

**UNIVERSITY OF WINCHESTER**

Exploring the Perceived Barriers for Using Gamification  
as a Technique for Increasing Stakeholder Engagement  
in Sustainability Accounting and Its Reporting

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Doctor of Business Administration

March 2021

This Thesis has been completed as a requirement for  
a postgraduate research degree of the University of Winchester

The word count is: 58,096

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## **ACKNOWLEDGEMENTS**

With thanks to my supervisory team and all participants who engaged in the research, all of whom contributed significantly during very challenging times for us all.

**ABSTRACT**

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The influence of social media on society leads to interesting, unanticipated consequences, complexities, opportunities and threats. These are especially prevalent upon key issues of public interest, causing them to spread more quickly and influence more deeply. The climate emergency is one such issue necessitating a search for more sustainable business approaches. Stakeholder engagement in such initiatives is critical. One approach to achieving the desired engagement is through Sustainability Accounting and Reporting (SAR), which summarises organisational impacts on the environment and society alongside financial performance.

Accordingly, this research identified perceived barriers to stakeholder engagement in SAR data online. This research applied gamification to assess its effectiveness as a proof of concept in mitigating these barriers. The central generalisable premise of this research is that technology should be used to positively involve stakeholders in topics such as SAR that are perceived disengaging but of critical importance to society.

Significant research gaps were identified through a comprehensive review of literature. A contribution to knowledge was built based on a revision to Stakeholder Theory. A two-fold contribution to practice comprised suggestions to increase engagement in SAR data in a practical business context alongside an interactive gamification prototype.

Collection of primary data was completed using a two-stage exploratory sequential mixed methods research design incorporating semi-structured interviews and user acceptance testing (UAT) of a gamification prototype. The interviews strived to identify barriers to engagement in SAR, and the online prototype tested if these barriers generalised to a larger sample whilst conducting a proof-of-concept exercise on the online prototype.

The results suggested that barriers generalised to a larger sample in 75% of cases. 90% of participants viewed the prototype as an acceptable proof-of-concept, and 61% approved of the use of reward systems as an appropriate method of engagement in SAR. A novel conceptual model was built on the findings of this primary research. This model identified antecedents, barriers and mediators of engagement in SAR. It incorporated the influence of public opinion as a key mediator, introducing the concept of “amplifiers” to engagement and motivation over time, in a novel approach underpinning the contribution to knowledge. This was combined with a contribution to practice in the form of suggestions for new techniques, technological approaches and systems in an operational business context.

Applications for future research were identified in follow-on studies and immersive game research techniques, as a further significant contribution. Significant propensity to create further knowledge of value in other domains such as tourism or education was also highlighted.

**Keywords:** [Sustainability, Gamification, Stakeholder Theory, Engagement, Prototype, Mixed Methods]

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## **CHAPTER ONE - INTRODUCTION**

### **Research Background and Context**

The first chapter of this thesis is dedicated to explaining the background and context to this research. It does this by clearly presenting the aims and objectives, providing definitions for key terms, outlining the contributions made and explaining the structure of the remainder of the document. The following section introduces the reader to the underpinning context of the research.

### **Social Media, Society, Stakeholders and Accountability**

The rise of interactive social media over the last twenty years is pervasive, well documented and the subject of much research, conducted in continually volatile conditions (Lomborg, 2017, p.7). Outside the primary purpose of any emerging platform or application created, the ripple-effect of its second-order implications spread widely, changing and shaping society and human behaviour. This leads to interesting, unanticipated consequences, complexities, opportunities and threats.

Just as social media itself shapes society, events in society develop and are shaped in drastically different ways under the influence of social media. Recent years have seen several such events shape society to an extent and at a speed that was not previously considered. Significant news stories, key events and issues of public interest have spread more quickly, influenced more deeply and been discussed more widely by people from all countries and all positions in society. Events such as the COVID-19 pandemic (Easton, 2020, [online]), so-called “Arab Spring” (Bruns, Highfield and Burgess, 2013, p.873), social movements including the “Me Too Movement” (Jackson, 2018, p.20), “Time’s Up” (Langone, 2018, [online]), the profile of Greta Thunberg (BBC News, 2019h, [online]) and the so-called “Blue Planet Effect” (BBC News, 2018a, [online]) have shown that a public interest topic or news story can develop and gain momentum in directions and at a scale that was simply not possible before the advent of social media. Whilst it remains to be seen if long-lasting societal change can be affected based on these movements, the early signs are that attitudes can at least be influenced short-term (The Fawcett Society, 2018, [online]).

