grounded public relations campaign that would promote recycling. Coffee Island's managers should appear as experts in recycling, and their attempt should be characterized by a novel and non for profit motivation' (p. 6).

Expert 1's suggestion of Coffee Island using PR campaign to market the recycling technologies supports the theme the researcher identified during the study.

Expert 2 believed that conducting public relations campaigns is an efficient way of promoting the application and QR scanning. Expert 2 says 'I strongly advise Coffee Island to engage in a public relations campaign to gain exposure via press releases, interviews, and live media coverage that could come through its Public Relations department' (p. 10). The second interviewee suggests that Coffee Island should conduct public relations through press releases, interviews, and live media coverages to spread information about the application and QR scanning. Thus, the interviewee's view supports the public relations campaign theme that the researcher had identified in the study.

One essential aspect to note is that the researcher derived the public relations campaign theme from only two transcripts. The theme was not common among all the interviewees, but it aligns with the research objective. Braun and Clarke (2006, p. 87) wrote that when identifying and selecting themes for analysis, the researcher has to

examine them carefully and select that which is aligned to the research objective or question. Thus, a theme may not be common across all the transcripts, but as long as it relates to the research objective, the researcher can highlight it as an appropriate theme for the study.

#### **4.1.6f Compatibility**

Compatibility is another theme that the researcher identified in the study. The theme answers the interview question that seeks to determine the factors that will encourage more people to use QR scanning and the smart phone application for recycling.

Compatibility is a state where an individual's smartphone or application behaves as expected across all the other devices of the same brand (Bin Ahmadon et al., 2021, p. 87). Compatibility is essential as it enables a device or an application to run smoothly without any glitches. The compatibility theme arose from the interview question whose aim was to determine the factors that would motivate users to download and use the recycling smartphone application and QR scanning.

Expert 3 suggested that the QR scanning should be compatible with other smartphones for it to attract people to use it. The expert says 'QR scanning is relatively new in the Greek market. To begin with, it has to be easy and fast. The QR code should be readily visible and, of course, compatible with all smartphones. Moreover, another basic issue is that it should motivate its users, and, of course, a lot of QR hotspots should be available' (p. 19). In other words, once the QR scanning is installed in a smartphone, it has to run smoothly in all device types without any glitches.

#### **4.1.6g Application design and features**

The smart phone application and QR scanning design determines whether or not individuals will embrace the technology. Developers have to ensure that these technologies have features that are attractive, convenient, and will entice the clients. The application design theme is vital in this research. It refers to the way the technologies were made. Many people seeking to use an application will check for its design features to ensure that it is convenient for them.

Expert 1 explained that the smart phone application and QR scanning should have attractive features. '...and, of course, attractive in terms of web design and Internet

security, that is the application should be free of viruses and allow its users an ergonomic operation of it' (p. 8). Web design is a collective term that represents the user interface design, graphic design, user experience design, and the search engine optimization (Garett et al., 2016, p. 10). Web design is pivotal when launching an application. The web design sets the first impression. Internet security deals with security aspects of the application. These security aspects may include browser, website, and network security. In other words, customers would easily accept the smart phone application if it protects their devices from security threats. Thus, the application design theme is evident through the interviewee's view that the web design and internet security features of the application will encourage more people to use them.

Expert 1 said 'After that, another basic issue is to make it easy to use, and that has to do with its design and, of course, the reaction time it takes actually to do the scanning itself (ideally a few seconds at the most)' (p. 3). In other words, Expert 1 explains that the QR scanning should have a good design and should take the shortest time possible when scanning. Customers would give up on the QR scanning technology if it is not attractive and if it takes time to finish the scanning process. Therefore, to actively encourage a user to use and maintain the QR scanning technology, it needs to have a good design and an efficient scanning speed.

The first interviewee also talked about the visual attractiveness of the scanner as one feature that will encourage people to actively use it. Expert 1 said 'The visual attractiveness of QR scanning is another issue. As the QR scanning logo of Coffee Island's goods should be visible, company employees should inform the public about its existence, and billboards should advertise its proper use. Infographics on the Internet should be created and released to make it convenient and easy to commit to memory regarding specific steps to be done in order for users of it to do it correctly and recycle as much as possible' (p. 3). In other words, the aesthetic component of the logo that advertises the technology determines the motivation behind using it. The QR scanning logo having beautiful patterns and trends will attract more customers and enable the customers to differentiate between Coffee Islands' QR scanning logo and other companies' logos.

Expert 2's view on the factors that would encourage individuals to use QR scanning for recycling coincided with the application design and features theme that the

researcher had identified. ‘In my opinion, the most important aspect of downloading and steadily using a smartphone application is the quality of graphics used, how heavy and resource-intensive it is (i.e., RAM and hard disk space it takes up), and, of course, the theme of it’ (p. 8). The quality of graphics and the theme attracts more users.

Just like the public relations campaign theme the researcher had identified earlier in this study, the application design and features theme was not common among all the interviewees’ transcripts. Only two experts mentioned that the design of the application and QR scanning would encourage more people to actively use these technologies. The researcher had to assess the importance and relevance of this theme to the research question before listing it as one of the appropriate themes in the study (Braun and Clarke, 2006, p. 87). Therefore, themes that are not common during coding can still be used during the analysis.

#### **4.1.6h Altering Stakeholders’ perceptions**

Stakeholders are individuals whose support determines the success of the organisation. Stakeholders could be employees, customers, suppliers, the government, local authorities, activist groups, and other interested parties. The researcher developed this theme to determine the general public’s view on Coffee Island’s green marketing strategy. There was a possibility that the public would not embrace the green marketing strategy. The rationale for this possibility was that most companies use the green marketing strategy to mask green washing.

Green marketing is the practice of a company or organisation developing and advertising their products or services based on their perceived environmental sustainability. These practices include advertising the reduced emissions associated with the product manufacturing or a company advertising itself as being environmental-conscious (Maziriri, 2020, p. 56). A company that presents itself as environmentally-conscious often support environmental friendly activities such as tree planting. However, companies may present themselves as environmentally conscious, yet in reality, their products pollute the environment. The action of a company or organisation to mislead people into thinking their products are environmentally sound and friendly is known as greenwashing.

Greenwashing is an unsubstantiated claim to lie to customers into believing that a company’s products are environmental friendly for them to purchase the product. For

example, a company may lie to its clients that their products are made from recycling, yet in reality they are not (de Jong et al., 2019, p.50). Although sometimes these claims may be partially true. However, when a company exaggerates its claims, experts still consider it greenwashing.

Expert 1 explained that many individuals question Coffee Island's care for the environment. The company is under fire for its pollution. Therefore, people may not believe in their green marketing strategy. The expert said 'Yes, indeed, such a thing might come to people's minds as the firm does charge a price for all of its products well above the cost of production of them. Currently, Coffee Island is under fire for polluting the environment, as many other firms are actually' (p. 24).

To assure the clients and other stakeholders that Coffee Island is truly committed to ensuring that the environment is not polluted, the organisation has to convince their customers that their plan to use the smart phone application and QR scanning is not greenwashing, but an attempt to protect the environment from pollution 'The key is to reposition the general public's idea that apart from being a competitive company, Coffee Island makes a diligent effort to generate the least possible pollution. To convince the average customer or outsider, the application and QR scanning can be a fantastic starting point' (p. 25). Expert 1's view supports altering stakeholder perception theme that the researcher developed.

Lack of trust from the stakeholders will frustrate campaign efforts to adopt and use QR scanning and the recycling application. Therefore, Coffee Island has to develop strategies that will alter the stakeholders' perceptions concerning the technologies in place to minimise pollution. Some of these strategies may include inviting the stakeholders to tour the coffee factory and observe the manufacturing process, involving the stakeholders in the decision-making process, and participating in environmental activities such as tree planting. Therefore, the interviewee brings out the theme of altering stakeholder perceptions that the researcher established in their speech.

Expert 2's view supports the sub-theme of building trust with the stakeholders. 'Well, operating in a free market, it is a given fact that Coffee Island, like any other purely competitive firm, strives for maximum possible profit. On the other hand, embarking on recycling programmes, and spending a lot of money on recycling activities could



potentially offset some of the negative reputations the firm has in terms of performing poorly on recycling and sustainable development of its products' (p. 26). Here, Expert 2 suggests that the company needs to engage in activities such as recycling to build trust and alter the stakeholders' perception about its green marketing strategy.

Expert 3 also agrees that people may turn down the smart phone application and QR scanning because they suspect Coffee Island could be using the green marketing strategy as a cover up for green washing. Expert 3 says 'The chances are that yes. The short answer would be yes, of course. On the other hand, although initially potentially seen with suspicion, every honest and well-grounded effort can alter the general public opinion on Coffee Island being a polluter. Of course, reposition its mindset against how much pollution it will finally create after the intervention. Greenwashing is something important, as many buyers of Coffee Island may consider it. Altering perceptions and raising awareness on environmental issues should be the ultimate goal of Coffee Island. Ideally, the application and QR scanning should be disconnected from the firm and be deemed part of an overall environmental effort far-reaching beyond the limits of a single firm. The reports that I receive from customers are such that they consider Coffee Island to be a heavy polluter of the environment. Such a high level of pollution should be reversed immediately. All in all, Coffee Island is on the right track of reducing negative rumors around its name' (p. 26).

Expert 3 explained that many people consider Coffee Island a company that pollutes the environment. To get them to believe in the company's green marketing strategy and embrace the smart phone application and QR scanning, Coffee Island needs to alter the stakeholders' perceptions and raise awareness on environmental issue. The expert's view coincides with the theme the researcher had identified in the study.

Expert 4 also believed that the public will be suspicious of Coffee Island's green marketing strategy. However, they suggested that the company could involve the audience, show acts of remorse, and reduce its pollution for people to believe in the company's efforts to minimise pollution. The expert says, 'Well, actually, yes. Do not forget that free-market operations have led to having one of the most individualistic societies of all times in Greece. Everyone says, *'what's in it for me?'* So, most probably, they might consider the same for Coffee Island, regardless of its efforts in tackling pollution. In my opinion, actively engaging your audience, showing honest

actions of remorse, and efficiently/promptly reducing and internalizing externalities to reduce pollution can make the public less suspicious than not doing so' (p. 24).

In other words, for Coffee Island to get people to believe in their green marketing strategy, they have to actively engage its audience, show honest actions of remorse, and efficiently/promptly reduce and internalise externalities to reduce pollution. All these people will help the company build trust with the stakeholders. Thus, these suggestions on how to build trust with the stakeholders support the altering stakeholders' perception theme.

#### **4.1.6i Efficient usability**

Usability is how well a system or application performs tasks to achieve its goals and objectives. For individuals to adopt a system, it has to be effective, efficient, pleasant, and have tolerance for error. The researcher identified this theme to explain the factors that will encourage more users to use the smart phone application and QR scanning.

Expert 1 explained that individuals would want an application that is easy to use and is easy to download. 'In my opinion, a vital differentiation factor is to make the smartphone application easy to use, light in Megabytes to download, so it does not consume a lot of hard disk on a user's smartphone, and, of course, attractive in terms of web design and Internet security, that is the application should be free of viruses and allow its users an ergonomic operation of it' (p. 3).

Expert 3 also believed that the application's usability will determine how people use and perceive it. Expert 3 says 'In actuality, there is an array of reasons why a user would start and maintain steady usage of a smartphone application. A basic reason is convenience. By convenience, I mean that the application should be light and not consume much hard disk and RAM. Furthermore, the better the graphics and sound effects, the more are the chances to be downloaded' (p. 16). Expert 3 mentioned convenience, which translates to the systems ease of use. Therefore, efficient usability is an appropriate theme for this study.

## **4.2 Conclusion**

Four experts participated in the interviewees for this research. The experts were familiar with the pollution Coffee Island produced and had different strategies to

minimise this pollution. The thematic analysis of this research used the six phases Braun and Clarke (2006) suggested in their book on Thematic Analysis. The six steps include familiarising with the data, generation of initial codes, searching for themes, defining and naming themes, and producing the final report. Familiarising with the data involves immersing into the data to familiarise and scrutinise it. The author of this study familiarised themselves with the data through transcription. Transcription is the process of processing data into a written format.

Generation of initial codes is an essential step when conducting thematic analysis. The codes enable the researcher to form themes that will answer the research question or meet the research objectives. The research objective was to determine to what length Coffee Island can reverse the negative impacts caused by its pollution by implementing recycling technologies. The generated themes included motivation, heavy pollution, social media, viral marketing, broadcast media, public relations campaign, altering stakeholders' perceptions, compatibility, efficient usability, and application design. These themes enabled the researcher to determine the success rate of recycling technology Coffee Island should use to minimise its pollution.

The results from this research analysis gave perspective of how the CAL intervention could produce the desired results. Some of the interviewees suggested the rewards programme to encourage more people to use the recycling technologies. The researcher believes that rewards programmes could help in tracking progress. Not every user is liable for a reward. Only users with a high track record are entitled to a reward. This would motivate the users to use the application more to be liable for a reward.

Results from this analysis also show that social media plays essential roles to minimise pollution in the environment. The experts suggested the use of social media platforms such as YouTube, Twitter, Facebook, and Instagram to encourage more people to download and use the application and QR scanning. The social media platforms help create awareness through advertisement. Most people use social media to network, socialise, and learn. Therefore, it is an efficient way to encourage people to download and use the application and QR scanning.

## **CHAPTER 5: Study 1 and Analysis of the E-questionnaires**

### **5.0 An overview of the e-questionnaires and their mechanics**

The present research also conducted interviews utilising a Likert scale. There were no open-ended questions since such a research method has already been used in Study 2 (open-ended interviews with four practitioners in their fields). The format was solely over the Internet, as it was considered to be by far the most an effective, quick, and proper method based on the condition it caused minimum inconvenience to its participants. E-mails can be opened at any time of the day their recipient wishes. So, no annoying phone calls or other more intrusive methods were opted. E-questionnaires most, but not exclusively, focused on answering the following question:

- a) *How many customers will be willing and able to use the smartphone application and QR code scanning consistently for the purpose of reducing pollution generated by my firm? (Proposal Thesis 2018 of the present DBA thesis).*

The sample was drawn from the existing Coffee Island's loyalty programme, so participants had already allowed through their enrolment to consent to any research, queries, or any other form of communication regarding Coffee Island's goods and services. The sample was 300 people, and they were chosen based on certain criteria. 150 were males and 150 females, so there was an equal distribution based on gender. The age group was again on purpose capped at 25 and 45 years of age. Based on Coffee Island's official statistics, such age group is consuming coffee beverages and confectioneries. Given the dynamics of that group and, most importantly, they are typically professionals like lawyers, doctors, and scientists. They have a higher than average income and many years before retirement. Their spending habits might increase even more. Coffee Island's Sales Department offered me trends about various age groups, but 25 to 45 years old consumers make the most usage of its goods and have a high future propensity vis-à-vis other age groups.

Another basic metric for including someone in the list was that she/he had to be a paying customer for at least two years. Any attempt to recycle has to be on an ongoing basis and not a once-off. It is logical; as such, a problem is gigantic and recurring. Any effort to recycle has to be done continuously, and a reciprocal

relationship between Coffee Island and the average consumer has to be built. So, asking customers who have been buying the product only for one month to offer their opinion cannot satisfy the criteria of long-term commitment. Therefore, customers buying Coffee Island products for at least two years were chosen.

### 5.1 Analysis of the answers received on the e-questionnaires

Out of the 300 e-questionnaires sent, 270 responses were completed, while 30 e-questionnaires remained unanswered. Even if they were received, no reply was offered until the last day that was available for the recipient to reply. So, the response rate was exactly at 90%, which is a high percentage. The more responses, the more differentiation from the sample's opinion can be gathered, and more analysis can be made.

Out of the 270 responses, 140 were men and 130 women. So, this pretty much covers *Question 1*'s answers. It was more or less expected since reply rates are not typically associated with any possible gender issue.

About the age distribution, 130 answers fell into the 25–30 years old group, 110 answers were in the 30–35 years of age, and finally, 35–40 and 40–45 were 20 and 10, respectively. So, the distribution was somewhat smooth, with the trend falling in favour of the youngest segment of the desired 25–45 demographic.

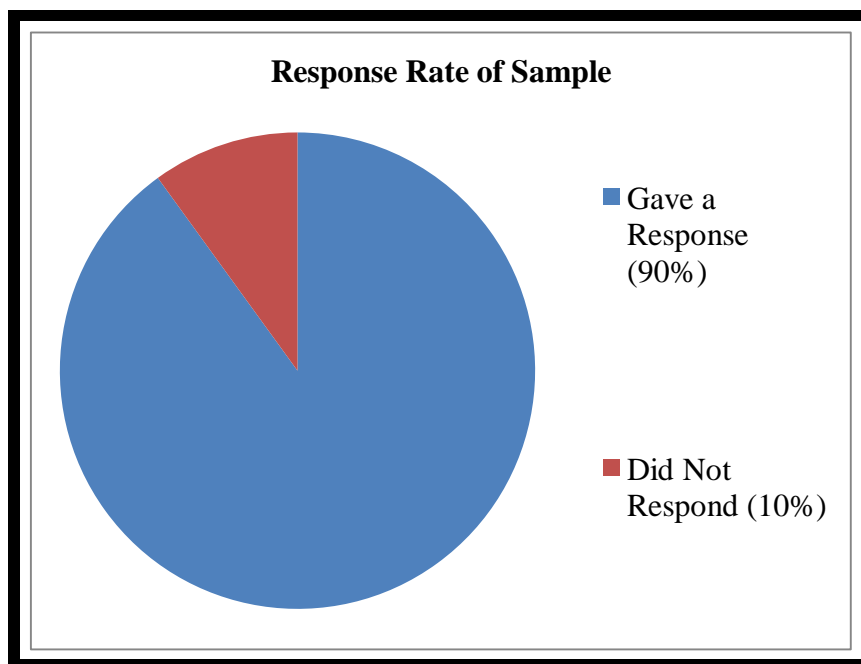


Figure 6. Pie chart presenting the response rate.

The next visual representation presents the ratio of males to females, which was relatively balanced.

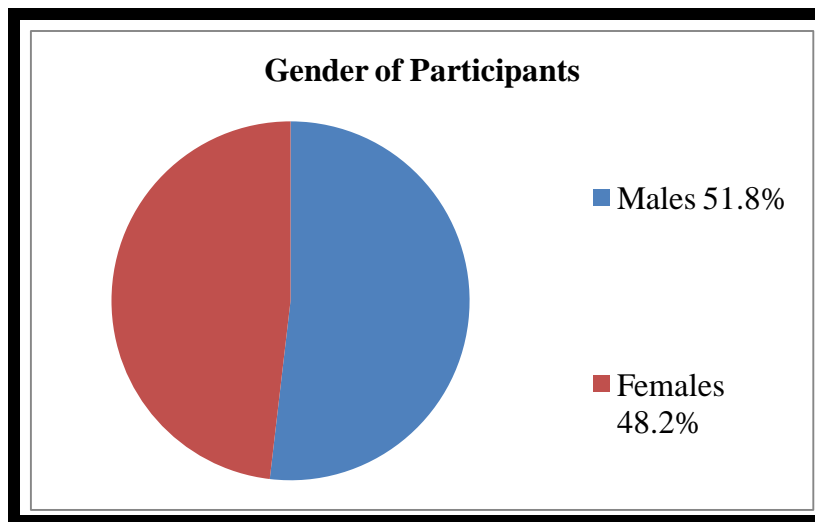


Figure 7. Pie chart showing the volume of the gender of participants in the current sample of Study 1.