Combining this social media “power” with an appetite in society for a different approach to capitalism, fuelled partially by public opinion in the wake of the financial crisis of 2008 (Harcourt, 2014, p.1308), partially by rising dissatisfaction with economic and social inequality (Amis, Munir, Lawrence, Hirsch and McGahan, 2018, p.1131) and taking into account increasing demand from interested parties of all types to hold businesses to account for their actions (Herremans, Nazari and Mahmoudian, 2016, p.417), it becomes clear that organisations and consumers face a complex and dynamic set of challenges in a volatile or unpredictable operating environment (Bennett and Lemoine, 2014, p.313).

Organisations have always been prevailed upon by both legislation and shareholders to produce reports and statements of financial performance, so that investors can make decisions and report on the status of their portfolios. High profile figures in the investment sector have also publicly emphasised the urgent need for adoption of responsible and sustainable investment strategies (Fink, 2020, [online]). In recent years the scope of such reports has broadened in part due to pressure from these stakeholders (Santos, Murmura and Bravi, 2018, p.96) and the market (Visser, 2011, p.302) both of which can be amplified by the news media (BBC News, 2019f, [online]). It is now expected to include non-financial information that concerns not only profit, but also implications to people and the planet, as articulated by Elkington (1999) in his “Triple Bottom Line” concept (1999, p.73).

This “Sustainability Reporting and Accounting” (SAR) data and approach allows the wider group of stakeholders to make decisions about the implications of that organisation’s operations on themselves, their communities and the planet we all share. The importance of effectively reporting and sharing SAR data cannot be underestimated. The implications to both organisations and the planet are evident from the events of BP’s “Deepwater Horizon” disaster (Silvius and Schipper, 2014, p.70). This largely-avoidable disaster caused eleven deaths, cost BP billions of dollars in fines and share price devaluation (Visser, 2011, p.82; Rayman, 2014, [online]) and there will be long-term negative impacts on ocean biodiversity (Visser, 2011, p.83; Milman, 2018, [online]). BP’s grossly-negligent (BBC News, 2014a, [online]) behaviour was the trade-off that the management team took to *not* halt the exploration to address developing problems in the drill-site, for reasons of cost and time (The Oil Drum, 2010, [online]). Whilst SAR data itself could not have directly prevented the disaster, management attitudes and decisions (which ultimately caused the disaster) might have been approached differently if widely debated amongst all

stakeholders in an open and transparent way. This is a key principle of what effective SAR strives to achieve (Nonet, Kassel and Meijs, 2016, p.724): inclusive decision making in the wider good as opposed to the maximisation of shareholder wealth (Mansell, 2013, p.125).

SAR information is usually published in annual reports or on corporate websites (Lock and Seele, 2015, p.116; Walker and Visser, 2015, p.7), and usually in static or brochure form, presenting limited opportunity for anybody to interact or challenge information. This technique of presentation is often seen as opaque (Visser, 2015, p.79), can be difficult to audit (Laufer, 2003, p.253) and can be perceived as unrepresentative (Kurtz, 2008, p.273). There are, however, some innovators in this area who are creating more “interactive” methods. Whilst most are at early stages, and some have even already failed, they aspire to allow stakeholders to engage in dialogue with organisations who publish SAR data or accredit organisations for what they perceive as positive behaviours. These include those used by: Responsible 100 (2020, [online]), WikiRate (2015, [online]), Buycott (2015, [online]), GoodGuide (Visser, 2011, p.302; GoodGuide, 2020, [online]) and CoGo (CoGo Connecting Good, 2018, [online]).

“Responsible 100” (R100), a SAR ratings platform owned by a London-based for-profit social business (Responsible 100, 2018, [online]), provide the professional context for this research. Their scoring system maps the performance of organisations against more than fifty issue sets in seven different categories. R100 differentiates itself from similar rating standards by involving businesses, non-governmental organisations (NGOs), academia and community representatives in the creation and testing of the scoring criteria, at collaborative “roundtable meetings” (Responsible 100, 2016, [online]). Participating organisations create response statements to the issues in each question set, and these are scored against the agreed criteria by R100 to produce scores out of a possible 100 points, which are eventually classified based on banded ratings as either: “Poor”, “OK”, “Good” or “Excellent” (Responsible 100, 2020, [online]). The results are published online via R100’s website, and consumers may interact, challenge and comment on the data reported (Responsible 100, 2017a, [online]). R100 have observed very little stakeholder interaction with the published SAR data online, echoing the views of multiple writers on the subject, as will be explored further in chapter two. This highlights the problem this thesis strived to contribute to resolving: how might you use interactive social media to better engage stakeholders in SAR data?