The next pie chart expresses in visual form the age distribution of the 270 people who replied to the questionnaire.

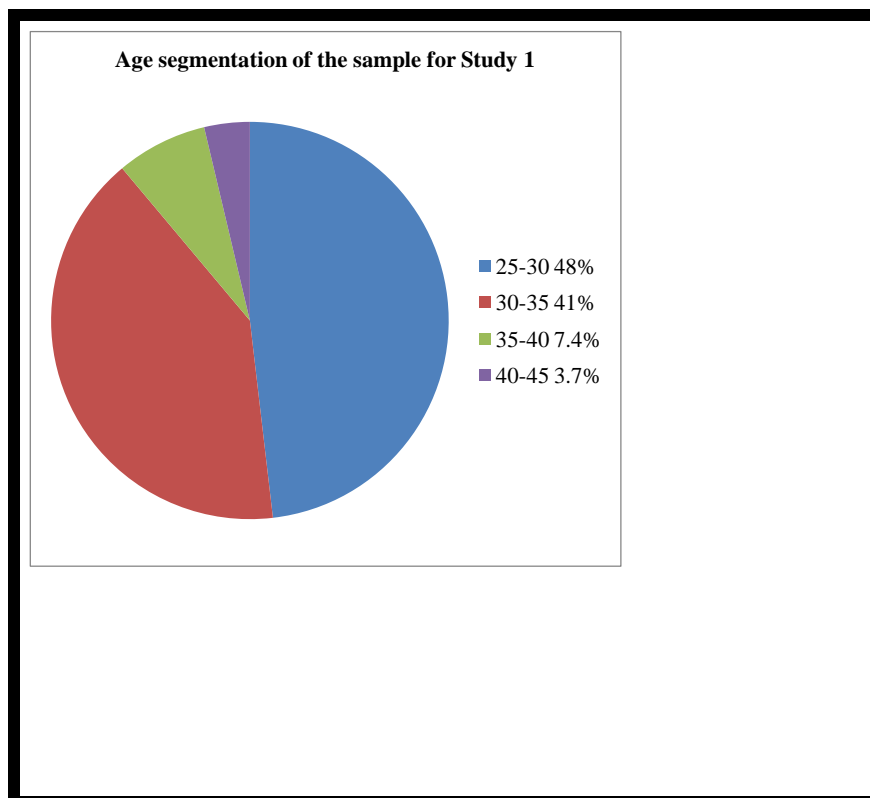


Figure 8. Pie chart presenting the age segmentation distribution of the participants in the sample of Study 1.

About *Question 3* on how many years a user has been buying Coffee Island goods, the answers were as expected. All of the respondents answered that they had been paying customers for two or more years. Such a thing was logical since, beforehand, the sample was selected based on that criteria. But the revealing part was how the answers were scattered. One hundred answered that they were purchasing for 2 years; 40 mentioned 3 years; 130 said 4 and more years of perpetual buys from the firm. Having answers at the extreme end of the scale (4 and more years of Coffee Island's purchase of goods) disclose the identity of the sample. Almost half of the responses (48.1%) bring to the surface a continuous and most probably fulfilling customer relationship with Coffee Island. Given the availability of thousands of substitute goods and direct competitors (i.e., Starbucks, McDonald's, Lavazza Café, etc.), it can safely be assumed that the responses come from highly loyal and satisfied customers. It is a good thing as it shows that engagement and familiarity with the brand are incredibly high. Should Coffee Island engage them in recycling, the chances of them at least listening to the proposal and hopefully following and sticking to it are quite high.

*Question 4* on the e-questionnaire depicted the negative perception its customers have for Coffee Island. Out of the 270 responses, 200 answered 'yes' to the posed question: 'Do you consider Coffee Island a firm that pollutes the environment?' (E-questionnaire on Study 1). 74% of responses were affirmative. They indeed saw Coffee Island as a pollution-generating firm. It is implicitly implied that something should be done. 74% of the answers on the issue of Coffee Island being a pollution-generating organisation means that practically well above half of the devoted paying customers value that Coffee Island creates more pollution than it should be. The author considers that Coffee Island should capitalise on the specific weakness and actively engage its participants in Study 1 as a stepping stone to further the intervention method of recycling through a smartphone application and QR scanning.

*Question 5* on the e-questionnaire asked an important question. How many hours does a particular Coffee Island customer have access to the Internet daily? The author believes that routine behavior shall be developed by regularly viewing the application

and QR code scanning. In particular, whenever an individual confronts the recycling application icon, immediately, she will remember to engage with it. So, it makes sense that the more hours an average user has access to the Internet, the better the chances of viewing the application and QR scanning. Hopefully, through motivation and routine cognitive programming, use it. Boser (2019, p. 33) wrote that ‘a growing body of research is making it clear that learners are made, not born’. In actuality, by incorporating into their daily lives easy and efficient ways of engaging with the smartphone application and QR scanning, it will become second nature for them to use and appreciate the benefits to be derived for themselves and society altogether. Boser (2019, p. 34) mentioned that ‘by setting targets, people can manage their feelings more easily and achieve progress with their learning’. So, ‘learning is a learned behaviour’ (Boser, 2019, p. 34). Coffee Island can teach/train its customers to embrace the application’s capabilities fully. This will allow them to learn from the firm’s negative experience and highlight how learning from one’s mistakes can positively reverse the negative externality.

Out of the 270 respondents, 260 positively replied to the question relating to regular Internet access. By the term ‘regular’, this study meant 20 hours per day or more via any means possible. Actually, 258 replied that they have an unlimited Wifi contract access to the Internet through home networks. At the same time, 2 mentioned that they have a Wifi password in public Wifi hotspots, and they regularly pay a visit to Internet Cafes. Unfortunately, 10 respondents do not have regular access to the Internet.

For this reason, the idea to offer free Wifi access to Coffee Island’s customers to promote the application and QR scanning would be relevant. Thus, they can download and repetitively use the application and scanning options whenever they are in a Coffee Island’s retail shop. The following graph depicts the segmentation of how many people have regular access to the Internet daily (20 or more hours per day) based on the sample’s answers.



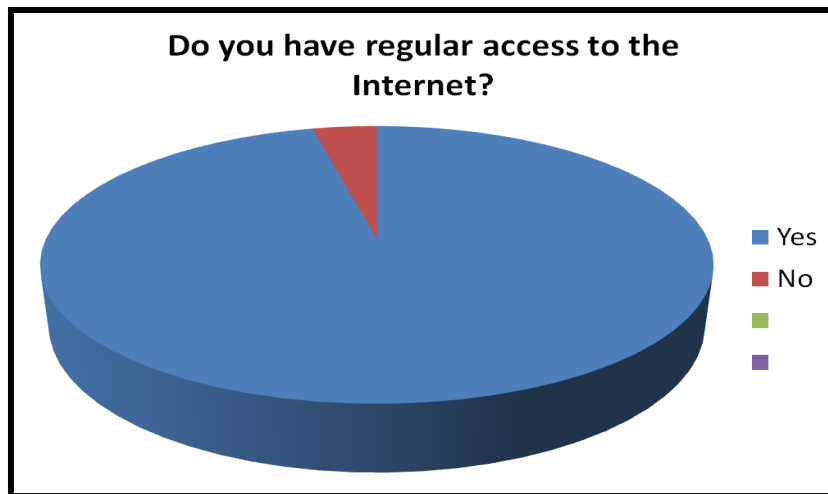


Figure 9. Pie chart presenting the answers to the question 5.

*Question 6* was also vital because an essential prerequisite for fully utilising the application and QR scanning is that the user must personally own a smartphone device. So, in response to question 6, ‘Do you own, carry, and use a 3G smartphone (or newer version) on your daily routine while shopping at supermarkets, retail shops, etc.’, 250 out of 270 replied affirmatively and 20 negatively (92.5% and 7.5% respectively). This is a key point that shows some discrepancy between responses to questions 5 and 6. Ten responses revealed that although these users have Internet access (via Wifi or other means), they do not own a smartphone. These 10 customers might revert to laptops, PCs, etc., to access the Internet. It is a problem. Without a smartphone, it is next to impossible to scan the item to be recycled and track down someone’s progress.

The following pie chart illustrates the answers to personally owning a 3G smartphone (or newer version).

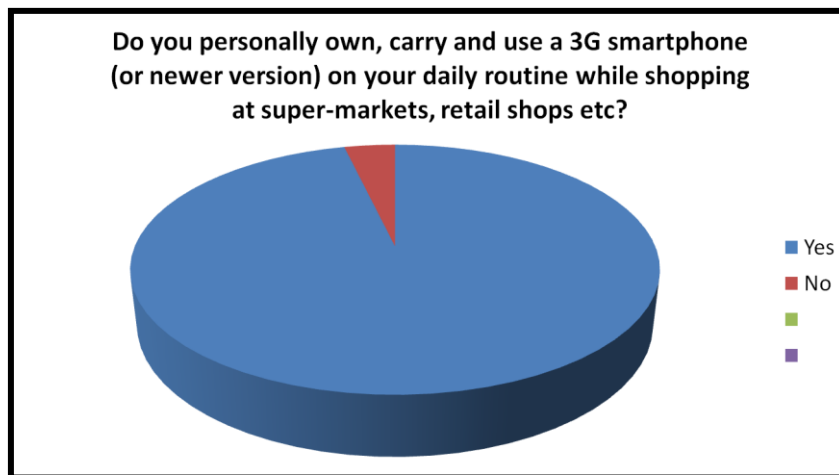


Figure 10. Pie chart presenting the answers to the question 6.

*E-question 7* wanted to test the sample's current conditioning, given that they were not aware of the proposed Coffee Island's overall intervention campaign based on critical action learning. So, the question read as following: 'How often would you use an application which can reduce pollution generated by humans?' (Question 7). The replies were quite positive indeed. Participants were given options ranging from zero times per week to one, two, and three or more per week. Fortunately, only 20 (7.4%) replied that they would not use such an application (zero times per week) while 25 (9.2%) others mentioned that they would use it once per week. One hundred (37%) replied that they would interact with it twice per week, and 125 (46%) others would like to use it three times and more in a week. The results stemming from the specific responses were supporting the present interventional strategy. There seems to be a willingness to engage and deploy a recycling application. Ideally, the 20 respondents who lack such desire to utilise a recycling application can be convinced to do so via word-of-mouth and/or other marketing and public relations techniques to be announced mainly over social media. The following Figure 11 presents responses to *Question 7* of the electronically constructed questionnaire.

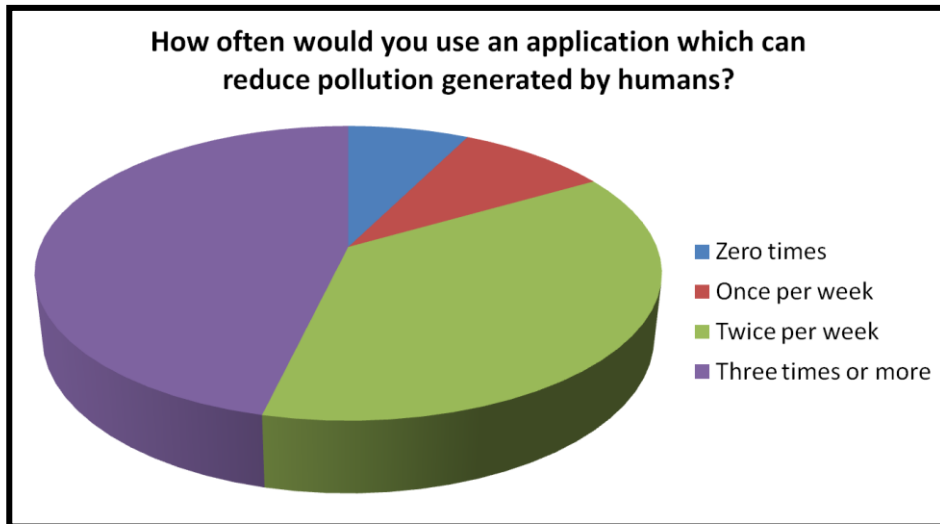


Figure 11. Pie chart presenting the answers to the question 7.

As the questions in the e-questionnaire progressed, more and more useful analysis came up. In particular, *Question 8* of the e-questionnaire was very insightful. It offered four options that would entice a user into using an application frequently: speed of the application, cost of using it, reward points, and graphic design and sound effects. The author considered that offering a single once-off answer would potentially eliminate responses that could benefit the application altogether. Two hundred replies mentioned that the speed of the application plays an important role in using it.

Definitely, it makes sense as slow and obsolete applications are rendered obsolete in daily practice, and users most probably will delete them if they are seen as outdated and too slow. Two hundred fifty persons cited that the cost of using the application was going to be a decisive factor in using the application. Coffee Island intends to make the application freely accessible for every user. This resolves the major concern of charging for the application, as some do charge for their service (iPhone applications typically do so). Almost all respondents (260) stated that reward points are a strong motivator for using the recycling application. In the current thesis, the author has emphasised that *green coins* and other rewards will be utilised to stimulate users to continue application usage and motivate them to make the application go viral. One hundred ten answers stressed that graphic design and sound effects are important reasons for using a recycling application. Although the graphical design and sound effects should be attractive and modern, the author considers it a minor

contributing factor in consistently using a recycling application. Based on the answers to e-question 8, reward points are the most popular reason; hence, reward points via vouchers and *green coins* should be incorporated into Coffee Island's intervention. According to ABA Bank Marketing (2013, p. 34), an application should allow consumers to set goals for desired purchases, including budgeting recommendations and best purchasing suggestions. Reminders notify the user when considering a purchase that may be more in line with his or her financial situation'. In the case of Coffee Island's recycling application, an adjustment can be made by notifying whenever a consumer is near her goal of receiving the *green coins* or any form of reward, i.e., vouchers and gift cards for coffee and confectioners. Moreover, notifications are important as most smartphones utilize them all the time. Offering suggestions to application users can potentially establish Coffee Island as an expert in recycling and recycling efforts altogether.

Valanju (2013, p. 56) exclaimed about the significance of reward programmes, particularly over social media such as Facebook, Twitter, and Yelp. Some of the great benefits of reward programmes based on social media are to 'attract new members by offering bonus points for referring friends, opening new accounts, and sharing information through social networks and mobile apps. They also increase non interest income' (Valanju, 2013, p. 56). So, the average application user can reap the benefits of the reward programme by collecting the designated and proposed green coins. Coffee Island can gain many positive social media exposure, shares, and suggestions of its application via social media and cross-promotion amongst those users. Finally, Wirth (2017) mentioned that loyalty programmes are vital in restaurant applications. More specifically, 'consumers – especially millennials and younger diners – prefer to use digital methods to keep track of loyalty, versus having punch cards or keychains' (p. 24). Coffee Island's programme offers convenience because it does not require any additional tool that customers will not use otherwise. With their smartphone, the average user can reap many benefits. Wirth (2017, p. 24) also writes that for companies, the benefits are that it helps in 'building sales and customer traffic'. For Coffee Island, it will significantly enhance its green reputation amongst coffee enthusiasts. With incentives for recycling efforts, QR scanning, and cross-promotion of recycling efforts and bonuses/*green coins*, *vouchers*, etc., to those who achieve

specific and measurable recycling goals (i.e., recycle 10 plastic caps per week), the firm can increase traffic.

From the answers to *Question 8*, reward points are the most important contributing indicator of whether the average user shall use a recycling application. Human beings act based on incentives, so it is logical for them to ask a fundamental question, *what's in it for me?*. Subsequently, they can be educated into the extensive benefits recycling has to offer to the external environment and the planet as a whole.

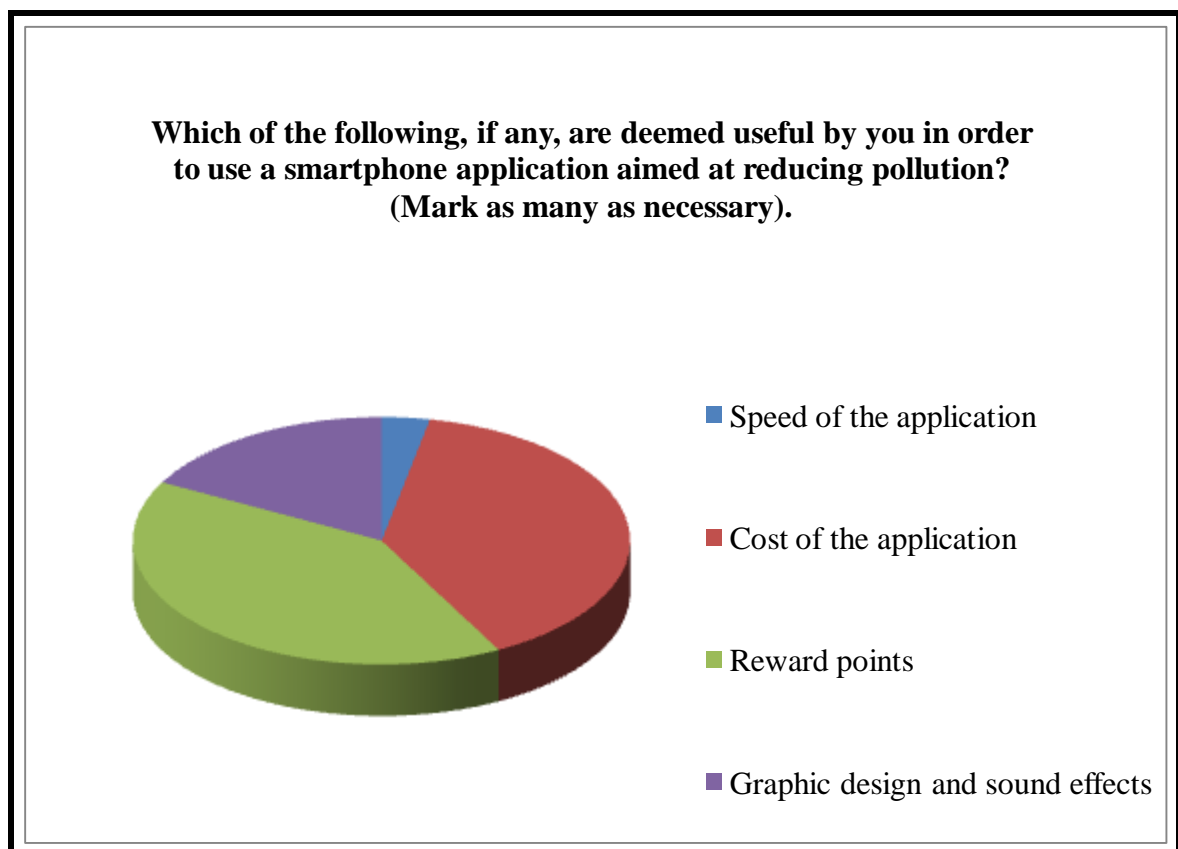


Figure 12. Pie chart presenting the answers to the question 8.

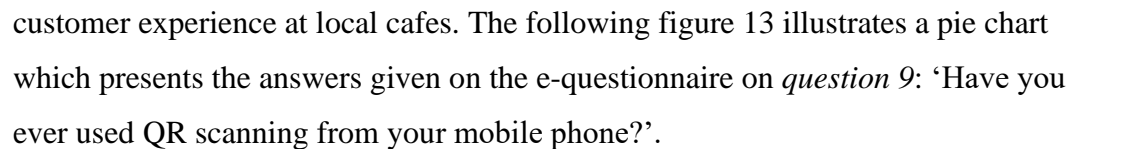
The e-questionnaire asked the sample how many times they have used QR scanning in their lives. The Likert scale options ranged from never to 1–50 times, 51–100 times, or more than 100 times. Out of the 270 responses coming from the sample, 10 people replied that they had never used QR scanning, 100 said that they had done so for once up to 50 times (37% of the responses), 50 people gave the 51–100 times answer (18.51% of the respondents). Finally, 120 people mentioned they had utilised QR scanning more than 100 times in their lives. The author was pleased to find out that through the existing sample, coming from loyal customers of Coffee Island, 44.4%

were already familiar and aware with QR scanning. QR scanning is vital for Coffee Island's recycling efforts, as it will be cue-based learning.