One potential option to increase stakeholder interaction might be to use “gamification” of the process. Gamification involves the use of game features “embedded into activities that are not themselves games” (Werbach and Hunter, 2012, p.27; Cardador, Northcraft and Whicker, 2017, p.354). Examples of gamification in everyday life are plentiful, and include those focussed on health such as Fitbit (Fitbit Inc., 2016, [online]) and Apple Health, loyalty and marketing applications such as Nectar (Nectar Loyalty Ltd, 2018, [online]) and Clubcard (Tesco PLC, 2018, [online]), as well as applications aimed at promoting contribution and participation such as Amazon Reviewers (Amazon.com, 2014, [online]) and TripAdvisor (TripAdvisor LLC, 2017, [online]). There are equally critiques and limitations of gamification which will be explored further in chapter two, some of which have been highlighted by building concern and news interest in the practice of “fake” reviewing (Box and Croker, 2018, [online]; BBC News, 2019e, [online], 2019b, [online]) and online “disinformation” (Rosenberg, 2017, [online]), the latter created as a critical observation on the perceived current climate of “fake news” (BBC News, 2018b, [online]).

Any use of gamification in the domain of SAR would aim to encourage stakeholders to participate in an interactive process by providing appropriate rewards for “desired” behaviours (Hammedi, Leclercq and van Riel, 2017, p.644). Such behaviours are myriad and can include: influencing behaviour, loyalty and engagement (Robson, Plangger, Kietzmann, McCarthy and Pitt, 2015, p.412), research (Bailey, Pritchard and Kernohan, 2015, p.18), training (Baxter, Holderness and Wood, 2016, p.120) and healthcare (Hammedi *et al.*, 2017, p.641). There are clear research gaps in the use of gamification (Hamari, Koivisto and Sarsa, 2014, p.3030; Robson, Plangger, Kietzmann, McCarthy and Pitt, 2016, p.36; Nobre and Ferreira, 2017, p.359) and there is increasing interest in its use within sustainability domains (Froehlich, 2014, p.563).

Researching the application of gamification to SAR processes will solve a practical problem for R100, contribute to the promotion of “responsibly” produced products and services which benefit people, the planet and profit as well as create an original contribution to knowledge. The following section addresses the background to the research project, how it evolved and the philosophical approach to the subject area.

## Research Background

This research project stemmed from the researcher's passion for technology and the use of technological innovation to create positive outcomes for both business and society.

Philosophically, the belief that technology can facilitate behavioural change in society was central to the objectives of the project. The underpinning philosophy of this research project was that technology, both as a medium for communication and as a tool for accessing and interacting with organisations presents a huge opportunity to improve business and society, rather than a threat to our progress toward that goal. It follows that by understanding what factors prevent stakeholders interacting with business on key issues, that any solutions to the appropriate issues can be sought and facilitated by technology.

The researcher has extensive professional experience in delivering software solutions to businesses operating in the insurance sector. Delivering these projects involves not only building solutions in cooperation with customers to achieve shared objectives, but also reacting to and managing the internal changes within organisations as this new software is delivered. Such impacts influence people, systems, culture and process and have allowed the researcher to experience first-hand how comparatively small changes can have wide-reaching outcomes, both anticipated and unanticipated. Experiencing the permeation of such changes on a small scale, the question as to whether similar changes can be achieved on a larger scale was of significant interest to the researcher. The context for testing out the researcher's line of inquiry was further shaped by the university at which the research was conducted: the University of Winchester (UoW). The UoW specialises in responsible management initiatives and is affiliated to the United Nations Principles of Responsible Management Education – PRME (The United Nations, 2017, [online]), and through extensive postgraduate studies at this institution, the researcher's agenda became more closely-aligned to that of the university: considering management as a force for driving good in both business and society.

Whilst searching for a context in which to conduct the project, the researcher's passion for technology led to detailed literature reviews into concepts such as crowdsourcing and gamification. The aim of these individual module-level literature reviews, a key part of the professional doctorate programme at the UoW, was to understand the impacts of these

technologies on the relationships between stakeholders, and reviewing these in the context of seminal theories such as Stakeholder Theory (Freeman, Harrison, Wicks, Parmar and Colle, 2010, p.9). Following these reviews, the researcher hypothesised that the integrative version (Horisch, Freeman and Schaltegger, 2014, p.330) of Stakeholder Theory (ST) would need updating to reflect the influence of technology on the medium of engagement between stakeholders. This hypothesis and line of inquiry developed into a context and research question which the researcher believed could make a meaningful contribution to society by potentially improving the effectiveness of Sustainability Accounting and Reporting (SAR) through the application of gamification. The research question which resulted from the events described in this section, as well as the specific aims and objectives of this project are discussed in the following section of this chapter.