When a user of the QR scanning approaches a Coffee Island or affiliate premises that engage in recycling, a notification/vibration shall go off on her smartphone.

Subsequently, other visual and hearing aids will motivate the user who has received the stimuli/cue from a designated Coffee Island recycling facility. The author wishes the intervention to go as follows: the user of the application and QR scanning scans the QR codes of recyclables, and after that process has been done, she drops them inside the recycle bin. Immediately, reward points (aka *green coins*) are awarded to her phone, enhancing motivation. Repetitive business is a necessity in retail. The same goes for recycling, as indications are that global warming and human needs will lead to more and more pollution over the years to come. Cue-based behaviour is vital, and the positive issue is that 44.4% are well aware of how QR scanning works.

Hence, Coffee Island will not have to spend factors of production on educating users. Unfortunately, 3.7% do not know how to use QR scanning. Through an integrated marketing campaign, Coffee Island can teach those people how QR scanning works through an integrated marketing campaign. A proposal is a self-help tutorial over Youtube, and namely through Coffee Island's official Youtube channel.

Moreover, once the intervention is materialised, Coffee Island employees will educate and help customers in QR scanning. Yet again, a massive and integrated effort coming from all the company's departments can lead to synergies and an improved customer experience at local cafes. The following figure 13 illustrates a pie chart which presents the answers given on the e-questionnaire on *question 9*: 'Have you ever used QR scanning from your mobile phone?'.  


The least chosen option was 'Seeing the results gained via a graph at the end of each period (like an accountability design graph)' with 110 out of 860 replies (as the e-questionnaire allowed for multiple possible answers), capping a 12.8%. The specific answer was by far the least popular one, and there could be various reasons. A mere graph cannot motivate potential users enough, even more, when it appears after the effort and trouble that has been undertaken. Additionally, a graph is not deemed by the author as a strong enough motivator like a voucher, which in real terms is income after-tax money saved from buying favourite coffee beverages and confectioneries.

Whenever a voucher for 5 Euros is given to a customer recycling some items conveniently through instructions and maps presented on her smartphone, the customer saves this amount. Taxation on income is quite heavy in Greece. Therefore, a voucher for 5 Euros adds to the after-tax income of the customers. The tool of showing the results gained in recycling terms (i.e., carbon dioxide not being produced over a set time) will be on the application. Still, little effort should be given to it based on the questionnaire's results.

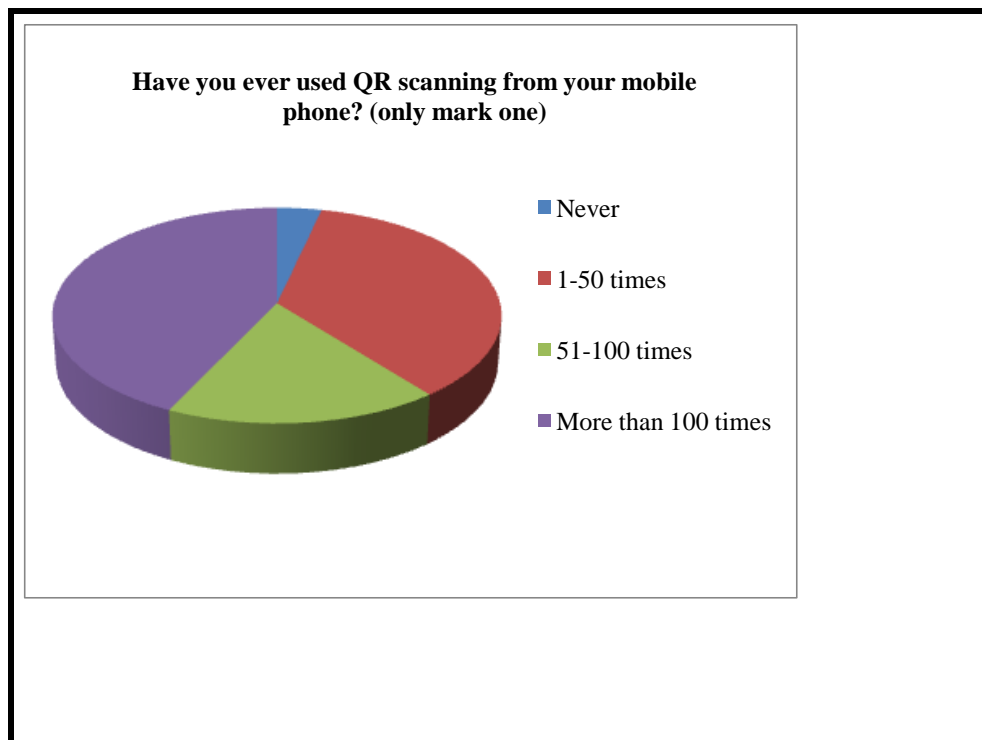


Figure 13. Pie chart presenting the answers to question 9.

*Question 9* revealed that besides a few exceptions, customers are willing and able to utilize QR scanning. It can be safely assumed that it is a useful and relatively inexpensive tool for Coffee Island in its recycling arsenal. The firm needs no time to educate and train its customers and personnel to grasp the gravity and magnitude that QR scanning can play in its overall recycling efforts.

*Question 10*, the last one, was one of the most key ones as it specifically asked participants what could act as a motivator to a person to keep using an eco-friendly application. With learnings from experience, expansion is somewhat easy at its first stages. However, the more a firm expands, the more diseconomies of scale prevail. Keeping customers satisfied with the overall Coffee Island ambience is important.

Moreover, the application is quite expensive in terms of production costs, so the only way to break even the cost and gain externalities for society is through its continuous use.

Question number 10 in the e-questionnaire offered the option of respondents replying to as many as necessary (mark as many as necessary to be exact), so more than one answer could be produced as a result. Furthermore, the author of the current thesis ascertains that *Question 10* was a key question for the whole project. It was derived from the specific question utilised for the intervention of recycling altogether. The results gave a minor advantage in preference to the option of ‘Famous people promoting the application’ with 210 out of the 860 total ticks (22.4%) for the specific option. NBA’s prestigious players have embarked on various recycling efforts. Brennan (2011, p. 9) proposed using a mixture of a technique combining mail and Web survey to ‘reach Opinion Leaders and Innovators’. This method seems to yield positive results in recruiting Opinion Leaders and Innovators for a societal cause. Coffee Island can learn from this and adopt such a method.

Opinion leaders and social media influencers can motivate the mass of their fans and supporters to contribute to a worthy cause. Additionally, whenever the application is promoted via social media and other means of e-commerce (i.e., webcasting/live streaming), subscribers of those famous people are immediately presented with the information and potential benefits it has to offer to them. Coffee Island can earn visibility through product placement on famous people’s Youtube channels. It can gain popularity by merchandising its overall product line (i.e., coffee beverages and confectioneries) and its recycling application QR scanning schemes.

The second most popular option at *Question 10* was ‘reminders by my smartphone at regular intervals’. Some people are persons of habit. In other circumstances, though, a friendly reminder may be needed to push a user into starting to recycle once again. Many people might forget the application and the benefits society can gain (potential social welfare gain). On top of that, a routine is developed whenever a user is reminded of her recycling responsibilities. Obviously, such an application cannot make it obligatory to recycle. Yet, a friendly reminder like *how much did you recycle today* combined with a sad emoticon next to it will immediately imply zero recycled items for the day. 200 out of the 860 answers (23%) found ‘reminders by my smartphone at regular intervals’ as a means of motivating a user to keep using an eco-



friendly application. Such a percentage is relatively high and worth mixing with the winner of the present question category, ‘famous people promoting the application’. Ideally, the reminder could come from the voice and/or image and/or message of a famous person who is shown to recycle herself. For instance, Will Smith, a very popular Hollywood actor, broadcasted a lot of his medical exams over the Internet to promote them and make the public understand that even super stars need to go through their physicals.

190 out of the 860 replies were made on ‘participating in social media support groups which actively promote recycling via the specific application’ at a percentage rate of 22%. Here the overall realm of support groups and knowledge management is revealed. Social media support groups are virtual teams on Facebook.com and other similar sites. Their users and group members exchange ideas on how to recycle, how the QR scanning works, and via images and videos, text, and the like, they can motivate each other. Furthermore, tutorials on troubleshooting might occur, alleviating some of the burdens of asking Coffee Island’s employees about each little detail of both the application and QR scanning processes. The author fervently claims that such social media support groups can enhance recycling as teamwork. Healthy competition amongst members who all strive for a good cause can lead to better results than reducing pollution on a single level basis. Ideally, social media support groups will organise recycling efforts based on the application and QR scanning and other more tangible attempts like cleaning Alimos Beach (a central and heavily polluted Athens beach). All the projects can be filmed and presented over the Internet and mass TV channels.

Yannopoulou et al. (2019, p. 349) cited that through ‘political consumerism, individuals’ consumption practices are guided by concerns of justice or fairness or an evaluation of business and government actions’. Facebook and other popular social media can cross-promote political consumerism of green marketing attempts made by Coffee Island since the firm actively promotes recycling, and the social media can identify its efforts. Yannopoulou et al. (2019, p. 350) explicitly wrote that ‘social media are sites for consumer-to-consumer conversations, which have revolutionized how messages are created, shared and maintained, both in the political and other consumption realms’.

Coffee Island can use those social media (Yannopoulou et al., 2019) and capitalise on disseminating information. A trendy and well-written logo, tagging friends on the application, or even taking pictures and videos of recycling attempts can boost the endeavour.

150 answers out of 860 (17.4%) were capped at ‘Gaining points the more I participate (i.e., more recycled bottles, more reward points in vouchers). *Green coins* were one of the cornerstones of the present intervention. Users will knowingly help reduce pollution, yet they should be rewarded for their time and effort. Additionally, vouchers have a meagre cost for Coffee Island in terms of variable costs (i.e., raw materials and labour) and will most certainly increase retail traffic.

Adopting those vouchers as a loss-leader marketing strategy (selling at a loss your product) might seem ludicrous. Yet, it can generate lead sales, more traffic on retail cafes, and increased popularity amongst friends and acquaintances of those who received the vouchers. For instance, a group of people will suggest Coffee Island over rivals (i.e., McDonald’s) due to the incentive of having herself a voucher. If other members do not carry one, they will be charged a normal price. So, the firm makes an economic profit. It seems a win-win situation altogether. Lu and Miller (2019, p. 90) mentioned that a loyalty reward programme’s success exists in ‘the marketer’s ability to tailor and update the programme to meet consumers’ specific needs and market conditions’.

Additionally, Lu and Miller (2019, p. 90) cited that such loyalty reward programmes ‘can also provide a range of customer information that can assist marketers in refining their messages and monitoring changes in purchase behaviour’. So, Coffee Island should create a voucher mix aiming at individual preferences and viewing which items are in demand center on improving, promoting them while eliminating less popular options. The market condition is recycling in the current thesis; hence *green coins* should ideally be given in terms of vouchers for eco-friendly drinks coming from fair-trade factories. Emphasis should be given to recyclable plastic cups, straws, cutlery, etc. Otherwise, offering coupons to create more pollution (non-recyclable plastic wraps) may end up defeating the whole purpose of engaging in recycling as a whole. Figure 14 presents the answers given to the e-question ‘what can motivate you to keep using an eco-friendly application (mark as many as necessary)’. Multiple

answers were enabled, so the 270 respondents providing 860 ticks, at around 3.2 answers per individual respondent on average.

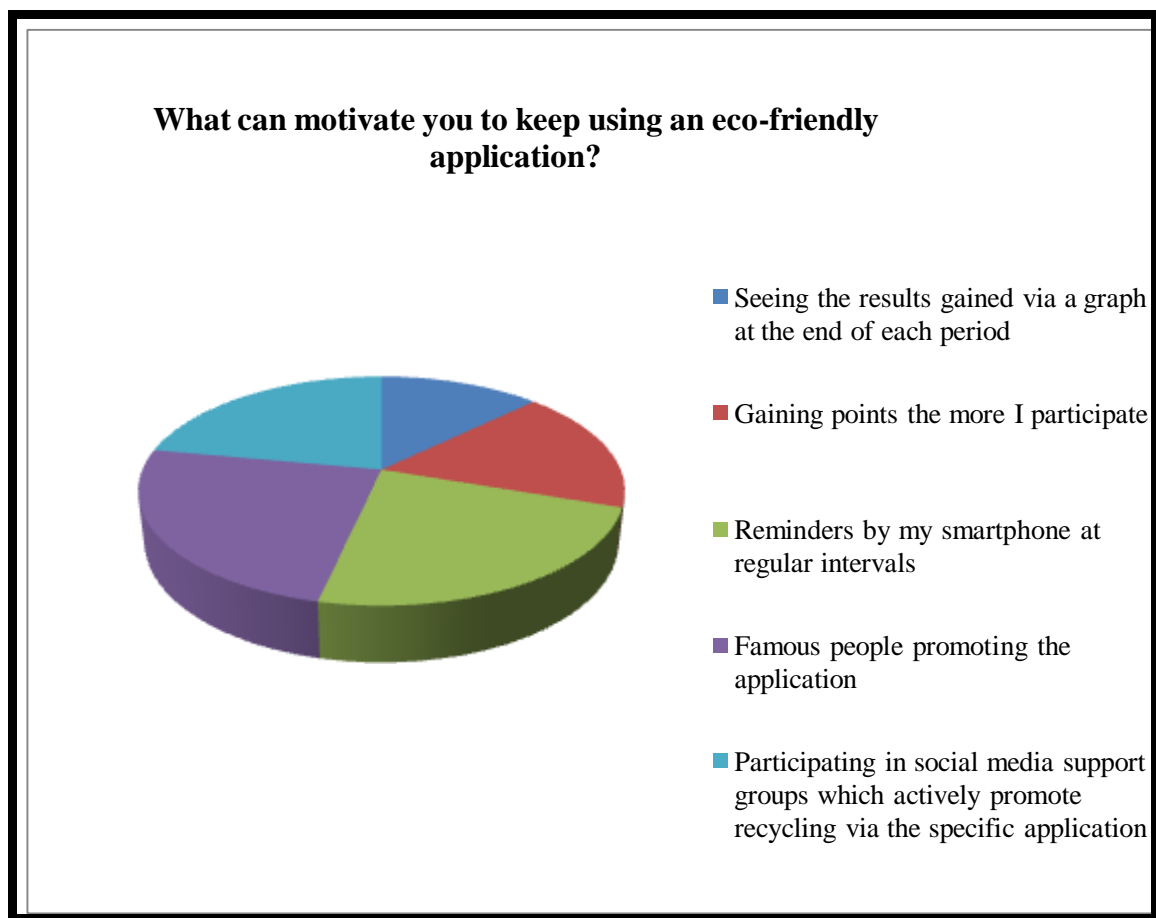


Figure 14. Pie chart presenting the answers to question 10.

*Question 11* was focused on finding out which social media the sample was at the time using. Since there is no excludability in social media usage, a respondent could tick as many as appropriate from the indicated choices. On purpose, the most popular ones in Greece were chosen since the Finance Department deems it as uneconomical to promote and advertise on low traffic/use social media for the specific recycling application and QR scanning project.

Facebook came first amongst all other options since 265 out of 270 replies were ticked on the specific option (98.1% answer rate). Facebook has been a key technological tool for many public relations campaigns, and even President's Obama political campaign was based on Facebook on finding patrons and supporters way back in 2008. Twitter came second at 240 out of 270 answers at an 88.88% response rate. Twitter has a key benefit of hashtags coming amongst its users. This digital

function immediately boosts a web page or person and puts her/it on a Twitter account front page. Twitter has its famous tweets as mottos amongst its users. However, they resemble Facebook's posts; they are viewed as more prestigious and professional than the latter. Strategic Direction (2014, p. 26) mentions that 'all kinds of users – individuals, celebrities, politicians and corporations - have adopted Twitter as a way to link up with friends, stakeholders and target audiences'. For Coffee Island, it is feasible through opinion leaders in Twitter to boost its message. According to Strategic Direction (2014, p. 26), in Twitter, 'the only limit to how far and how fast information can spread is the extent of users' networks and the follower-following relationships between users'. So, a brand image can be augmented for Coffee Island (Strategic Direction, 2014). The firm can be seen as actively engaging in recycling attempts, providing enough support from influential Twitter users (Strategic Direction, 2014).

Instagram was the third most popular answer capping 200 out of 270 responses (at a 74% ratio of ticked options). Instagram entails a lot of visual aids, mainly photos, and videos. Some models use it to promote their image. Coffee Island can benefit from this digital age and image-making era, and it could do so via live broadcasts on Instagram and presenting virtual albums on it. Furthermore, famous models, athletes, and Instagram influencers can readily present a variety of recycling efforts, and at the same time, hashtag the efforts in other social media channels. De Veirman et al. (2017, p. 799) specifically mentioned Instagram influencers as key in modern marketing campaigns, deviating from past and outdated heavy commercial wars amongst rival firms. De Veirman et al. (2017, p. 799) wrote that 'being a social networking site that provides users with video- and photo-sharing possibilities, Instagram lends itself very well for eWOM [electronic Word-of-Mouth] purposes because products and brands can be visually imaged and named in the caption of the photo'. This is what Coffee Island wishes to embrace. Instagram photos illustrate the application, recycling hot spots, and QR scanning code machines, and the like. Instagram influencers are people with a large audience. Ideally, they could endorse the overall effort to promote further the recycling message conducted via the application and QR scanning. 'Higher number of followers may result in larger reach of the (commercial) message and may thus leverage the power of this specific type of word-of-mouth at scale' (De Veirman et al., 2017, p. 799). So, Coffee Island's

advisors should track down and contact Instagram eco-friendly influencers to boost the chances of success of such a social media novel attempt.

Although they were able to gather some votes, all the other options are deemed as not important for the specific attempt as according to Coffee Island's motto, any effort should be great enough to leverage significant results (go big or go home approach). Although the author realizes potential problems of it, as losing some prospects from other social media members) Facebook, Twitter, and Instagram (98.1%, 88.8%, and 74%, respectively) cover other less popular options, which were most likely answered along with the top three ones. After all, Coffee Island has monetary resources to promote and conduct public relations campaigns on the most influential ones. A basic principle of economics is that when the marginal cost exceeds its marginal benefits, it should not be done. Just for the record, a citation of the answers of the remaining social media answers shall immediately proceed.

WhatsApp marked 120 ticks in 270 e-questionnaires getting a 44.4%. WeChat immediately and closely followed at 110 answers out of a possible 270 ones at a percentage of 40.74%. QZone had a limited number of patrons at just 90 ticks out of a maximum of 270 ones, getting a meager 33.3%. Finally, Tumblr was the least popular of all, with only 50 fans in a total of 270 e-questionnaires which received the lowest score of all at 18.5%. 1075 replies (as the e-questionnaire allowed for multiple possible answers), were cited on the specific *Question 11* (Study 1 e-questionnaire). Coffee Island shall utilise the three most popular and potentially influential ones (based on the number of users/fans) to further its causes into recycling via digital green marketing. Figure 15 presents the pie chart of the different social media options Study 1 gave, based on 1075 total replies and divided by how many each answer received.

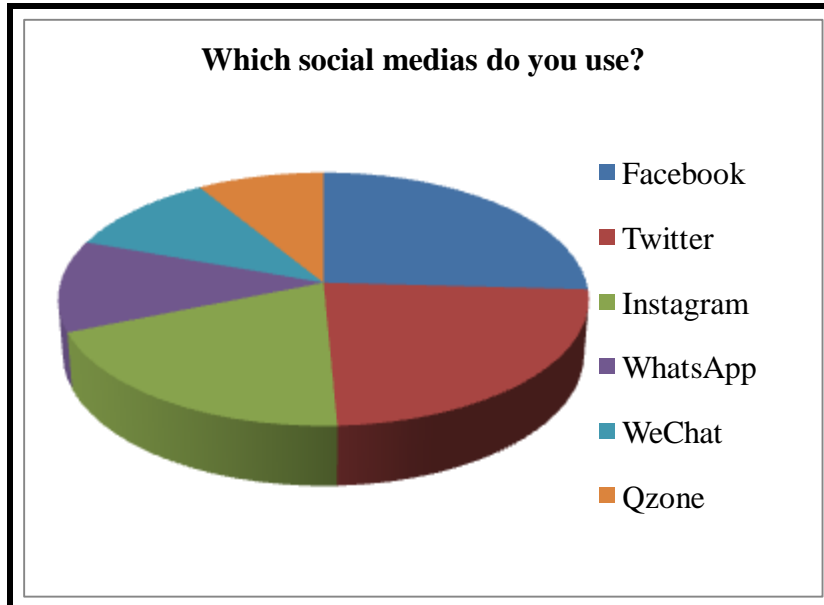


Figure 15. Pie chart presenting the answers to question 11.

*Question 12* embarked on a mission to determine the likelihood of a participant/user of the application and/or QR scanning to suggest it to a friend of hers on social media and social networks. A Likert scale yet again was used, offering options from 1 (least likely) to 5 (most likely) in unitary increments. Out of the 270 responses, 100 were on 2 (37%), 40 were on 3 (14.8%), 50 on 4 (18.5%) and 80 were on 5 (29.6%). It is quite interesting to observe that no answers fell into the 1 Likert scale option. Most probably, such a condition occurred because a user has already started using the application. In that case, the chances are that she will sooner or later suggest it to friends. Social networks have the attribute of sharing information, and applications can be easily shared and suggested. It costs next to nothing of doing so. Typical benefits can be vouchers and reward programmes. In actuality, nothing is to be lost when such a novel cause is suggested and promoted amongst friends and relatives on social media. The 29.6% response constitutes a high likelihood of promoting the smartphone application as a positive starting point for the present proposed intervention. There is a myriad of applications, from counting steps, calories, to e-banking and so on. But what will distinguish the specific recycling application and make it have a distinct advantage over the others is its potential viral character, and referrals from friends and word-of-mouth can promote it efficiently and inexpensively.

Moreover, the author wishes to emphasise that through such referrals techniques, less need for paid advertisement is needed, which costs a lot of money and might not be believed by the message recipients as it is by default paid and created by Coffee Island. Hence, a conflict of interest immediately arises. The conflict of interest means that any competitive firm would never pay an advertisement and say its product is not beneficial for its users.

Kim and Lee (2018, p. 386) specifically mentioned that ‘consumers’ activities, interests and overall lifestyles will influence their app choices and usage’. So, based on the average profile of a user, she will download and use it. For the present critical action research, she will suggest and recommend other users in social media, which are within her circle of influence, the specific app. Moreover, Leung (1998, cited in Kim and Lee, 2018, p. 388), ‘when users adopt new media technologies, they appear to project social identities such as expansionist, sophisticated, fashionable, pleasurable and enjoyable’. Through the model of social networks and suggesting the application, it can be inferred that the proposed new recycling application will be linked to one of the abovementioned social identities. Millennials, baby boomers, and other age segments seek to be tied with a certain cause. According to Kim and Lee (2018, p. 386), consumers are motivated to use specific aspects of the Internet (i.e., the proposed smartphone recycling application) based on ‘uses and gratifications’. Protecting the environment and receiving immediate and indirect benefits by doing so is a potential gratification.

Figure 16 presents the answers in *Question 12* in a pie chart form on the question ‘How likely is it for you to suggest a recycling application to a friend/relative/person from your social network?’. (Study 1 e-questionnaire).

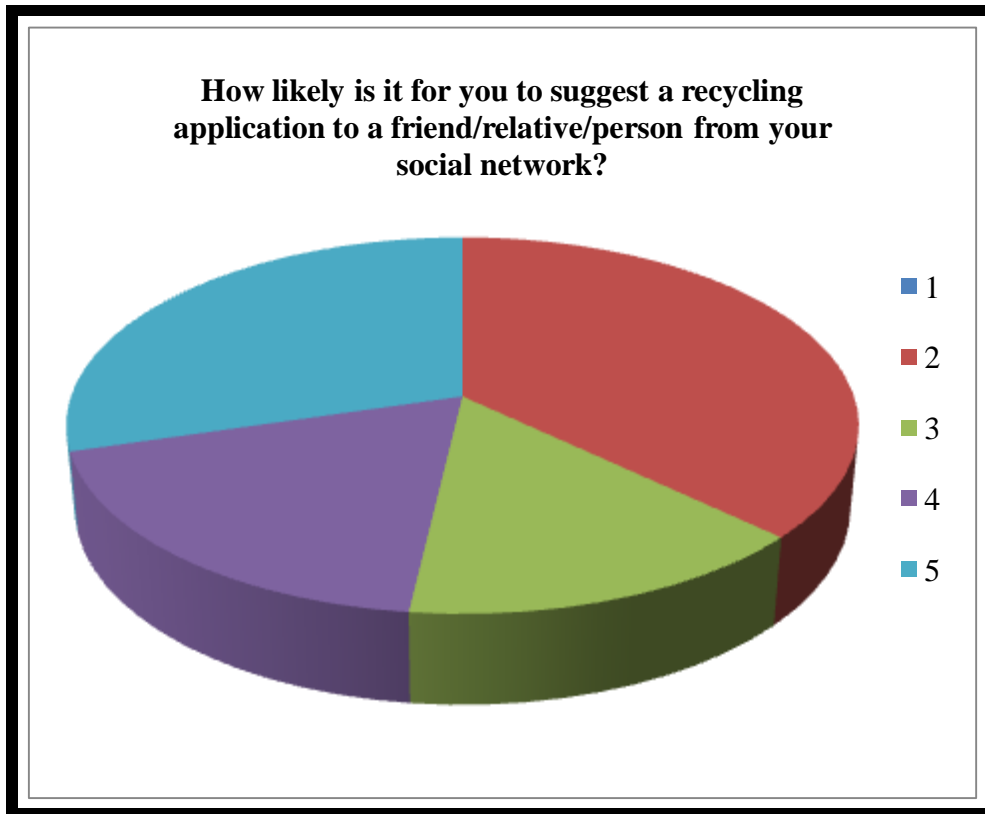


Figure 16. Pie chart presenting the answers to question 12.

*Question 13* was all about offering a particular and measurable benefit to the user of the application. Obviously, protecting the environment generates positive externalities for the user, her family, and future generations. Yet, the author strongly desires to learn from the questionnaire what motivational techniques may yield a high download and usage rate of the proposed smartphone recycling application. The script of *Question 13* (Study 1) read as follows: ‘Suppose that through using the application you are awarded green coins which correspond to various Coffee Island gifts (i.e., vouchers, free coffee mugs, etc.). Would that encourage you to keep using it more? (Tick from 1 least likely to 5 most likely).’ (Study 1). The rationale behind this specific *Question 13* was that Coffee Island customers wish to immediately observe and reward feedback on their recycling attempts. Besides the free product, the reward is also ethical, not in monetary terms, but *green coins*. Such coins offer participants a graphical representation of how much they have recycled and what they can trade it off at a Coffee Island retail shop. Furthermore, *green coins* can be used as a reward point system that promotes constructive competition amongst its users. Being linked



with more recycling leads to more such forms of non-typical currency, which yet has a value at every Coffee Island retail market.

The answers were in favour of *green coins* acting as a motivational tool. 190 (70.3%) responses were ticked on 5 (most likely) at a percentage 20 on 4 (7.4%), 40 on 3 (14.8%), 10 on 2 (3.7%), and 10 (3.7%) on 1 (least likely). It can be conferred that such a form of positively rewarding proper recycling through recycling can keep using it. The 70.3% depicts a positive correlation between the designated *reward coins* point system and the motivation and willingness of participants to keep using it. Such a positive correlation is worth considering when embarking on the smartphone recycling application. It is statistically significant, especially when compared and contrasted against the least likely option. Only 3.7% of participants expressed that it will not play a decisive role in their option to keep using the application.

Ryu and Feick (2007, cited in Sciandra, 2019, p. 68), wrote about the ‘impact of interpersonal tie-strength on referral recommendations, finding that referral rewards increased referral likelihood to weak ties but had no impact on referral likelihood to strong ties’. Strong ties, by definition, can act better than weak ones, so as per Ryu and Feick (2007, cited in Sciandra, 2019, p. 68), the reward can act better on weaker ties. Chaudhuri et al. (2019, p. 642) wrote that Loyalty Programmes could lead to better and improved ‘capabilities’ and promote its own ‘customer relationships’. Based on the specific premise, there is a cause and effect relationship that leads to changes in customer capabilities, leading to ‘relational and differential advantages over competitors and, ultimately, positive shifts in firm performance’ (Chaudhuri et al., 2019, p. 642).

The author can think of such relational and differential advantages over competitors like McDonald's and local cafes. They neither offer recycling programmes on a smartphone screen via an application nor incentivise their customers to use them through vouchers and/or any motivational point system. Figure 17 illustrates in a pie chart form the answers given on *Question 13*: ‘Suppose that you are awarded green coins through using the application that correspond to various Coffee Island gifts (i.e., vouchers, free coffee mugs, etc.). Would that encourage you to keep using it more? (Tick from 1 to least likely to 5 most likely).’ (Study 1 e-questionnaire).

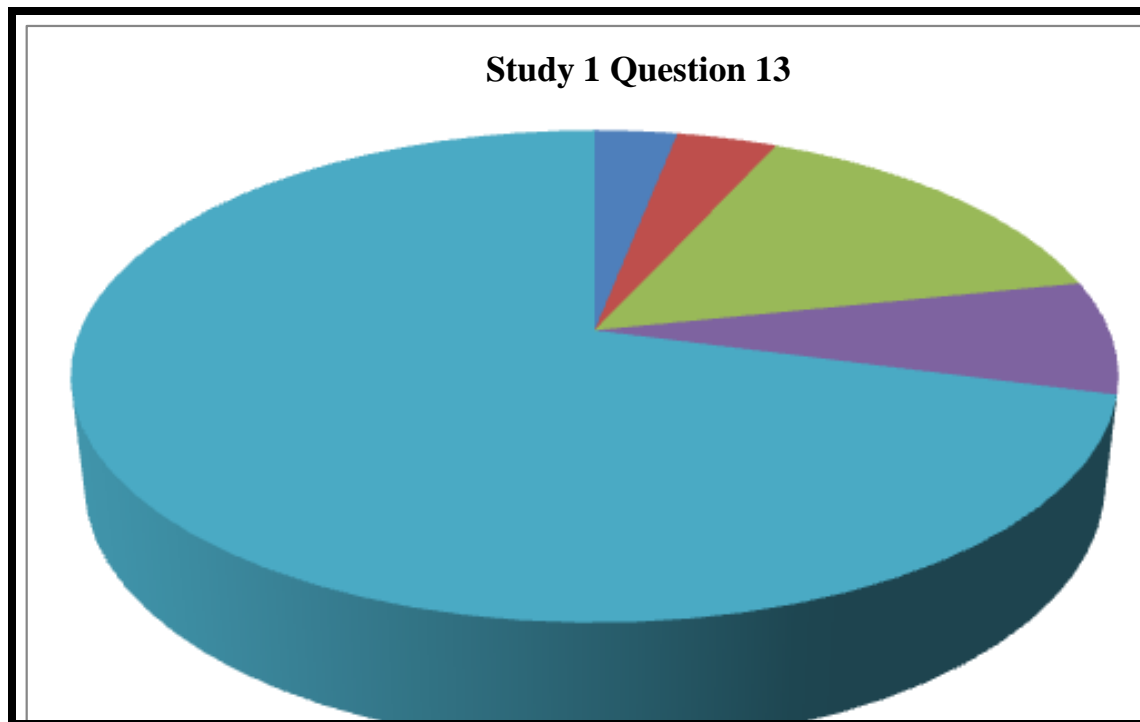


Figure 17. Pie chart presenting the answers to question 13.

*Question 14* focused on a specific communicative tool that would enable increased and repetitive use of the recycling application. The author believes that strong graphical and visual/sound reminders and the like should be used since the application is a commercial one and is purely based on the good intentions of both its creator and its users. In reality, a recycling application is something using during a user's spare time, and her job is not on the line, nor is it mandatory to use it as in other forms of digital transactions. For example, in Greece, e-payment is currently mandatory if a taxpayer wishes to pay fewer taxes. Besides the recycling application and the environmental and personal small benefits (i.e., vouchers), some form of reminder must exist to boost its use. The options offered were not exclusive, meaning that the sample could tick as many as it liked providing it met the criteria of whether or not a specific means of communication from the proposed ones would cause her to keep using a recycling application.

The following options were presented to the participants: Reminder, Vouchers, Reward Programme, WeChat, Virtual Prizes, Social Media Exposure (i.e., Facebook notification that a certain recycling goal was achieved). The Reminder option received 200 ticks, Vouchers 190, the Reward Programme 200, WeChat 40, Virtual Prizes 260,

and Social Media Exposure 100. Virtual Prizes received 260 ticks out of a maximum possible of 270, making it a clear winner. Subsequently, the Reminder and the Reward Programme options capped the second place as the favourite means of communication, which will cause a user to keep using a recycling application for a long time. Vouchers came third at 190 answered items.

The author wishes to combine the most favourite option of the Virtual Prize alongside the Reminder and the Reward Programme. All of those three most favourite options can be integrated within the application, so the Reward Programme and Virtual Prizes can be awarded to the best performers on recycling. Moreover, Reminders on how well a user did in the past or her possible maximum score of the month can be sent via notifications on her smartphone to ensure a means of communication that shall cause a user to keep using the recycling application in the long run. Ideally, Virtual Prizes could be extravagant and nicely designed and displayed on modern smartphones to encourage exposure to the user and her friends and acquaintances, either live or through cropped and copy-pasted images on various social media platforms.

WeChat is not deemed an appropriate tool for communication as, according to the answers, it did not gather a lot of popularity. Coffee Island had better invest in the three most popular forms of communication being: Virtual Prizes, Reminders, and a Reward Programme. Mutter (2013, p. 20) cited that 'retailers ranging from Safeway to Home Depot have developed smartphone apps and loyalty programmes that meticulously track consumers in order to target specific offers to them'. By explicitly targeting offers to consumers, Coffee Island can specialise in a key demographic of environmentalists who wish to protect the planet and its natural resources. Irina et al. (2016, p. 20) also discussed the benefits of loyalty programmes on smartphones. They stated that a loyalty-based mobile application 'enables remote employees to use mobile devices, such as Smartphones and tablets to access, updates and interacts with the data of customers at any time and wherever they are'. So, in boosting the recycling efforts, Coffee Island executives and managers can easily track down the application users electronically. They can promote new recycling efforts and goals, share the vision of the firm vis-à-vis reducing pollution, answer users' questions, help with troubleshooting issues (i.e., forgotten passwords), and so on. Additionally, Irina et al. (2016, p. 20) mentioned that loyalty-based mobile applications have positive marketing features like 'self-rewards point status, media advertising and promotion,

confirmation of payment via SMS, and mobile coupon’. All of the above-mentioned tools can be integrated into the Virtual Prize scheme that the author wishes to boost the productivity and effectiveness of the proposed smartphone recycling application.

The following Figure 18 illustrates the responses of the sample which replied to the e-questionnaire (270 people out of a potential 300 sent e-questionnaires) for the Study 1 e-questionnaire *Question 14*: ‘Which of the following means of communication will cause you to keep using a recycling application for the long term?’.

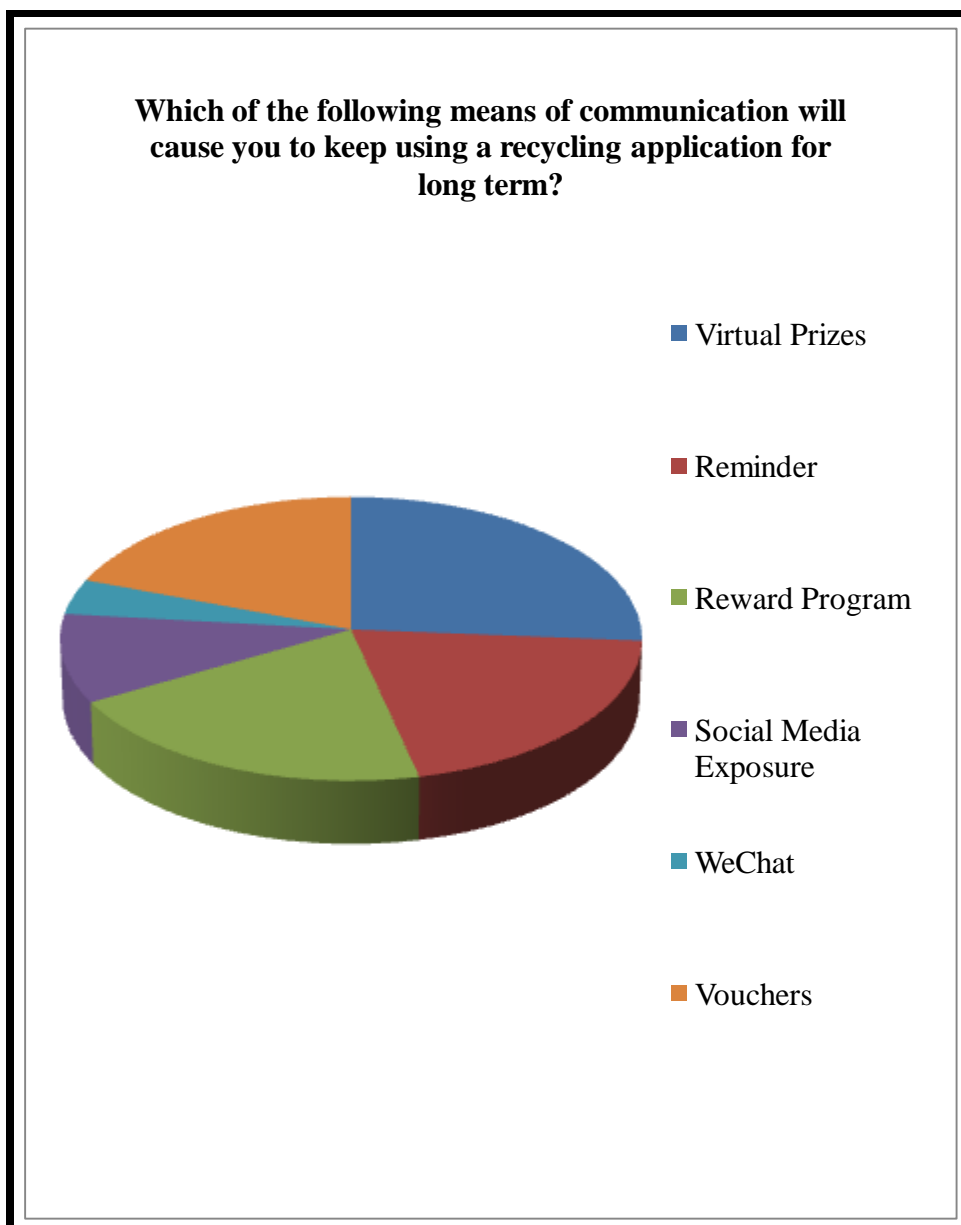


Figure 18. Pie chart presenting the answers to question 14

*Question 15* discussed the role of celebrity endorsement on what it can or cannot achieve about Coffee Island's recycling attempt. 'Celebrity endorsements refer to a form of advertising strategy in which a famous or well-known person uses her or his social status to promote a good, service, or idea. Celebrity status can arise from a person's talent and skill in a particular area such as music, acting, or sports' (Winterich et al., 2018, p. 71). Social status can come via athletic success since it involves much live coverage of the action. Specific target markets like teenagers are particularly attracted to specific sports. Moreover, talent and skill make the person even more attractive to the public, increasing the latter's chances of being taken seriously and listening to a message that they may convey (Winterich et al., 2018).