## **Aims, Objectives and Approach**

This section addresses the aims and objectives of this thesis, and clarifies how they will be addressed. The research question this thesis addressed was:

“What are the perceptions of producers and consumers on the use of interactive social media in processes for Sustainability Accounting and Reporting, and what are the perceived barriers to engagement, or possible techniques to increase engagement in the processes of SAR”.

Accordingly, the research objectives derived from this question were to:

1. critically analyse existing academic literature and theoretical frameworks on the use of gamification to identify limitations of current practice and research gaps pertinent to the domain of Sustainability Accounting and Reporting (SAR);
2. identify the perceptions of producers and consumers of SAR on potential barriers to engagement in the process of SAR via interactive social media;
3. investigate using an online prototype, the perceptions of consumers of SAR concerning what techniques and rewards might motivate them to use interactive social media to engage more in the processes of SAR;
4. draw conclusions and make recommendations for future research into improving engagement in SAR through the use of interactive social media.

Objective one will be addressed by a review of literature, the output of which is discussed in chapter two. Objectives two and three will be addressed by executing the research design articulated in chapter three, and the discussion required to achieve objective four will take place in chapter five. For clarity in explanation and discussion, this thesis now provides clear definitions for key terms utilised throughout in the following section of this chapter.

## **Definitions of Key Terms**

This thesis concerned itself with the engagement of stakeholders in Sustainability Accounting and Reporting (SAR). Inevitably all concepts articulated in the title of the thesis require a robust definition to enable proper understanding of the context of the research. The key concepts which require definition are explored in the following subsections: “Sustainability Accounting and Reporting” (SAR), “Stakeholder”, “Gamification” and “Engagement”.

### **Sustainability Accounting and Reporting (SAR)**

Sustainability Accounting and Reporting (SAR) is defined by the Global Reporting Initiative (2012) as: “the practice of measuring, disclosing, and being accountable to internal and external stakeholders for organisational performance towards the goal of sustainable development” (2012, p.3). This definition augments the popular definition of Sustainable Development provided by the Brundtland Report: “development sustainable to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs” (United Nations World Commission on Environment and Development, 1987, p.16) to provide a clear and well-articulated definition. This definition was therefore selected by this thesis as the definition for SAR over others reviewed and considered.

Such definitions discarded include that provided by Lock and Seele (2015), who define SAR activity as “discrete, independent corporate editorial works that provide information about CSR and corporate citizenship” (2015, p.116). This definition is not suitable for use in this thesis as it is too restrictive to the medium, implying editorial documents rather than alternate options such as social media or online publication. It also relies on other concepts such as corporate citizenship, so is not a succinct, standalone definition. Fonseca, Macdonald, Dandy and Valenti (2011) define SAR as “the process of assessing and making periodic public disclosures of such [SAR] information” (2011, p.22). This definition was considered unsuitable because it does not make reference to accountability, or stakeholders, and the use of “periodic” has negative connotations for regular or frequent disclosure.



The definition provided by Lozano and Huisingsh (2011, p.100) suggests that:

*“SAR is a voluntary activity with two general purposes: (1) to assess the current state of an organisation’s economic, environmental and social dimensions, and (2) to communicate a company’s efforts and Sustainability progress to their stakeholders”*

Whilst this definition is more detailed and does refer to “stakeholders” as a concept, it does not adequately cover “accountability” as a concept, and the focus on the “voluntary” nature of disclosures, whilst factually correct, does not articulate the seriousness of the concept and is not aligned to the philosophy of this thesis. In simple terms, this thesis viewed SAR as the practice of transparently articulating the performance of an organisation with regard to key measures of performance, as if it were mandatory. This thesis took the view that it is important to disclose this information to stakeholders (not just shareholders), for review and comment rather than solely in static form. A definition for “stakeholder” is addressed in the next section.