*Question 15* engaged in exploring the impact of getting the application and QR scanning options endorsed by a world-renowned athlete coming from the NBA. In Greece, basketball watching and playing is the second most popular sport. Also, many Greek fans frequently pay for cable TV to watch live NBA matches. NBA's popularity, could benefit the popularity of a recycling programme. In Coffee Island's case, it would be ideal for getting it promoted by a famous NBA player. *Question 15* revealed just that, and in actuality, confirmed a hypothesis of the author that such an endorsement will act positively in the overall eco-friendly recycling programme aided by modern-day technology.

*Question 15* read as follows: 'The recycling programme may be endorsed by a world-renowned athlete coming from the NBA (USA professional basketball). Will such an endorsement convince you to use a recycling application? (Mark from 1 the least possible to 5 being the maximum possible). Wang and Scheinbaum (2018, p. 17) mentioned that 'the source-credibility model suggests that the efficacy of the message communicated by an endorser depends on consumers' perception of the brand endorser's expertise, trustworthiness, and attractiveness'. The author shall search for an NBA player keen on recycling and/or natural environment preservation. Such a player is not a recycling specialist, but good intentions matter. Active involvement of a celebrity player in environment protection and recycling shall add 'source-credibility' (Wang & Scheinbaum, 2018) to the firm and genuine and honest motivation to users.

About *Question 15* (Study 1), the results are stunningly in favour of getting an NBA player endorsement of the recycling programme. More specifically, 150 answers

ticked on 5 of the Likert scale. So, 55.5% of the replies strongly favoured such a move and believed it to be decisive in motivating users to start using the application. Furthermore, another 100 answers preferred 4 on the Lickert Scale, indicating that 37% favoured the option, which is more than a third of all answers.

Additionally, if the percentages of options 5 and 4 are aggregated total popularity of having an elite basketball athlete promote the application and QR scanning amounts to 92.5%, which is a strong indicator that such a move can significantly benefit the overall programme. It can be a worthwhile investment. Ideally, such an endorsement should not entail any compensation for the player as it is done for a good cause. Hence, no remuneration package should be offered to the player besides reasonable travel and related expenses. For the sake of accuracy, the other answers for options 3, 2, and 1 were as follows (subsequently): 15, 5, and 0. The percentages of the above-mentioned options were 5.5%, 1.7%, and 0%. There is an indication of a positive correlation between hiring an NBA player and increasing the attractiveness and demand of the e-green project. According to Erdogan (1999) and Kaikati (1987, cited in Winterich et al., 2018, p. 71), ‘celebrity endorsers offer various benefits for brands by drawing attention to the marketing communication, raising brand awareness, defining the brand image, and increasing sales’. Celebrities can easily act as role models and opinion leaders since their exposure to TV, social media, and radio establish them as very important people amongst various members of society. Figure 19 illustrates a pie chart representing the answers to *Question 15*: The recycling programme may be endorsed by a world-renowned athlete from the NBA (USA professional basketball). Will such an endorsement convince you to use a recycling application? (Mark from 1 the least possible to 5 being the maximum possible).

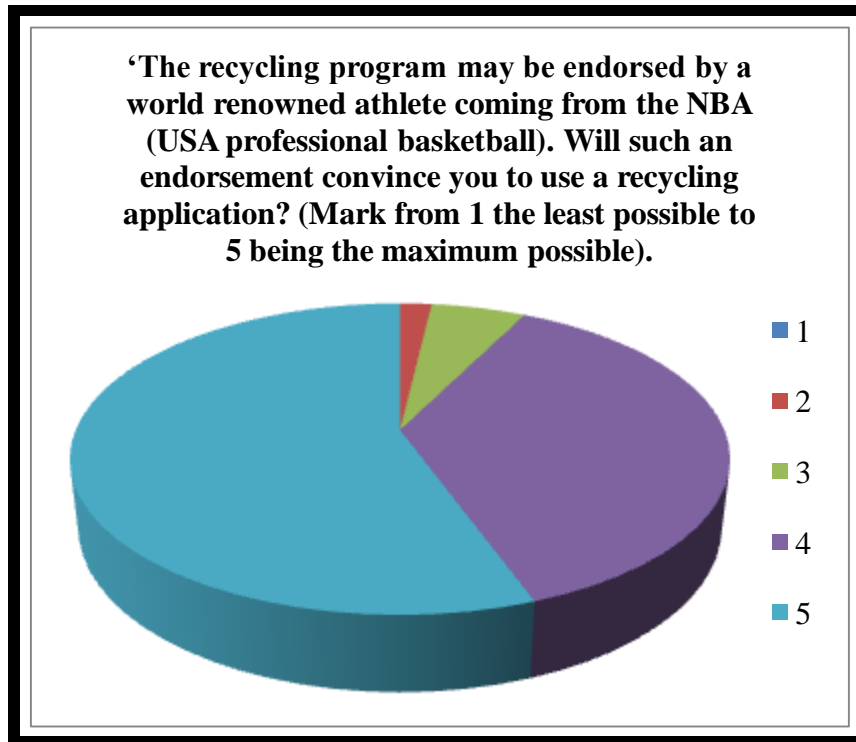


Figure 19. Pie chart presenting the answers to question 15.

The final Question of Study 1 (e-questionnaires) focused on the actual mechanics of the QR scanning. QR scanning is relatively simple and quick, yet a customer has to identify a place to recycle the item she wishes, and before doing so, it needs to be scanned. Obviously, the more places and the easier the process, the more scans Coffee Island will get per recycled materials. QR scanning does not merely count how many items or tons of materials were recycled. Still, it gives numerical feedback on where it happened, frequent users. It can add useful geographical information on recycling mechanics, i.e., in Northern Athens, more plastic bottles were recycled than in Southern Athens. So, Coffee Island can allocate more designated recycling bins according to the popularity of each material.

Furthermore, should a user not have downloaded the application or stopped working for any reason, she will not lose on green coins as Coffee Island’s data center can gather the recycled items and award the appropriate amount of remuneration in terms of vouchers free coffee cups, etc.

Finally, QR scanning can be used as a learned behaviour, since scanning can quickly add on to other family members, friends, and acquaintances to boost the effectiveness and acceptance of the overall recycling intervention.

*Question 16* read as follows: ‘How likely are you to QR scan items purchased from Coffee Island before disposing of them in designated areas of recycling (i.e., recycling parks, recycling bins, Coffee Island’s green hot spots designated for recycling)? (Tick from 1 to least likely to 5 most likely). The answers were in favour of doing so. It was a relief since, by QR scanning, accountability of recycling can be added to the overall mega project. Additionally, QR scanning can easily increase feedback in real-time about planet protection and quantitative goals, i.e., plastic in kilos recycled per day. 270 responses were offered, and 90 were on the 5<sup>th</sup> part of the Likert scale, which stands at 33.3%. One-third of responses were on the maximum possible part of the Likert scale. Hence a favourable trend towards scanning an item before recycling is a strong likelihood for most programme participants. 100 people mentioned that they went with the 4<sup>th</sup> strongest option. Yet again, 37% is a very strong indicator that the sample is willing and able to scan an item to be recycled seconds before doing so. 60.3% of the replies were on the two strongest answers regarding the possibility of QR scanning a Coffee Island good before discarding it at a designated Coffee Island recycling site/spot. This percentage represents a majority of the total ticks. But, it is not conclusive evidence that the remaining 39.7% shall opt for doing so. In actuality, it could undermine the overall QR scanning project unless solutions are given to reverse the situation.

Unfortunately, only 10 people opted for choice 3, while 20 and 50 subsequently became the second and first option. So, the percentages were 3.7% for the third choice, 7.4% for the second one, and 18.5% for the first one. The combined volume of the third, second, and first options reveals that some samples do not wish a soon-to-be recycled item (29.6% cumulative percent). The author came to grips with the notion of adding some additional information to participants of the programme and ideally installing free memos and information running on the application like *Scan it before throwing it; it only takes a second!* Most probably, it may be considered a hustle for some people. Yet, the author wishes to promote and motivate participants to QR scan their recyclables to gain insight into what is being recycled for future recycling projects, better allocate current resources, etc. Green et al. (2017, p. 658) exclaimed the benefits of QR scanning over traditional paperwork. The benefits exist in the realm of saving time and money for those employees engaging in QR scanning. Green et al. (2017, p. 658) stated that ‘the QR code eliminates the need to carry a physical



notebook and reduces the possibility of transcription error' and doing the whole exchange of information in real-time. Using and adopting the QR scanning data flow chart presented by Green et al. (2017), the author wishes to break down the process into three steps. Firstly, the customer/consumer of a Coffee Island product using a smart device scans the QR code in each Coffee Island product after consuming the beverage/confectionery. Scanning the QR code links to the online webform for that product (Step 2). The algorithm of the QR scanning automatically fills the form. The third step is to gather the information for that specific user, her reward points, and ideally store the data on an email server and a web form server for future reference, illustration of results to the media/public, as well as the user herself on her smartphone.

Li and Messer (2019, p. 313) conducted an interesting experiment. They offered participants the chance either to enter a direct computer link to some nutritional information or a QR code. The direct computer link came first by a significant difference in accessing rates of the specific information. Yet, 'interestingly, when we provided respondents with a smartphone that had scanning software preinstalled, the information access rate not only bounced back but more than doubled compared to the computer link' (Li and Messer, 2019, p. 313). An idea that came to the author's perception is to offer through the voucher and reward programme (aka green coins) smartphones that have pre-fitted the QR scanning software. Pre installing the QR scanning software can make it easier for users to do the scanning. Combining the above-mentioned ad/motto, Scan it before throwing it, only takes a second! and gives the actual smartphone with a fitted QR scanning software to improve usage rates. Since even the cheapest smartphone in retail costs around 50 Euros currently in Greece, such phones will be given to loyal Coffee Island customers who have gathered a substantial enough number of reward points to compensate for the high cost of the cellular phone.

## **5.2 Reflection and insights from research on the proposed intervention of digital green marketing for Coffee Island**

Coffee Island has a lot to gain by learning from experience. Initially, the problem was that the company is a main polluter of the Greek natural environment, especially landfill pollution, and to a minor extent, air. The author of the present interventional

thesis embarked on a mega project of firstly pointing out which the key stakeholders were. After tracking down the Government, environmental non-governmental agencies, Coffee Island, as well as its customers, the trip began towards finding a meaningful and efficient solution for the specific problem of creating negative externalities of production (i.e., factories) and consumption (i.e., selling/utilising single-use plastic cutlery in all retail shops).

A first insight was realising who creates a problem to an overall business *ecosystem* and why. In the case of Coffee Island, the insight was that the firm has a contributory role in creating excessive contamination of the air and soil contamination. So, self-realisation came through the stakeholder analysis and the role Coffee Island plays in its business and natural environment. Study 2 deeply focused on identifying and reassuring the author that the firm was to blame for part of the contamination generated through four qualitative interviews. These notes were made constructively by all four professionals.

A second insight was the vast and widespread exercise of modern-day technology. More specifically, the firm already has a very detailed and experienced Information Technology department ready to create a smartphone application and QR scanning codes for all its retail shops. Through Study 1, 260 respondents mentioned that they have regular access to the Internet (96.29% of the responses), while 250 replies (92.59% of the answered questionnaires) were positive on whether the participant owned a 3G (or newer version) smartphone. Both those percentages are outstanding as they portray a positive picture of using such technology in modern-day Greece. Even with the best intentions, a customer wishing to recycle might have been unable to do so if she lacked the proper tools. In the specific intervention, the smartphone and access to the Internet are the two most important ones, besides the motivational part of repetitively using them. But with the smartphone and the Wifi or Internet access (cabled Internet), even downloading the application would have been impossible.

Another helpful insight was the mechanics and ways of persuading Coffee Islands patrons of downloading and using the application and QR scanning. Training of customers via social media and Youtube (Study 1 and Study 2) proved critical in this direction. Furthermore, making it easy to download the application is important since time is a crucial factor. Famous athletes can promote such a project. Ideally, through

Youtube and social media, recycling efforts by ordinary customers can be videotaped and then broadcast to gain exposure and popularity.

Of course, the typical tools of marketing promotions apply and in this green marketing effort. Gifts, vouchers, *green coins*, cross-referrals, and reminders/notifications can boost participation in the programme. Tagging friends on social media and asking them to participate in online contests can easily increase the exposure of the application and QR scanning. The application's positive effect can be shown via an application cue. For instance, a bar chart can depict how many plastic bottles were recycled per day and set a daily goal. Once this goal is achieved, a digital prize and/or voucher for coffee beverages and confectioneries shall be awarded as positive reinforcement. The application will contain maps of retail shops, ways to go there, and identifiers on where exactly there is a recycling spot, and QR scanning code facilities. They will add even more product cues. Clear and easy steps shall further enhance willingness to engage in scanning and recycling items and simultaneously recording them on a customer's smartphone.

### **5.3 Concluding remarks**

Chapter 5 provided useful advice on the mechanics of smartphone application. It is paramount to create an application that will enable its users to engage with it quickly and efficiently and see their efforts rewarded. Such a reward can be green coins that will compensate users for their time, efforts, and willingness to make the planet a cleaner place than it was before.

Moreover, Study 1 revealed the virtue of referrals and references from existing customers. Present-day customers are a key advertising arsenal for Coffee Island, as in any other firm. They can cross-promote the recycling effort and boost its effectiveness by asking their friends, relatives, and acquaintances to participate in recycling contests and endeavors. Tagging them on social media will immediately make them aware of the application. Typically, volume converts into the quality, and out of the many tags and shares of the application, hopefully, some of them shall download and start using the application. Anyone using the application will be offered free vouchers, provided they invite a friend to a shop, help the firm achieve higher retail shop traffic, acquire more visibility for its products, and promote the eco-friendly mega project intervention inspired by Critical Action Learning.

Safety in numbers has been traditionally applied in sociology, as well as modern businesses. Economies of scale imply a cost reduction merely by utilising more resources for the same fixed payment. As Study 1 brought to the surface, 190 out of the 860 replies were made on ‘participating in social media support groups that actively promote recycling via the specific application’ at a percentage rate of 22% as an important factor in continuous application usage. Social media support groups are self-help groups where team members share their experiences, difficulties, and troubleshooting and do it yourself to achieve specific goals. Moreover, social media support groups are typically managed by administrators and group advisors who promote pictures of in the specific instance recycling and offer written comments on such actions.

**CHAPTER 6: A practical guide for applying the proposed recycling smartphone application and QR scanning**

**6.0 Proposed framework on the overall critical action intervention**

Initially, the author of the present thesis was focused on creating a mechanism through which he could actively reduce the carbon footprint generated by Coffee Island. Having learned from experience that such an endeavor might take time and money, it was decided that it should be done most productively and efficiently. Both Study 1 and Study 2 offered lots of invaluable information on the topic. As a result, two main pillars were identified as key cornerstones in the overall critical action learning intervention. Firstly, the overall project must meet the SMART goal criteria, i.e., it has to be specific, measurable, achievable, relevant, and time-bound.

In Coffee Island’s case, the project is specific, as it focuses on reducing the firm’s carbon footprint via an active and rewarding recycling smartphone application and QR scanning. Moreover, it is deemed achievable since the company can build the smartphone algorithm and QR scans with QR scanning trackers. It was discovered through Study 1 and Study 2 that such an enterprise is worth doing since customers are willing and able to participate in the overall green effort. The following table presents how the author framed action research in his thesis.

<b>Mapping the Terrain</b>	The main problem is that Coffee Island is that it is generating a lot of pollution. Subsequently, the Greek public, authorities, and existing customers have created a negative perception.
<b>Testing Plausibility</b>	The main problem is whether managers and, most importantly, all customers/consumers will use the recycling application and QR scanning. Plausibility is checked via Study 1 and Study 2; in both cases, participants were asked about their motivation to engage in the project and actively support it.

<b>Evaluating Action</b>	An improvement can be immediately seen. More specifically, the number of downloads, usage time, recycled items, and how many QR scans have taken place can be easily tracked online and at certain time intervals.
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Table 15. Framing action research for the current recycling intervention for Coffee Island.

The second pillar of the eco-friendly digital approach that Coffee Island applies is avoiding another greenwashing effort. Many firms wish not to be identified as bad apples of the economy, as President Bush called them unscrupulous organisations. They differentiate themselves from others with false or shallow eco-friendly efforts and continue polluting the environment. These companies merely use a term like recycling as an excuse for their heavy polluting behaviour. Also, false advertising about recycling is another issue, coined with lousy labeling.

In many cases, organisations promote eco-friendly products, but after reading the label, a consumer soon discovers that the packaging is still plastic-made. In other instances, when a product is promoted as sustainable, i.e., in tuna fishing, there is a problem of depleting the population of a species. Many cans are touted as sustainable and containing sustainably fished tuna. In reality, they have been proven the opposite.

Lyon and Maxwell (2011, cited in Berrone et al., 2017, p. 365), mentioned that ‘assessing a firm’s environmental footprint is more challenging for the general public though because most people lack direct knowledge of the real environmental quality of the firm’s production processes or the extent to which it is committed to improving its environmental performance by incorporating clean technologies or implementing effective environmental management practices’. Coffee Island has taken the following steps vis-à-vis its smartphone application and QR scanning to avoid this issue. A clear visual and verbal representation of what exactly has been done to reduce pollution will be stated in its mission statement.

Smartphone application users will be immediately notified of how much they could recycle and preserve the planet (i.e., a fancy icon will appear with the H2O symbol and how many liters a recycled plastic cup saved the planet). Moreover, a famous

NBA player will add credibility with his endorsement of the proposed intervention. The most important tool is media and online coverage of the project. Business spies, insiders, and whistleblowers will scrutinize the firm's recycling attempts and reveal any negative actions. Hence the author believes that such actions will make Coffee Island more careful in its overall recycling business processes.

Finally, Study 1 and 2 involved all participating members via the stakeholder analysis. The opinion of the participating members was heard, taken into consideration. As Figure 16 depicts, they were incorporated into Coffee Island's critical path of decision-making in terms of how to pollute less and do more as an active corporate citizen.

Coffee Island wishes to differ. The simplest way to do so is through accountability of its actions and behaving like a corporate citizen. The stakeholder analysis revealed that consumer groups need to see tangible and measurable actions to preserve the environment. Through icons stating exactly how much they protected the planet, offering feedback to consumers seems to work based on Study 1 (*Questions 8 and Questions 10*). Seeing the results gained over a specific period, and better yet, Coffee Island setting a minimum goal of reaching recycled materials like plastic, glass, and metal can motivate consumers and make the overall recycling effort meaningful for its users. Unlearning can be more complicated than learning new things. Coffee Island associates need to become environmentally focused than merely acting as bottom liners. Considering business insiders, whistleblowers, NGOs, and environmentalists, the firm has more to gain by actively promoting recycling through positive word-of-mouth and eco-friendly marketing positioning in the consumer's perceptual map of purchasing coffee and beverages.

The author concluded how decisions should be made within the realm of recycling items and keeping its consumers within the overall intervention loop. It is called the active motivation of consumers and is an ongoing process of offering incentives, feedback, and training on this specific mega-project. The following Table 16 illustrates the critical action learning critical path. Decisions on becoming an eco-friendly part of the business environment shall be made from now on for Coffee Island.

<b>Step 1:</b> Conduct a well-rounded stakeholder analysis	<b>Goal 1:</b> Identify challenges for Coffee Island (i.e., the company's carbon footprint is unacceptably high).
<b>Step 2:</b> Question and Challenge the company's methods and tactics	<b>Goal 2:</b> Unlearning old and not productive processes to alleviate problematic areas of practice
<b>Step 3:</b> Conduct an inquiry into actual Coffee Island projects	<b>Goal 3:</b> Observe and gauge what specifically is done to reduce problematic areas
<b>Step 4:</b> Move on to a critical action approach by engaging stakeholders to a meaningful and productive degree (especially in new product development)	<b>Goal 4:</b> Utilize critical action learning to the fullest by letting consumers, focus groups, outsiders intervene in a specific managerial problem and/or project
<b>Step 5:</b> Conduct a meta-analysis to evaluate how much and to what extent the problem identified in Step 1 was solved and what could be done. Ideally, repeat the whole process if results are not satisfactory	<b>Goal 5:</b> Conduct critical action learning evaluation and see which department, process, and stakeholder was efficient and diligent in achieving the projected goals and milestones. Improve continuously, and learn from mistakes.

Table 16. Critical Action Learning critical path for Coffee Island's managerial decisions.

Initially, the researcher wanted to find out how many and to what degree Coffee Island customers were willing and able to participate in this intervention. Thus, motivational factors were also a part of the research. Subsequently, further issues such as truly committing to recycling and being diligent in the process arose as the research dug deeper using its critical action learning skills.

Reynolds and Vince (2004, p. 452) explicitly mentioned that 'learning groups offer an opportunity to apply learning from their processes to the wider context they wish to understand and change'. In Coffee Island's case, Study 1 and Study 2 utilised insiders' and outsider's opinions. Since internal and external customers' opinions were asked



and scrutinised by the author, meaningful remarks and relative comments on recycling were considered.

To avoid being associated with greenwashing practices, the firm has decided to offer specific and measurable goals in terms of recycled matter. Moreover, as a reward, vouchers and *green coins* (redeemable in Coffee Island goods and coffee mugs, etc.) shall be offered as a motivational factor. Also, another key motivator will be to ask an NBA star to endorse the proposed mega project to bring exposure and popularity in the application and QR scanning.

Transparency is another basic concern of the author. By video taping the recycling project and subsequently publicizing it on social media like Facebook.com and the like, Coffee Island's initiatives will be shown to the whole online community.

Hopefully, should the project go viral, it will generate positive publicity. Ideally, such exposure will protect the company from poor recycling practices. Constant online and media attention and the public eye's observation will compel the firm to act more ethically. The author takes it because the firm pollutes the environment, as does any firm producing goods and services to a smaller or larger degree. Unlearning such practices and starting to reduce pollution is a challenge.

The Hawthorne effect is a quite popular study, stating that humans alter their behaviour when being watched and graded against certain criteria. Lee (2016, p. 26) wrote that according to the main premises of the Hawthorne effect, 'group influences significantly influence individual behaviour, group standards establish individual worker output, and money is less of a factor in determining output than were group standards'. Recycling icons such as recycling badges, *green coins*, sharing recycled collected items and points, etc., can make the process entertaining. They make it an overall game repetition, and loyalty to the QR scanning and smartphone application can succeed. The circular economy is a hotly debated topic, and minimalistic approaches and fans are overwhelming Youtube.com and Facebook.com.

Moreover, users of Coffee Island items can learn from each other, reducing costs of educating the public. Knowledge management and online support groups can be created to enhance the use and attraction rate of new smartphone application users and QR scanned items. Finally, the author wishes to exclaim the sense of group belonging and synergies that can be easily created if users massively engage in recycling. It can

become viral online and alter education on recycling for future generations. Figure 20 illustrates how a strategic decision is transformed from something generic into something specific, following inductive reasoning for Coffee Island's learned and to be learned behavioural patterns.



Figure 20. From strategy to operations. Coffee Island's attempt to reduce pollution from top to bottom of its decision process.

### **6.1 Application of the framework for Coffee Island's thesis inquiry**

The author wishes to offer a visual and specific tool for coping with creating excessive pollution to the environment. Both its external and internal customers must realise the extent of the problem, and most importantly, what should be done to reverse the situation. Figure 21 presents a visual aid through which both the public and firm's managers will come to grips with the notion of the exact process of reducing a problem.

Coffee Island actively wishes not to be coined another firm engaged in greenwashing, misleading or false advertising, and lousy labeling of its products. It attempts to resolve the issue by engaging its customer base in the application and QR scanning.

Through the two studies, the power of online media is revealed. They offer promotion and free public relations tools (especially Facebook.com, Twitter.com, and Youtube.com). Moreover, offering real-time feedback on exactly how much the environment was protecting and emphasizing the benefits of the circular economy can speak volumes of the company's honest and tedious efforts to reverse the negative climate over the years in terms of pollution and carbon dioxide emissions. Lee (2016) group standards as important based on Hawthorne studies. The author agrees with this statement; hence, sharing, posting, and tagging specific remarkable recycling efforts will be a priority for Coffee Island.

Positive reinforcements like vouchers and *green coins* will help based on Study 1 and Study 2. Posting, subscribing to Coffee Island's Youtube.com channel, sharing recycling videos and tutorials can act as a control mechanism for the organisation's true intentions. For instance, through actually doing the scanning of plastic, the public can observe the magnitude and actual actions of doing so. Moreover, when all the plastic is collected, an accurate visual representation of the fruits of recycling can be seen and immediately evaluated by thousands of eyes. More exposure typically leads to more comments, control, and overall evaluation. So, accountability can be readily available by a harsh yet honest public eye.

## **6.2 How disclosing data about Coffee Island's actions lead to accountability?**

Through the proposed intervention, Coffee Island shall produce many numerical and qualitative figures about its pollution levels, the degree it wishes to reduce them, and specific recycling quotas. The idea is that through an increased representational function, more and more information will be revealed to the public. Moreover, when a goal is measurable, it is easy to observe whether it has been met or not within a specific period.

Chwastiak and Young (2003, p. 535) wrote that 'because reality is not co-extensive with the categories of discourse provided in annual reports, we can prevent the dominant discourse from being further embedded within our consciousness by breaking the silence and adding alternative voices'. For instance, Coffee Island is legally obliged to create a balance sheet depicting profits and costs for a fiscal year. But breaking the silences of how those profits came can arise from alternative voices to the typical accounting information.

Presenting how exactly profits occurred, i.e., via reduced plastic use, is interesting for both the investors, the consumers who will benefit from reduced carbon dioxide levels, and a more responsible purchasing behaviour.

Ezzamel et al. (2004, p. 790) wrote that an airliner to reduce waste did not merely create a balance sheet but stepped it up further by disclosing to the public as much information it could. Employees, managers, consumers, etc., realised the volume of pollution, and specific waste management proposals were enacted. 'The various changes introduced to reduce cost and waste were accompanied by a shift from the discredited functional organisation to a matrix structure presented via text, diagrams and pictures' (Ezzamel et al., 2004, p. 790). The same hopefully will happen for Coffee Island. The more a consumer knows about waste management, and she can observe mechanics on reducing clutter, waste, carbon dioxide emissions, this will hold her personally responsible. Managers and even low-ranking employees will become aware that throwing away a plastic cup instead of recycling has consequences for both the firm and the environment. 'The reporting relationships detailed several dimensions; in particular, relevant strategies, objectives, funding, product requirements, budgets and resources, product building standards and conflict resolution' (Ezzamel et al., 2004, p. 790). So, through precisely the exact mechanism Coffee Island will become accountable for its environmental actions.

### **6.3 The case of Coffee Island using Critical Action Learning**

The literature review discovered many journals written about ecology, protection of the environment, and green marketing. Also, there is an array of papers on using modern-day technology to code products. Smartphone applications and QR scanning were proven to be highly used and widely accepted by people from all walks of life. Another basic issue was Study 2, with four experts, each one of them being an expert in his field. A robust correlation was found between correctly using social media and gaining exposure and popularity in an online endeavor. As both Study 1 and Study 2 revealed, many benefits can be gained by combining the power of social media (i.e., Facebook.com, Twitter.com) or video broadcasting channels, namely Youtube.com, along with a famous athlete or amateur video. The combination of a video and/or picture of a person (famous or not) recycling can be shared, posted and reposted, tagged, commented, liked amongst thousands of Coffee Island customers and the

general public. The general public is eager to scrutinise large-scale firms given their attempts to carry out greenwashing, which practically means that their effect on recycling is minimal and only driven by profit. Furthermore, greenwashing is coined with concealing a negative behaviour like polluting the environment, under the garb of a novel cause like recycling.

#### **6.4 Coffee Island's history and context**

Coffee Island has long been accused of creating pollution and, generally speaking, negative externalities of consumption and production. Since it has traditionally been using plastic cups, straws, containers, and Styrofoam, the public eye was diligent in pointing out the enormous environmental impact it caused. Furthermore, using a vast private fleet of cars contributes to even more carbon dioxide emissions and an enormous carbon footprint on the planet. When all of these issues came to the author's attention, immediate action was called for. More specifically, the present intervention actively strives to reverse the negative situation and go to any lengths to mitigate the pollution which was/is/will be produced by the organisation.

Ketter et al. (2016) proposed using the method of 'competitive benchmarking', which falls more or less within the realm of what the author applied in the present thesis. More specifically, the above-mentioned method 'emphasizes the importance of rich problem representations jointly developed among stakeholders and researchers, and it leads to actionable research results complete with comprehensive supporting data' (p. 1058). Study 1 and Study 2 fulfilled the discussion and representation of the stakeholders (sample of 270 completed e-questionnaires) and the author as a scholar-practitioner, alongside his four experts (Study 2 in-depth, open-ended interviews). About the actionable research results, a meaningful and specific intervention of utilizing a smartphone application and QR scanning is already proposed to the board of directors and well underway to be materialised within 2022. Ketter et al. (2016, p. 1058) elaborated even further on competitive benchmarking and exclaimed its importance since it 'supports analytical and behavioural Information Systems research (insights) and design science research (solutions)'. Obviously, the author used Information Systems to analyse and present in pie forms his Study 1 data. A subsequent analysis approved of the preconceived solutions of the recycling

smartphone application and QR scanning recyclable materials in designated green areas.

Additionally, as the literature review and Studies 1 and 2 brought to the surface, creating a recycling campaign will not be enough. Substantial measures must be taken and implemented by Coffee Island to convince the public of its honest intentions and abhorrence to greenwashing. Therefore, the author decided to ask the company's customers to videotape their recycling activities and send the video to the company after the project is complete.

Visually illustrating/showing the results in a digital form on a user's smartphone (i.e., saved water through recycling) and real-life (i.e., a recycling truck conducting sewage treatment and anti-pollution practices while disposing of recyclable materials), the firm will present tangible proof of its efforts. Study 1 and Study 2 both exclaimed on calling a famous NBA player to participate in the campaign by endorsing it. Opinion leaders can offer validity to the project, and through their popularity and experience, they provide prestige and can easily raise awareness. An NBA player is an expert in recycling. Nonetheless, a well-known person can offer validity just by being famous. Surely his supporters will notify him should the company deviate from the project, and this can act as a measure to safeguard attention to the cause of recycling. Over the years, there have been instances of social media influencers who withdraw their endorsement of a specific good or service because of negative media attention.

Active engagement of the public, with a right to control and monitor the process even live while recycling is taking place, as well as exposure of the project to the media via an NBA's athlete endorsement can act as mechanisms that protect the true intentions of Coffee Island to protect the environment. Accountability, representation, and control shall be parts of Coffee Island's mega critical action intervention motto. Accountability comes via making its internal and external customers personally responsible for any pollution they generate. Representation comes in the form of the endorsement and asks a customer representative and/or an NGO to speak on behalf of a given stakeholder's group and scrutinise Coffee Island's actions.

Control is somehow mingled with the previous two functions, which come hand in hand. Externally controlling Coffee Island's recycling efforts is paramount in its project's success. Asking internal customers like managers can be highly biased and

prejudiced. For instance, it is not that easy for the Marketing Manager to openly admit that the project was not successful since his job might be put in line immediately. After all, the cost of creating, promoting, and distributing both the smartphone application and the QR scanning is quite high, so external control must all take place from NGOs, Coffee Island customers, and customer representatives to ensure that adequate recycling efforts and measures are taken.

### **6.5 Opportunities for Coffee Island to improve on recycling**

A mega chance for Coffee Island to improve its recycling attempts has been identified using modern technology and its widespread acceptance in the Attiki customer base. More specifically, Study 1 presented that paying customers are willing and able to engage in recycling via the proposed recycling application and QR scanning. Alternative ways of doing recycling came to the author's mind. For instance, the author could hire a recycling company to do the project. The cost would be quite high, and outsourcing the project might lead to loss of control and/or a discrepancy in the company's culture to promote to its current customers.

On the other hand, engaging the customers costs nothing. It can boost retail shop traffic through positive public relations and media attention, *green coins*, which can be translated into vouchers for free coffee, confectioneries, etc. Additionally, Study 1 made it apparent that a large part of the sample does accept that the firm pollutes the environment. Despite that, through a positive motivator, such as vouchers, free coffee mugs, etc., the firm can encourage smartphone applications for recycling.

Virtual prizes and social media exposure like producing a Facebook notification that a specific recycling goal has been achieved can also act positively in the company's attempt to motivate smartphone application users and QR scanning. Exploiting social and mass media does not cost much, and their use creates an honest and true image before the public. This feature is contrary to other means of communication, like a paid advertisement. Advertisements are less likely to imprint the desired image of the firm due to their very nature. On Facebook, for instance, comments by subscribers and group members can produce feedback on the proposed Critical Action Learning intervention. On the other hand, paid advertisement expresses the firm's interests only, and there is no scope for direct talking back. Also, loyal customers are more

motivated to recycle based on Study 1 and Study 2 when their fruits of labour are well-observed, recorded, and rewarded.

## **6.6 Innovation in recycling for Coffee Island**

Traditionally, recycling was conducted by Coffee Island on a per need basis, and when the local Government dictated doing so. However, because of negative media attention and poor government environmental control scores, the author embarked on the present intervention. Two major new strategies are proposed considering Study 1, Study 2, the literature review, and pure managerial intuition. The first new strategy is to listen to our external customers actively during the annual stakeholder meeting. An external audit (Big Picture Analysis) will listen to stakeholders' (customers, suppliers, NGO representatives, etc.) complaints and constructive suggestions, especially recycling.

The second new strategy, which shall start from 2022, will be to go digital in terms of Coffee Island's recycling attempts and, more specifically, develop, distribute, and promote the currently mentioned smartphone application and QR scanning. The company will also construct QR trackers to facilitate QR scanning altogether. The first strategy is tied with the second. Coffee Island made a specific, meaningful effort in reversing its negative impact on the environment. Various stakeholders, like customers and environmentalists, government officials, and the like, can offer useful feedback and remarks on the project's success. Since Critical Action Learning entails meta-analysis and on-the-go alterations of the initial plan and objectives, such useful annual meetings can offer much food for thought to the author. Roloff (2008) and Rasche (2012, cited in Dentoni et al., 2018, p. 334), defined a similar form of governance which the author wishes to install via the annual stakeholder's meeting as MSP, which stands for Multi-Stakeholder Partnerships. MSPs are defined as 'a collaborative form of governance involving mainly business actors and civil society organisations that come together to find a common approach to a complex problem that affects them all' (Roloff, 2008; Rasche, 2012, cited in Dentoni et al., 2018, p. 334).

The author was pleased to learn that MSP, through creative conflict, when a problem like in the present thesis, recycling is discussed can lead to a solution. More specifically, 'value conflicts between stakeholders and struggles over the nature of the



problem can be brought to the table and discussed through deliberation and negotiation to find a temporarily acceptable synthesis’ (Dentoni, Bitzer and Schouten, 2018, p. 338). Obviously, Coffee Island is interested in finding a permanent solution. Yet, as wicked problems tend to evolve and sometimes be never-ending or constantly creating another new unknown hitherto issue, such an approach might be suitable for a turbulent business environment.

A three-step approach is proposed to harness uncertainty when dealing with a wicked problem, such as pollution. It starts with ‘deliberation’, leads to ‘decision-making’, and finishes off with ‘enforcement’ of a proposed policy and business strategy (Dentoni, Bitzer & Schouten, 2018, p. 334).

The following Table 17 is the methodological approach to be used from now on in terms of Coffee Island’s anti-pollution green environmental campaign.

<b><i>Step 1:</i></b> Deliberation	<ul style="list-style-type: none"> <li>-Discuss with Key Stakeholders</li> <li>-Why pollution is generated, and who is to blame?</li> <li>-What can be done?</li> <li>-Carry on brainstorming</li> </ul>
<b><i>Step 2:</i></b> Decision-Making	<ul style="list-style-type: none"> <li>-Conduct Meetings with Managers and the Board of Directors</li> <li>-Exercise power to decide on specific and meaningful steps to combat pollution created from Coffee Island</li> </ul>
<b><i>Step 3:</i></b> Enforcement	<ul style="list-style-type: none"> <li>-Collect sample on a specific intervention on recycling</li> <li>-Ask involving members to actively participate in what can be done to reverse the situation</li> <li>-Do in practice and not, in theory, the intervention, after having conducted a</li> </ul>

Table 17. Governance process in recycling campaigns for Coffee Island (Adapted from Dentoni, Bitzer & Schouten, 2018, p. 347).

The next paragraph combines the present paragraph with practical means of how Coffee Island can indeed proceed to the enforcement of its proposed intervention. For instance, as mentioned in Table 17, ‘ask[ing] involving members to actively participate on what can be done to reverse the situation’ is a starting point. Yet, more specific and measurable action must be taken to convince users to do so.

### **6.7 Correlation between transparency and engagement of stakeholders and tendency to recycle**

Both Study 1 and Study 2 illustrated that when users of the application and QR scanning see a meaningful end to their endeavours, they are willing and able to start using them consistently. Obviously, such a steady use will benefit both Coffee Island and the natural environment the author wishes to preserve. How transparency and engagement are gained? Coffee Island creates a smartphone application. The next second it posts on its YouTube.com channel a video of ordinary customers recycling and Twits it over the online media, waiting for hashtags from its subscribers, followers, and people who comment on its material. Right away, Coffee Island’s actions are apparent to everyone having access to the Internet, and even more, the results are such that make the whole process controllable in the sense that every little step of the process can be discussed and scrutinized. For example, suppose that a bottle is incorrectly disposed of. At the same time, a comment shall appear on YouTube.com, and even more, the very creator of the application can offer criticism on how the disposal of the item should be done.