### **Stakeholders and Key Concepts from Stakeholder Theory**

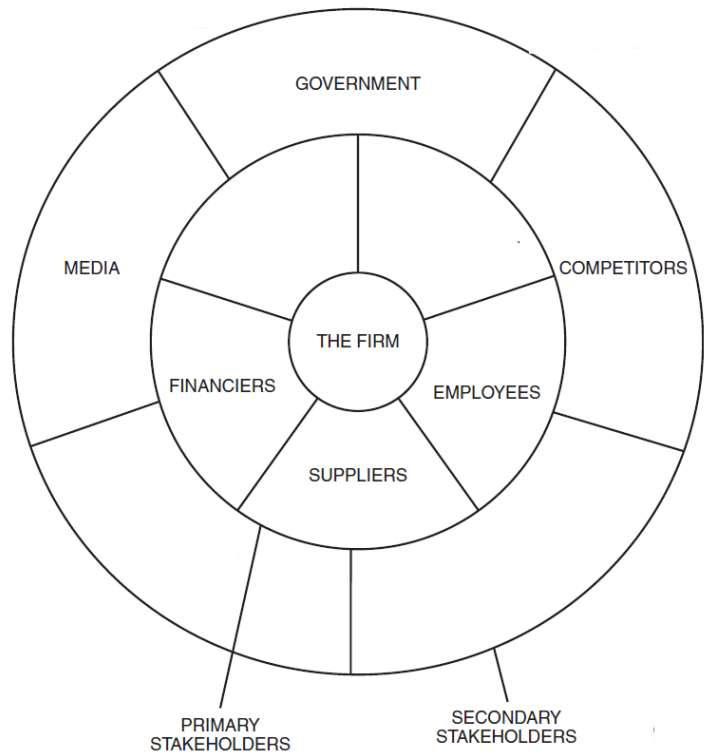
“Stakeholders” are clearly and succinctly defined by Freeman (2010) in the popular and well-cited definition “Any group or individual who can affect or is affected by the achievement of a firm’s objectives” (2010, p.25). This definition references both group and individual stakeholders and acknowledges the two-way nature of the relationship. It builds upon the so-called “Responsibility Principle” (Freeman *et al.*, 2010, p.8) which suggests that, in general, most stakeholders will accept responsibility for how their actions may affect other individuals or groups of stakeholders.

This thesis asserts that the enduring Freeman (2010) definition is the most comprehensive, yet succinct characterisation of a stakeholder from the hundreds published in recent decades, (Miles, 2012, p.285). By contrast, Hill and Jones (1992) propose that stakeholders are “constituents who have a legitimate claim on the firm” (1992, p.133). This definition using the word “constituent” draws democratic or constitutional parallels, and therefore does not emphasise the two-way nature of the relationship between an organisation and its stakeholders, so is deemed inappropriate for the context of this thesis. Research by Cragg and Greenbaum (2002) suggests that a stakeholder could be defined as “anyone with a

material interest in the proposed project” (2002, p.322). This definition focuses on individuals and the concept of material influence, rather than the relationships between stakeholders, either as groups or individuals. Other definitions focus on stakeholders from lenses such as feminism, “groups who interact with and give meaning and definition to the corporation” (Wicks, Gilbert and Freeman, 1994, p.483), or accounting “those with rights to the account” (Gray, Dey, Owen, Evans and Zadek, 1997, p.330), meaning overall that these definitions omit complexities of environment, society and ethics, which are essential for this research. Ultimately, it is the enduring Freeman (2010) stakeholder definition that this thesis asserts will add the most value to the research, underlining its popularity as the most frequently cited definition the concept (Miles, 2012, p.295).

Having adopted this definition, it is necessary to contextualise the stakeholder groups, and their distance and relationships to the organisation. Horisch *et al.* (2014) suggest that the unit and focus of analysis for stakeholder relationships should be the *relationships* between stakeholders and organisations (2014, p.329), and as such this thesis proposes the conceptual model in Figure One below to map example stakeholders for explanatory purposes. The model draws a distinction between differing stakeholder perspectives on Sustainability Accounting and Reporting (SAR) data by extending and separating the concept articulated by Freeman *et al.* (2010, p.24) into two “groups” so-called: “Producers” and “Consumers”. “Producers” are those who create and publish SAR data and are accountable for the content and accuracy of the reporting. “Consumers” are those who receive, review and act upon this data within their relationships with the “Producers”.

## Producers of Sustainability Accounting and Reporting (SAR)



## Consumers of Sustainability Accounting and Reporting (SAR)

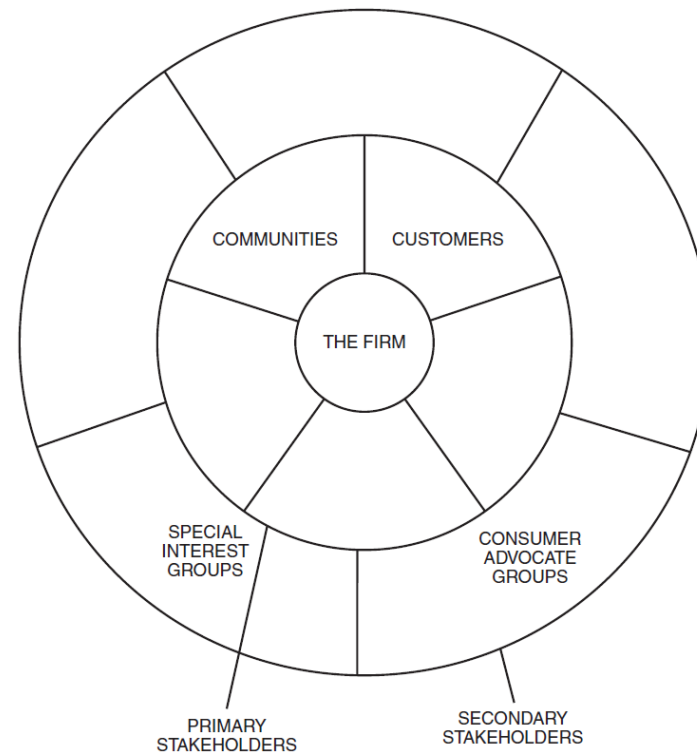
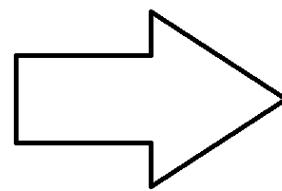


Figure One – “Producers” and “Consumers” of SAR

Adapted from Freeman *et al.* (2010, p.24).

Stakeholder Theory (ST) itself is a popular and well debated body of work, with multiple different perspectives discussed and published across the last twenty years (Laplume, Sonpar and Litz, 2008, p.1153). Many agree that debate on the moral purpose of business should be at the centre of ST, articulated in “Normative” ST, the foundation upon which Donaldson and Preston (1995) believe all other versions are built (1995, p.66). Horisch *et al.* (2014, p.330) present a clear summary of the differing versions, building upon the work of Donaldson and Preston (1995). All such concepts will be explored further in chapter two. For the purposes of this definitions section, this thesis adopts the integrative version of ST (Horisch *et al.*, 2014, p.330) as the most wide-ranging of the various historical incarnations of the theory, considering corporate purpose, ethics and moral perspectives, making it broadly appropriate for the multi-faceted, complex and difficult “wicked problems” (Beinecke, 2009, p.2) approached by SAR. It is later argued, in chapter two, that whilst ST is appropriate to underpin the theoretical aspects of this thesis, it needs revision to consider the influence of social media, internet technology and the different ways that organisations communicate with their stakeholders since the creation of the theory.

The following section of this chapter considers an appropriate definition for gamification.

### **Gamification**

“Gamification” is a concept popular with marketers (Liu, Santhanam and Webster, 2017, p.1017), trainers (Armstrong and Landers, 2017, p.514), academics, healthcare professionals and researchers alike (Bailey *et al.*, 2015, p.18; Robson *et al.*, 2015, p.412). Whilst there is no universally accepted single definition (Burke, 2014, p.6), there are two seminal definitions underpinning the many variants that have proliferated since 2008 (Deterding, Dixon, Khaled and Nacke, 2011, p.9; Vesa and Harviainen, 2019, p.128). Firstly, Deterding *et al.* (2011) suggest gamification is “the use of game design elements in non-game contexts” (2011, p.9), and secondly, Huotari and Hamari (2012) define it as “a process of enhancing a service with affordances for gameful experiences in order to support user's overall value creation” (2012, p.19), following this up further with a more detailed exploration of the technique from a service marketing perspective in a later paper (Huotari and Hamari, 2017, p.25). Huotari and Hamari’s (2017) perspective is that the concept of “work” and “non-work” is a problem for gamification (2017, p.25) and detracts from the value that the technique can offer to multiple different contexts. Their refreshed definition

therefore focuses on the value and service elements of the technique separating the process of gamification from the service that is being enhanced (Huotari and Hamari, 2017, p.26, 2017, p.25).

The general thread running through the peer-reviewed definitions is that gamification involves the use of game features “embedded into activities that are not themselves games” (Werbach and Hunter, 2012, p.27), and aims to learn from “the application of lessons from the gaming domain to change behaviours in non-game situations” (Robson *et al.*, 2015, p.412), including marketing, education and training within the workplace (Cardador *et al.*, 2017, p.354).