One fundamental question of the author’s DBA Thesis Proposal was: What specific actions will be taken in collaboration with users/customers proposals to reduce pollution? The basic findings are interference with the customers via the online community and videos/postings/sharing of information and recycling activities via smartphone applications and QR scanning. For motivating the public, an NBA player will be approached to endorse the efforts. Besides, vouchers in the form of *green coins* will be offered to users for using and promoting the new technology

continuously. In addition, references, affiliate marketing, and similar marketing activities can prove invaluable for Coffee Island. Another thing is to provide actual footage of the whole recycling procedure and potentially invite customers to watch firsthand how recycling is done.

The first question of the author's DBA Thesis Proposal is: *How many customers will be willing and able to use the smartphone application and QR code scanning consistently for the purpose of reducing pollution generated by my firm?* The answer to this question is two-fold. Initially, Study 1 proved that many customers have regular access to the Internet and are owners of at least a 3G smartphone. Of course, this is merely the first step since nothing can guarantee long-term use of the recycling application and QR scanning. *Question 2* of Study 1 brought to the surface that seeing the results gained via a graph at the end of each period (like an accountability design graph) can be a strong motivator. Feedback and goal-setting are fundamental principles of scientific management.

### **6.8 Making the application and QR scanning a pre-commitment activity and passive transaction**

Coffee Island realized that engaging in recycling is no easy feat, and besides the high costs, it entails the public might associate it with greenwashing, false advertising, and lousy labeling. These three terms disclose a dishonest attempt by companies to disguise their polluting behaviour with fancy terms like an ecological product, chemical-free while concealing reality. In 2020 the public and government officials can be very harsh judges to any such attempts. Ogunyemi, Oguntoke, and Oyeneke (2018, p. 32) mentioned that 'it is, therefore, necessary to incorporate environmental audit as part of research tools to independently assess the various activities, processes, and environmental performance of industries to ensure that their practices are ecologically sustainable'. So, asking and actively engaging and announcing the results of an external environmental audit can pre-commit Coffee Island and convince external stakeholders of the company's intentions.

The author wishes to apply a new strategy to the current critical action intervention is to pro-commit both Coffee Island and its users to stick loyal to protecting the environment. A way to go for Coffee Island is to set a predetermined goal in recycling, i.e., reduce its carbon footprint by 300 million tons within the next decade

and post it on its business mission statement, as well as the corporate site. Thus, the media will be informed of the company's activities for this good cause. Moreover, media attention will also act as a check on the company, preventing it from going astray. Indeed, the specific application and QR scanning will be mentioned explicitly as tangible proof of the true intentions of Coffee Island to protect its natural environment. Figure 21 presents a proposed billboard and/or poster to be seen by all Coffee Island employees, across all lines of seniority, which will motivate them and remind them constantly what is expected of them. Additionally, a hypocritical behaviour of Coffee Island in the future will be subject to constant debate since it will be easily seen that there is a discrepancy between what the organisation preaches and does.



Figure 21. Visual representation of the smartphone recycling application inside Coffee Island's headquarters and retail shops (Adapted by Vector 2020).

On the other end of the spectrum, Coffee Island customers can be held more accountable as well. Pre-commitment can come in the form of setting a specific recycling target at the beginning of each month. Vouchers and *green coins*, walkthroughs in Coffee Island's recycling hot spots, free tours, gifts, etc., shall be awarded contingent on meeting the target. Whenever a new application user becomes a member, her information may be shared amongst friends, contacts, etc. (provided the user agrees to that) so that her recycling activities get due exposure. This may motivate her indirectly to stick to the application. Through such social media exposure, she is likely to get more appreciation and recognition.

Online support groups can also become pre-committed. They will have a group regulation, an administrator, and an agreement with Coffee Island and other stakeholders (i.e., environmental NGOs) to regularly post material on Coffee Island's

recycling efforts, promote the application, and QR scan. Fennell (2019, p. 437) mentioned that granularity in contributions, which is how much every single person shall contribute to a common cause, depends on two variables. These are: ‘how easy or feasible it is for different temporal selves to make contributions and whether the different selves will be motivated to make those contributions. The first factor is a function of the granularity of the inputs. In contrast, the second factor depends on the payoff structure that the selves confront- which often turns on how goals are defined and how different inputs stack together to achieve them’. In Coffee Island’s case, individual results can be easily posted and shared over social media to showcase what is feasible or not. Additionally, rewards and payoff shall come via vouchers, endorsements, and even field trips and meetings with a famous NBA player. Finally, reminders can also help pre-committing smartphone users, since if activated, they will constantly remind them of the application, their responsibilities, and what is expected of them.

The following data flow chart visually presents the above-mentioned process of applying a pre-committed activity and daily monthly transaction.

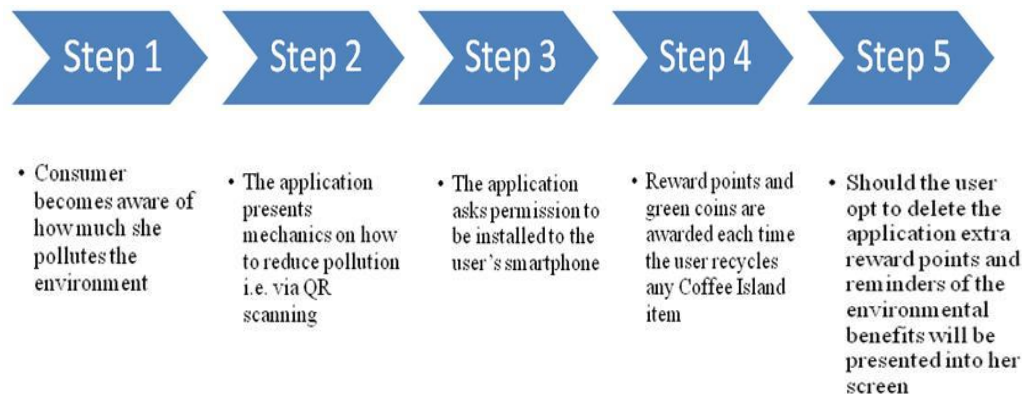


Figure 22. Data flow chart represents the mechanics of making the application a passive transaction and pre-committed activity.

Another critical action learning coping mechanism against recycling is making the smartphone application and QR scanning part of a passive business transaction. A passive business transaction occurs unnoticeably, without much thinking, as part of a firm’s regular business agenda. The author has observed the example of the Co-Operative Bank of England, which created a full-length order of doing business only

in an ethical and socially acceptable way. The same can be engraved through rules and regulations with Coffee Island's culture. How can this be feasible? Billboards and signs throughout the company can promote environmental consciousness, with two main tools in its arsenal, the recycling smartphone application, and the QR scanning. Moreover, the author proposes an annual environmental meeting to ensure that enough support resources and devotion are offered to the intervention. The regular external environmental audits shall be organised at an unnoticed time by an external agency to ensure that the company is true to its initial goal.

### **6.9a Contribution to Critical Action Learning**

Critical action learning is about finding ways to tackle a specific industrial problem, amongst many other useful learning trips it has to offer. In the case of Coffee Island, the basic objectives were to identify how many customers would be willing and able to download a recycling application and engage in recycling through QR scanning. Study 1 revealed that many customers are willing and able to do so upon completing terms and conditions. Moreover, another key issue was the role of the insight gained from the four qualitative interviews. They all agreed that Coffee Island did pollute the environment and discussed the possibility that the public might see the company's intentions as not purely honest and true to the idea of reducing pollution through recycling.

The author was keen on reversing the situation by making Coffee Island an active participant in the project. Engaging in it via spending money to create the application, QR scanning trackers, and creating a lot of publicity via social media, an NBA player endorsement, and free vouchers are costly. Additionally, Coffee Island will offer free giveaways to customers who recycle. It will allow them to see how, when, and to what extent recycling is achieved through the means heavily discussed in the present DBA thesis. Pre-commitment comes from the firm, which will be externally investigated by an environmental audit each year. On top of that, annual meetings with stakeholders will ensure a robust yearly annual discussion about the problem.

The application will make recycling a passive transaction for its users, and Coffee Island, by setting a monthly desired goal which shall lead to *green coins*, as a motivational technique. In addition to that, social media amateur video-recording of recycling by customers and active help from educated Coffee Island employees on

using the smartphone application and QR scanning shall lead to solutions to various troubleshooting problems that may arise in the process. The author understands that for each unresolved problem, there are negative consequences (i.e., Coffee Island pollutes; it pays a heavy fine to the Local Government). The author has learnt that a problem also leads to an opportunity (i.e., Coffee Island pollutes; paves its way to going green with smartphone application and QR scanning by 2022).

### **6.9b How actionable knowledge emerged in the present thesis**

As a scholar-practitioner, the author thoroughly investigated and scrutinised the findings of the present thesis. From Studies 1 and 2, a lot of useful insight came to the surface. For instance, the company does pollute the environment, and this is a constant challenge/problem. Moreover, the author immediately took corrective action to reduce the negative externalities generated by Coffee Island. A proactive approach was taken. Although the media and whistleblowers were calling out the firm, the government offered some advice against over-polluting. The author wished to go beyond the letter of the law and embark on a win-win situation engaging its external customers into a giant recycling programme.

Beer (2020, p. 508) wrote about actionable knowledge and described it as ‘an alternative approach in action research aimed at overcoming the status quo by developing new management practices and then testing (evaluating) whether they accomplish their purposes’. Coffee Island indeed took an alternative approach. Once the pollution problem came to the author’s attention, corrective actions were taken right away. The most important one is the current thesis intervention to the problem. As the project progressed, the Covid-19 crisis emerged and prevented the implementation of the project.

A win-win situation can be created via a triple bottom line approach, which Coffee Island proposes. It is not merely making profits but looking out for the planet and people as well. Kazancoglu and Ozkan-Ozen (2020, p. 4244) wrote that ‘the main aim of sustainable production is given as creating and delivering good quality products in a cost-effective and socially responsible way by reducing hazardous environmental impacts. To do so, sustainability assessment is a significant topic for companies and is one of the most important aspects for companies which focus on sustainable production’. Sustainable production will ensure that the planet is not overpolluted.

Consumers are aware of their actions, and the merits of recycling, and Coffee Island shall reach its profit and pollution goals in an eco-friendly way.

Moreover, Wit and Pylak (2020, p. 693) cited the social benefits of following an eco-friendly consumer policy: ‘increasing public involvement in planning and implementing pro-health and pro-ecological projects’ and ‘increasing the sense of ecological and health safety of the society’. So, not only will Coffee Island reduce its plastic, glass, etc., production costs, but it will also benefit society via environmental awareness and public involvement in this mega project intervention.

Beer (2020, p. 514) mentioned that after a new management practice is created (i.e., the QR scanning and smartphone application), two important steps ‘inquire into the effectiveness of the new practice and adapt it’ and ‘evaluate the new practice through multiple research methods’ are mandatory. The effectiveness of the project has been simulated into computer programmes. Due to the Covid-19 crisis, fewer employees are working in the firm. The general lockdown also makes it challenging to find resources needed to implement it fully (i.e., GPS trackers are constantly at a shortage throughout the year 2020). About the last step, indeed, the author needs to conduct a meta-analysis once the project is fully materialised. A goal is meaningful when precise and has a specific date/amount of pollution to be reduced. Ideally, once the intervention occurs, a specific reduction in carbon dioxide emissions and plastic consumption quota will be set right before the project takes place. One year after, it will take into effect.

A vital and actionable piece of knowledge is that Coffee Island is a learning organisation, like any other for-profit firm. Its employees react to human feedback, communication, and proposed organisational changes. Ten years ago, no one paid particular attention to the problem of pollution. Yet, social and technological changes made it almost mandatory to adapt and reverse this issue quickly. Beer (2020, p. 511) wrote that ‘organisations are sociotechnical systems: changes in hard technical facets such as strategy, structure, and processes require changes in organisational facets that are emotionally laden’. Appealing to emotions is something that the author did. Reducing pollution is a law requirement, but given the whole environmentalist movement going on for decades around the globe, it is an emotional intervention.



### **6.9c Where Are We Now?**

The author did his best in 2020 to implement the project. Unfortunately, due to the outbreak of the known pandemic, the project had to stop temporarily. More and more employees had to work in shifts, there is a quarantine throughout Greece, making it extremely difficult to move around, fit GPS trackers, install QR scanning vending machines, buy recycling bins, etc. Also, another significant issue is the fact that the firm currently operates (12 December 2020) on an electronic preorder via the Internet and a takeaway basis. Delivery is allowed, yet as little as physical contact with the staff is allowed. So, until the stores reopen, it will be quite difficult to enact the project fully. Given the giant effort that was required for the project, once the Covid-19 crisis is reversed (i.e., a vaccine is found and/or it is safer to work/shop, etc.), immediately actionable efforts will be made, and the intervention will be materialized. The European Commission (2020, cited in Martin et al., 2020, p. 1) mentioned that it ‘estimates that the euro area economy would decline by 7.25% in 2020, with all countries expected to fall into a recession’. As it is obvious, Coffee Island, like most firms, is quite conservative in terms of embarking and fully committing to the intervention, as economic survival is a prerequisite before moving into it.

### **6.10 The present thesis and the notion of going green**

Initially, green marketing was not keen on technology, since way back in the seventies, the term was firstly discovered, and current technology was not even conceived. Moreover, the planet’s pollution was not that huge of a problem, and the economies were recovering from the disaster of the Second World War. As the present Doctorate Thesis unveiled, using a 3G (or newer) smartphone can facilitate and make recycling more accountable both for Coffee Island and its customers. Coffee Island is controlled via posts on social media, videos showing it actually doing recycling, and walkthroughs in its recycling hot spot lots to convince the public that it strives for optimum results in the specific area. Smartphone application users are also monitored live-time since their recycling results pop on their screens. The delivery of recycling can be readily measured in Coffee Island’s headquarters.

If there is a will, there is a way in most business problems. A basic strategy is to devote enough labor time to identify what is causing it and reach a meaningful solution constructively. Ideally, it should be a win-win situation, as the author thinks

about the specific intervention. More specifically, customers will gain from the free vouchers, coupons, gifts and will have the chance to reduce Coffee Island's carbon footprint protecting themselves and future generations from pollution. On the other end of the spectrum, Coffee Island did not hide from the problem and took an active stance in solving it. Such active participation and honest dealing of pollution can reposition Coffee Island as a greener company, which cares about economic sustainability and allows its users to roam freely on a pollution-free planet or reduce negative externalities maximum of its capabilities.

By repositioning, the author means that the perception of consumers, and various stakeholders like government officials, will shift from a polluter of the environment towards a green or at least greener company. This can be achieved by the active participation of all Coffee Island members, alongside the help coming from various consumers, and extra participation of government authorities when the latter shall measure the extent to which pollution was reduced.

Valentine (2002, p. 164) states a gap between the image a firm sells and what the consumer and/or customer wishes for. 'The inexplicable, intuitive, mad connection leap into ideas that are the creative world we serve. Betwixt these two spaces is a 'liminal zone', a place of transformation, where fact becomes idea; where insight becomes action'. Exactly the transformative ideas of converting Coffee Island from a known polluter to a conscious firm is what the author wishes to do through the present intervention.

A green company reduces clutter and pollution altogether. But, more importantly, its stakeholders view it as such. Many examples like Body Shop and Apivita exist, which are considered firms that do not pollute the environment but actively promote environment-friendly goals. Coffee Island wishes to do precisely the same.

Finally, through the help of the marketing department, Coffee Island can easily turn itself into a green company. Its Public Relations Department will transmit market research (Valentine, 2002) and mega intervention in a 360 degrees way via press conferences, press releases, etc.

### **6.11 Limitations of the Present DBA Thesis**

The specific DBA Thesis discussed how Coffee Island could reverse the pollution it creates. More particularly, instead of hiring an external company to do so, the very

company engaged in the problem and became a solution. A key stakeholder, its customers, is actively engaged throughout the specific critical action intervention. Each study has its limitations. The findings of this thesis regard Coffee Island's retail shops located in Athens, Greece, since both Study 1 and Study 2 were conducted using four experts and a sample of 300 customers from the specific city. It could be easy to generalize the results to other coffee retailers or even Coffee Island Cyprus. Yet, the author wishes to mention that different countries might have discrepancies in their customers' consumer behaviour, and tastes, perceptions towards recycling.

On top of that, Coffee Island Cyprus lacks specific Information Technology infrastructure for the time being. Hence any suggestion to duplicate the project would lead to a serious time lag due to technological constraints and barriers. Moreover, other coffee retailers (i.e., Lavazza Café, McDonald's, Starbucks, etc.) might lack the managerial determination to embark on an active solution to the problem and intervention using key stakeholders as part of their business policy. Unfortunately, not all managers and scholar-practitioners are aware of the array of pros and benefits critical action learning offers to business challenges that can easily be converted into opportunities.

## **CHAPTER 7: Conclusion of the Thesis**

### **7.0 Conclusions on the overall electronically based green Coffee Island intervention**

The present DBA Thesis is based on a scholar-practitioner approach, always located within the realm of Critical Action Learning. The author of the current paper analysed in detail a problem – pollution created by Coffee Island. After doing so, the author conducted an extensive stakeholders' analysis to identify and track down measurable and efficient ways of reducing the problem. The research questions shall be presented in detail in the following lines. Conclusions on each will be analytically presented and discussed based on the assumptions and findings from the primary (Study 1 and Study 2) and secondary research (Literature Review).

To begin with, the first question coming from the DBA Thesis Proposal was the following: *a) How many customers will be willing and able to use the smartphone application and QR code scanning consistently for the purpose of reducing pollution generated by my firm?*

The answer to this question is two-fold. Firstly, the ability to use the application and QR scanning necessitates personally owning a 3G smartphone or newer version of it. The vast majority of respondents replied positively. Also, most of the sample (Study 1) presented the answer that they have regular access to the Internet through various means. The author was pleased to see Internet access via free Wifi networks since if the connection is free, the user will not think about the cost of using the application in terms of Megabytes consumption.

Secondly, the motivation for the usage of technological tools comes from three main sources. Firstly, it is the monetary or product vouchers to be gained via recycling. Coupons, vouchers, *green coins*, whatever such a reward might be called, are necessary to promote the service altogether. This result is based on Study 1. Another aspect is the convenience, speed, graphics design, and how much space it takes up on a smartphone. All these notions fall in the attractiveness and hard disk cost of the average smartphone user.

The second source that motivates users is social media, particularly images of recycling and QR scanning. Moreover, through social media recommendations by friends, posting, reposting, sharing recycling and QR scanning footage, and creating

Coffee Island recycling groups can prove meaningful in enhancing participation in the proposed recycling intervention. Reminders, bell notifications, hashtags, and tagging friends on social media images (i.e., Twitter, Facebook, etc.) can all prove invaluable for the project's success. Keeping smartphone users posted about the news on the application and QR scanning can even further augment the desire of users to keep using it.

The third realm of motivation (Study 1) stems from getting the product endorsed by a famous NBA player. As seen through the research, they are considered opinion leaders, have followers, and are influencers. Such a move can easily promote the application because NBA players are widely known and support public relations agencies and free press media coverage throughout the year.

The second question became more specific and mentioned particular actions to be made. The second research question is: *b) What specific actions will be taken in collaboration with users/customers proposals to reduce pollution?* The author, alongside the findings from Study 1, Study 2, the literature review, and pure managerial intuition supported by Critical Action Learning, decided to use pre-commitment and passive transactions to make the recycling application and QR scanning an impromptu and unconscious process. By setting a yearly environmental audit from an external party, Coffee Island shall become more responsible for pollution.