Considering such definitions, there are three key concepts which must be highlighted. Firstly, a gamified solution builds on principles that underpin traditional game design: goals, autonomy, rules and feedback (Adamou, 2019, p.45). There are small variations within definitions on these key tenets, with others extended to include concepts such as a “game space” and exchanging “goals” for “rules” (Gray, Brown and Macanufo, 2010, p.2), but broadly the concept is common to much of the literature on gamification. Secondly, the features attributed to “games”, including for example badges (Kwon, Halavais and Havener, 2015, p.93), points and levels of attainment (Kwon *et al.*, 2015, p.95) must be used in a non-game context. Finally, the use of these features should influence user behaviour towards pre-determined objectives built into the design (Robson *et al.*, 2015, p.412; Hammedi *et al.*, 2017, p.644; Landers, Auer, Collmus and Armstrong, 2018, p.317). The influences primarily but not exclusively utilise intrinsic motivation techniques (Hammedi *et al.*, 2017, p.654; Adamou, 2019, p.108) and create a friendly but competitive environment either for individuals or groups of players (Deterding *et al.*, 2011, p.11; Coombs and Holladay, 2015, p.139; Baxter *et al.*, 2016, p.120; Kim, 2018, p.27).

This thesis asserts that each definition in isolation is not sufficiently detailed and does not reflect the bidirectional elements of gamification to engender behavioural change in both participants (stakeholders) and designers (organisations) alike. Accordingly, a compound definition for gamification is proposed based on both the Werbach and Hunter (2012, p.27) and Robson *et al.* (2015, p.412) definitions. This is the definition used by this thesis: “the application of lessons and activities from the gaming domain to change participant and organisational behaviours in non-game situations”. The “non-game situation” for this

thesis involves applying gamification techniques to increase the engagement created around interactions between organisations and their stakeholders, and it is the definition of engagement that this thesis will address next.

## **Engagement**

Whilst discussing an appropriate definition for the concept of “engagement”, clarity on the context is essential. This is because the perspective from which engagement is viewed can be multifaceted, as articulated by Harmeling *et al.* (2017, p.314). Engagement can be considered both as a *strategy* for achieving an outcome, or as response to the use of a specific tool or process for delivery (Harmeling *et al.*, 2017, p.314), and the distinction can be narrow. This thesis concerned itself with the use of gamification as a strategy for increasing stakeholder engagement in Sustainability Accounting and Reporting (SAR) data, as opposed to exploring solely the characteristics of the technique of gamification. Accordingly, any definitions concerning themselves with emotional, cognitive, or behavioural characteristics of a technique or design (O'Brien and Toms, 2008, p.938; Bouvier, Lavoué and Sehaba, 2014) would be less suitable than those which concern themselves with strategies for increasing interaction. Such strategies might aim to engage customers and create behaviours and interactions which go beyond a simple transaction or purchase (Vivek, Beatty and Morgan, 2012, p.127; Jaakkola and Alexander, 2014, p.248), rather than a general study of techniques used in domains such as gaming or simulation (Bouvier *et al.*, 2014, p.6), to keep players or participants engrossed in playing or interacting with a platform.

Therefore having been unable to find a definition specific enough for the domain of SAR, this thesis proposed its own definition for engagement adopting elements of Mathur *et al.* (2008, p.601): “the act of interacting and participating with stakeholders to enhance inclusive organisational decision-making”. This definition can easily be combined with the definition selected for SAR to create a compelling and concise explanation of the engagement explored herein.

The definition also highlights the concepts of interaction, participation and inclusion, with a focus on the eventual decision-making toward the creation of more sustainable business

practices, which is a key aim of the contributions made by this thesis. The next section of this chapter explores these proposed contributions in more detail.

### **Contribution to Knowledge**

As a thesis submitted for the award of a professional doctorate, this research makes a significant contribution to both knowledge and practice. The contribution to knowledge and theory development will be discussed within this section.

The research in this thesis addresses a research gap and lack of literature on gamification (Robson *et al.*, 2016, p.36). The research creates knowledge about a practical application of gamification to solve a specific organisational problem, and fills the knowledge gap in the extent literature, which is largely focussed on concepts rather than practical applications (Hammedi *et al.*, 2017, p.641). The importance of research into reporting standards and practices is underlined by one of the key authors in the field of stakeholder research. Freeman *et al.* (2010, p.141) underline the importance of creating stakeholder-friendly standards in accounting and reporting practice, which closely parallels the research direction of this thesis.

Whilst some believe gamification is vulnerable to being inappropriately used, appropriated by consultants or prone to novelty applications (Hamari *et al.*, 2014, p.3026; Robson *et al.*, 2016, p.33; Vesa and Harviainen, 2019, p.129), the growing amount of papers being published (Hamari *et al.*, 2014, p.3025) and the multiple behavioural influences it may exert on users (Hamari *et al.*, 2014, p.3028; Huotari and Hamari, 2017, p.25; Suh, Cheung, Ahuja and Wagner, 2017, p.269) justify further research in this area (Hamari *et al.*, 2014, p.3030; Suh and Wagner, 2017, p.418; Leclercq, Hammedi and Poncin, 2018, p.82).