Moreover, having an annual stakeholder's meeting shall lead to brainstorming on the issue, and most probably, Coffee Island will be more careful in its recycling and environmental protection attempts. Finally, customers will be pre-committed by a predetermined recycling goal each month on their smartphone screens and notifications if they fall behind. About QR scanning, yet again, reminders and notifications will inform users about a pre-set recycling target per month and how much they have left.

The third research question was: *c) Which factors will actively influence customers' decision to participate in the QR codes/smartphone application e-marketing?*

The third research question somehow mingles with questions one and two. Study 2 brought to surface knowledge from the experts in the notion of true and honest intentions. Many organisations greenwash their operations, falsely claim that they are

eco-friendly, and promote their labels by distorting the actual extent of whatever recycling attempts they are making (exaggerated advertising claims). The author wishes to reverse such potentiality. He engages users of the recycling smartphone application, offering them a hands-on experience of how much is saved and offering walkthroughs in recycling hot spots of Coffee Island, QR scanning recycling trackers, etc. Real-time information will be shown on users' screens when they recycle an item. For instance, after a plastic cup has been recycled, an icon shall present the actual reduction in carbon footprint (carbon dioxide emissions) it resulted.

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**APPENDIX 1 – Electronic Questionnaire given to a sample of 300 loyal (more than two years) Coffee Island customers to be extensively used in Study 1 of the present DBA Thesis**

The author wishes to mention that through the present e-questionnaire, the three primary research questions analytically described in the DBA Thesis Proposal are expected to be answered. These three research questions were:

*a) How many customers will be willing and able to use the smartphone application and QR code scanning consistently for the purpose of reducing pollution generated by my firm? And the other two subsequent questions based on the first one (which is the key one) are:*

*b) What specific actions will be taken in collaboration with users/customers proposals so as to reduce pollution? (Users/customers will be interviewed through the e-questionnaire) and,*

*c) Which factors will influence customers' decision to actively participate in the QR codes/smartphone application e-marketing?*

Each single question of the electronic questionnaire wishes to disseminate the trends, perceptions, beliefs, and cultural values which will make a customer or not start using consistently the recycling smartphone application, and Quick Response scanning recycling process.



**Question 1:** About the participant. What is your gender?

Male  Female

**Question 2:** What is your age?

20-22  22-25  25-30

30-35  35-40  40-45

Other

**Question 3:** How many years have you been buying goods from Coffee Island?

0  1  2  3  4 and more

**Question 4:** Do you consider Coffee Island as a firm which pollutes the environment?

Yes  No

**Question 5:** Do you currently have access to the Internet on a regular basis?

(More than 20 hours per day via any means i.e. Wifi network, USB connection, Internet Café access).

Yes  No

**Question 6:** Do you personally own, carry and use a 3G smartphone (or newer version) on your daily routine while shopping at super-markets, retail shops etc.)?

Yes  No

**Question 7:** How often would you use an application which can reduce pollution generated by humans? (only mark one)

Zero times per week  Once per week  Twice per week  Three or more times per week

**Question 8:** Which of the following, if any, are deemed useful by you in order to use a smartphone application aimed at reducing pollution? (Mark as many as necessary).

Speed of the application  Reward points

Cost of using it  Graphic design and sound effects

**Question 9:** Have you ever used QR scanning from your mobile phone? (only mark one)

Never  1-50 times  51-100 times  More than 100 times

**Question 10:** What can motivate you to keep using an eco-friendly application? (mark as many as necessary)

Seeing the results gained via a graph at the end of each period (like an accountability design graph)

Gaining points the more I participate (i.e. more recycled bottles more reward points in vouchers)

Reminders by my smartphone at regular intervals

Famous people promoting the application

Participating in social media support groups which actively promote recycling via the specific application

**Question 11:** Which social medias do you use? (Tick as many as appropriate from none to potentially all if you do use them).

Facebook  Twitter  WhatsApp  WeChat

QZone  Tumblr  Instagram

**Question 12:** How likely is it for you to suggest a recycling application to a friend/relative/person from your social network? (Mark from 1 least likely to 5 most likely).

1  2  3  4  5

**Question 13:** Suppose that through using the application you are awarded green coins which correspond to various Coffee Island gifts (i.e. vouchers, free coffee mugs etc). Would that encourage you to keep using it more? (Tick from 1 to least likely to 5 most likely).

1  2  3  4  5

**Question 14:** Which of the following means of communication will cause you to keep using a recycling application for long term? (Tick as many as appropriate).

Reminder  Vouchers  Reward program  WeChat   
Virtual prizes  Social media exposure (i.e. Facebook notification that a certain recycling goal was achieved)

**Question 15:** The recycling program may be endorsed by a world renowned athlete coming from the NBA (USA professional basketball). Will such an endorsement convince you to use a recycling application? (Mark from 1 the least possible to 5 being the maximum possible).

1  2  3  4  5

**Question 16:** How likely are you to QR scan items purchased from Coffee Island before disposing them in designated areas of recycling (i.e. recycling parks, recycling bins, Coffee Island's green hot spots designated for recycling)? (Tick from 1 to least likely to 5 most likely).

1  2  3  4  5

## APPENDIX 2 – Ethical Approval Letter Provided by UoL Committee

Dear Mr. Kaitatzis,

I am pleased to inform you that the DBA Ethics Committee has approved your application for ethical approval for your study. Details and conditions of the approval can be found below:

Committee Name: DBA Ethics Committee

Title of Study: Developing an eco-friendly strategy via the use of QR codes and a smartphone application

Student Investigator: Lampros Kaitatzis

School/Institute: School of Management

Approval Date: 31<sup>st</sup> of October 2018.

The application was APPROVED subject to the following conditions:

The researchers must obtain ethical approval from a local research ethics committee if this is an international study.

University of Liverpool approval is subject to compliance with all relevant national legislative requirements if this this is an international study.

All serious adverse events must be reported to the Sub-Committee within 24 hours of their occurrence, via the Research Integrity and Governance Officer ([ethics@liv.ac.uk](mailto:ethics@liv.ac.uk)).

If it is proposed to make an amendment to the research, you should notify the Committee of the amendment.

This approval applies to the duration of the research. If it is proposed to extend the duration of the study as specified in the application form, the Committee should be notified.

Kind regards,  
Thomas Matheus

DBA Ethics Committee University of Liverpool Management School in Partnership

## Appendix 3 – Participant Consent Form

(Was sent 24 hours before the interviews or e-questionnaire completion actually takes place)

### Participant consent form

Version number& date: 3<sup>rd</sup> Version, 18 October 2018

Research ethics approval date: 31<sup>st</sup> October 2018

Title of the research project:

*'Developing an eco-friendly strategy via the use of QR codes and a smartphone application.'*

Name of researcher(s): Lampros Kaitatzis

initial box

Please

1. I confirm that I have read and have understood the information sheet dated [ ] for the above study, or it has been read to me. I have had the opportunity to consider the information, ask questions, and have had these answered satisfactorily.
2. I understand that taking part in the study involves retrieving e-questionnaires (Study 1) or tape recording (Study 2).
3. I understand that my participation is voluntary and that I am free to stop taking part and withdraw from the study at any time without giving any reason and without my rights being affected. In addition, I understand that I am free to decline to answer any particular question or questions.
4. I understand that I can ask for access to the information I provide, and I can request the destruction of that information if I wish at any time (Study 1) or before taking the face-to-face interviews.
5. I understand that the information I provide will be held securely and in line with data protection requirements at the University of Liverpool until it is **fully anonymised** and then deposited in the **DBA library** for sharing and use by other authorised researchers to support other research in the future.
6. I understand that signed consent forms and **e-questionnaires (Study 1)** or tape recording (Study 2) will be retained in a password-protected laptop until 5 years after the individual was asked.
7. I agree to take part in the above study.

\_\_\_\_\_  
\_\_\_\_\_

Participant name

\_\_\_\_\_

Date

Signature

\_\_\_\_\_  
\_\_\_\_\_

Name of person taking consent

\_\_\_\_\_

Date

Signature

**Principal Investigator**

**Student Investigator**

[Name]

[Name]

[Work address]

[Work address]

[Work telephone]

[Work telephone]

[Work email]

[Work email]

## Appendix 1:

### *Open data and data sharing*

I understand that the information I provide will be held securely at the University of Liverpool until it is **fully anonymised** and then deposited in the DBA library for sharing and use by other authorised researchers to support other research in the future.

I understand that other authorised researchers may use my words in publications, reports, webpages, and other research outputs, only if they agree to preserve the confidentiality of the information as requested in this form.

I understand that personal information collected about me that can identify me, such as my name or where I live, will not be shared beyond the study team.

### *Audio / video recordings*

I understand and agree that my participation will be tape-recorded (Study 2), and I am aware of and consent to your use of these recordings for the following purposes: DBA research for the specific dissertation.

### *Storage of documents*

I understand that signed consent forms and e-questionnaires (Study 1) or tape recordings (Study 2) will be retained in a password-protected laptop until 5 years from the participation of the individual.

I understand that a transcript of my interview will be retained for 5 years.

*Exclusion criteria*

I understand that I must not take part if (Study 1 only) I am not a customer of Coffee Island for at least two years.

## **Appendix 4 - Participant Information Sheet (Study 1)**

### **Participant Information Sheet (Study 1)**

1. **Title of study:**

*‘Developing an eco-friendly strategy via the use of QR codes and a smartphone application’*

2. **Version number and date:**

Version number 3.0 and the date is 18th of October 2018.

3. **Invitation paragraph:**

You are being invited to participate in a research study. Before you decide whether to participate, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and feel free to ask us if you would like more information or if there is anything that you do not understand. Please also feel free to discuss this with your friends and relatives if you wish. I would like to stress that you do not have to accept this invitation and should only agree to take part if you want to. Thank you for reading this. (Note the invitation paragraph is sent 24 hours before the actual completion of the e-questionnaire takes place).

4. **Purpose of the study:**

The present study analyses the desire and ability of my firm’s customers to use QR coding and a smartphone application to reduce pollution generated through the production process of beverages, confectioneries etc. A debriefing form will be given at the end of the research.

5. **Why have I been chosen to take part?**

You have been chosen to take part because you are a member of the Coffee Island loyalty card programme, and as per our database, you have been a customer for at least two years. The terms of the loyalty card mention that you might be contacted for research and market research purposes. The sample comprises 300 customers of our products. The researcher has the right to use the data since you are in Coffee Island’s database via the loyalty card programme.

6. **Do I have to take part?**



Your participation is voluntary, and you are free to withdraw at any time without explanation and without incurring a disadvantage.

**7. What will happen if I take part?**

During the e-interview, you will answer some questions on your ability and desire to use QR codes and a smartphone application on reducing carbon footprint, clutter, and overall pollution via becoming part of my firm’s e-green marketing strategy. The sample will be reached via the Internet. The duration is around one hour, and it will take place just once. Your responsibility is to answer as honestly as possible the set questions.

**8. How will my data be used?**

*“The University processes personal data as part of its research and teaching activities in accordance with the lawful basis of ‘public task’, and in accordance with the University’s purpose of “advancing education, learning and research for the public benefit.*

*Under UK data protection legislation, the University acts as the Data Controller for personal data collected as part of the University’s research. The [Principal Investigator / Supervisor] acts as the Data Processor for this study, and any queries relating to the handling of your personal data can be sent to [[Principal Investigator / Supervisor contact details](#)].*

How will my data be collected?	Via e-questionnaires and the duration is about one hour to fill it in.
How will my data be stored?	In a hard drive
How long will my data be stored?	It will be stored for five years.
What measures are in place to protect the security and confidentiality of my data?	The data will become anonymous, and the laptop where they will be safe is password protected. The researcher of this DBA has exclusive access to the laptop’s use and is the only one who knows the secret password. The laptop is kept in a locked room with a strong

	security lock, and no one else has access to either the room or the laptop. You must sign the Consent Form, yet I will place a blank white sticker over your signature to provide anonymity.
Will my data be anonymised?	Yes
How will my data be used?	They will be used through an Excel file analysis and pie chart one as well.
Who will have access to my data?	The investigator, and the University's DBA supervisors.
Will my data be archived for use in other research projects in the future?	No.
How will my data be destroyed?	Via deleting the relevant file from both the hard disk and the recycle bin.

**9. Expenses and payments.**

No expenses or reimbursement is offered at the present research, as it is done through e-questionnaires.

**10. Are there any risks in taking part?**

No perceived disadvantages or risks are involved during the research. It is done over the Internet. Should you experience any discomfort or disadvantage as part of the research,, please immediately make it known to me. You can let me know via e-mail.

**11. Are there any benefits in taking part?**

Your answers will be used to construct an e-green marketing campaign; hence hopefully, my firm's carbon footprint will be less should the strategy be adopted and embraced by customers. The benefit comes indirectly, as you will not gain a direct benefit, but society and the environment will be less polluted in the future.

**12. What if I am unhappy or if there is a problem?**

If you are unhappy or a problem, please feel free to let us know by contacting [Mr. Lampros Kaitatzis at 00393491469448 or

lampros.kaitatzis@online.liverpool.ac.uk] and we will try to help. If you remain unhappy or have a complaint that you feel you cannot come to us with, you should contact the Research Governance Officer at [ethics@liv.ac.uk](mailto:ethics@liv.ac.uk). When contacting the Research Governance Officer, please provide details of the name or description of the study (so that it can be identified), the researcher involved, and the details of the complaint you wish to make. Also, participants can contact the Research Participant Advocate (USA number 001-612-312-1210 or email address [liverpooethics@ohcampus.com](mailto:liverpooethics@ohcampus.com)).

**13. Will my participation be kept confidential?**

Data is collected over the Internet when you answer the e-questionnaire. It will be stored securely in a password-protected laptop. Your answer will be anonymous (no identification of name might be possible by any third parties). It will be used for the present project. Access to the data will be given to the DBA supervisor and me. It will be stored for five years, and then it will be permanently deleted from the laptop.

**14. What will happen to the results of the study?**

You will not be identifiable from the results. The results of the study will be used to write a DBA thesis. No results are going to be published.

**15. What will happen if I want to stop taking part?**

You can withdraw at any time, without explanation. Results up to the withdrawal period may be used if you are happy for this to be done. You also have the option to request that your results are destroyed, and no further use of them is made. Since the results are anonymous, they may only be withdrawn prior to anonymisation. This is possible by you requesting me to do so via e-mail.

**16. Who can I contact if I have further questions?**

Please contact the Principal Investigator.

## **Appendix 5 - Participant Information Sheet (Study 2)**

### **Participant Information Sheet (Study 2)**

1. **Title of study:**

*‘Developing an eco-friendly strategy via the use of QR codes and a smartphone application’*

2. **Version number and date:**

Version number 3.0 and the date is 18th of October 2018.

3. **Invitation paragraph:**

You are being invited to participate in a research study. Before you decide whether to participate, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and feel free to ask us if you would like more information or if there is anything that you do not understand. Please also feel free to discuss this with your friends and relatives if you wish. I would like to stress that you do not have to accept this invitation and should only agree to take part if you want to. This study is separate from my role as a GM of the firm, and you should feel free to produce your honest opinions on each given question.

Thank you for reading this. (Note the invitation paragraph is sent 24 hours before the actual interview takes place).

4. **Purpose of the study:**

The present study analyses of the desire and ability of my firm's customers to use QR coding and a smartphone application to reduce pollution generated through the production process of beverages, confectioneries, etc. A debriefing form will be given at the end of the research. The managers will be asked what specific measures can be taken to reduce pollution via the intervention of customers. For example, they could propose specific reward bonus programmes, a new application idea, or even brainstorm on the future effectiveness of the overall endeavor. Two essential topics that can be discussed are: a) the idea of the QR codes and applications in terms of reducing negative externalities, and b) proposal of alternative ideas in the same realm and/or alterations in the existing intervention mode.

**5. Why have I been chosen to take part?**

You have been chosen to take part because you know my firm’s environmental actions. Also, your expertise in environmental analysis will allow you to produce sound knowledge that can be used in action research on behalf of my firm. These managers have been invited via convenience sampling. Three are available within my firm, and one is an NGO manager.

**6. Do I have to take part?**

Your participation is voluntary, and you are free to withdraw at any time without explanation and without incurring a disadvantage.

**7. What will happen if I take part?**

During the interview, you have to answer some questions on using technology to reduce pollution caused by my firm and propose solutions to this mentality.

**8. Expenses and payments.**

No expenses or reimbursement are offered at the present research, as it is done through e-questionnaires.

**9. How will my data be used?**

*“The University processes personal data as part of its research and teaching activities in accordance with the lawful basis of ‘public task’, and in accordance with the University’s purpose of “advancing education, learning and research for the public benefit.*

*Under UK data protection legislation, the University acts as the Data Controller for personal data collected as part of the University’s research. The [Principal Investigator / Supervisor] acts as the Data Processor for this study, and any queries relating to the handling of your personal data can be sent to [[Principal Investigator / Supervisor contact details](#)].*

How will my data be collected?	Via face-to-face interviews of one hour each.
How will my data be stored?	In a hard drive.
How long will my data be stored?	It will be stored for five years.

What measures are in place to protect the security and confidentiality of my data?	The data will become anonymous, and the laptop where they will be safe is password protected.
Will my data be anonymised?	Yes
How will my data be used?	They will be used through a qualitative analysis
Who will have access to my data?	The investigator the University's DBA supervisors.
Will my data be archived for use in other research projects in the future?	No.
How will my data be destroyed?	Via deleting the relevant file from both the hard disk and the recycle bin.

**10. Are there any risks in taking part?**

No perceived disadvantages or risks is involved during the research. It is done face-to-face. Should you experience any discomfort or disadvantage as part of the research,, please immediately make it known to me.

**11. Are there any benefits in taking part?**

Your answers will be used to construct an e-green marketing campaign; hence hopefully, my firm's carbon footprint will be less should the strategy be adopted and embraced by customers. Society can benefit via the reduction of pollution.

**12. What if I am unhappy or if there is a problem?**

If you are unhappy, or if there is a problem, please feel free to let us know by contacting [Mr. Lampros Kaitatzis at 00393491469448 or lampros.kaitatzis@online.liverpool.ac.uk] and we will try to help. If you remain unhappy or have a complaint that you feel you cannot come to us with, you should contact the Research Governance Officer at [ethics@liv.ac.uk](mailto:ethics@liv.ac.uk). When contacting the Research Governance Officer, please provide details of the name or description of the study (so that it can be identified), the researcher involved, and the details of the complaint you wish to make. Also, participants can contact the

Research Participant Advocate (USA number 001-612-312-1210 or email address [liverpooethics@ohcampus.com](mailto:liverpooethics@ohcampus.com)).

**13. Will my participation be kept confidential?**

Data is collected personally since the interviews will be face-to-face. It will be stored securely in a password-protected laptop. Your answer will be anonymous (no identification of name might be possible by any third parties). It will be used for the present project. Access to the data will be given to the DBA supervisor and me. It will be stored for five years, and then it will be permanently deleted from the laptop.

**14. What will happen to the results of the study?**

You will not be identifiable from the results. The results of the study will be used to write a DBA thesis. No results are going to be published.

**15. What will happen if I want to stop taking part?**

You can withdraw at any time, without explanation. Results up to the withdrawal period may be used if you are happy for this to be done. You also have the option to request that your results are destroyed, and no further use of them is made. You can opt-out of the research even if your data has been collected.

**16. Who can I contact if I have further questions?**

Please contact the Principal Investigator.