Whilst there are examples of some gamification research in areas such as marketing (Nobre and Ferreira, 2017, p.350), customer engagement (Leclercq *et al.*, 2018, p.83) and task efficacy (Cardador *et al.*, 2017, p.356) no research has been identified into the use of gamification toward stakeholder engagement in the domain of Sustainability Accounting and Reporting (SAR). This gap is supported further by findings of research into group-level motivation within organisations (Lowry, Gaskin, Twyman, Hammer and Roberts, 2013, p.634; Cardador *et al.*, 2017, p.362), by implication pertinent to stakeholder groups, and research into competition and engagement theory (Santhanam, Liu and Shen, 2016, p.463).

Further significant support for the stakeholder element of this research can be found from Freeman *et al.* (2010), who acknowledge the potential impact of the internet on stakeholder dialogue and corporate social responsibility initiatives (2010, p.140).

Accordingly, the research conducted in this thesis makes a novel contribution to knowledge by exploring the use of gamification toward stakeholder engagement in the reporting of SAR data, closing a knowledge gap in this area (Dunfee, 2006, p.323).

To further underline how this research contributes to knowledge and theory development, three relevant examples were located as part of the literature review process.

Each of these three pieces of research took a differing approach to definition and conceptualisation of the contribution to knowledge made, with varying results. This subsequently shaped how this thesis approached the definition of its own contribution to knowledge. The examples, their underpinning literature reviews and theoretical contribution further validate the impact made and approach taken by this thesis. To further underline how this research contributes to knowledge and theory development, three relevant examples were located as part of the literature review process. Leclercq *et al.*'s (2018) investigation into the potential negative effects on customer engagement of "loss" in a gamified environment was primarily underpinned by "Equity Theory" (Adams, 1965). This theory focuses on assigning theoretical "values" to elements of transactions to ascertain "fairness" (1965, p.273). Whilst not necessarily appropriate for this thesis, it remains a valid and useful way to evaluate this "exchange" of stakeholder contributions and is revisited in later chapters. Hammedi *et al.* (2017) researched the use of game mechanics in healthcare provision (2017, p.641). Their contribution draws upon existing theories of motivation, by interpreting Self-Determination Theory (Deci and Ryan, 1985, p.35) combined with theory specific to the healthcare domain (2017, p.654). It shows how existing theories may be conceptualised differently in the context of a new medium of interaction such as gamification, validating the approach taken by this thesis. Finally, Baxter *et al.* (2016) studied the application of gamification to organisational compliance training. Whilst making a contribution to knowledge by conducting a novel study they do not base this on a conceptual framework or existing theory, making their contribution harder to conceptualise. Hence, this thesis replicates the effective theoretical approach taken by both Hammedi *et al.* (2017) and Leclercq *et al.* (2018). A broader review of these papers can be found in the appendices.



In order to further define and cement this contribution, the research was preceded by a pilot study, as recommended by Bryman (2016, p.261) amongst many others (Oppenheim, 1992, p.48; van Teijlingen and Hundley, 2001, p.1; Blessing and Chakrabarti, 2009, p.114; Malhotra, Birks and Wills, 2012, p.122). Pilot studies are widely believed to be essential for good quality, cost-effective research (Lancaster, Dodd and Williamson, 2002, p.307; Blessing and Chakrabarti, 2009, p.114; Braun and Clarke, 2013, p.141; Hazzi and Maldaon, 2015, p.60). The pilot study underlined the contribution to be made by this research by identifying three key barriers to stakeholder engagement in SAR: apathy towards the subject matter, lack of time and so-called “information overload”. The study also noted that factors of societal perception (as discussed earlier in this chapter) and the brand values of the organisation were key motivators toward increasing stakeholder engagement in SAR data. These findings provide insight into what key factors need to be addressed in order use gamification as a potential technique toward increasing the engagement of stakeholders in SAR data. This practical application of knowledge in the professional domain underpins the key purpose of a professional doctorate and is discussed in the following section of this chapter.

### **Contribution to Practice**

This thesis makes a significant contribution to practice in three specific ways: it solves a practical problem for a real-world organisation, it contributes to the practical promotion of responsible business and makes a valuable contribution towards the quest for a global standard in Sustainability Accounting and Reporting (SAR) data. Each contribution will be explored in the following paragraphs of this section.

Firstly, this research aims to create new knowledge in the areas of gamification, the understanding of stakeholder behaviour online and how new approaches may improve the effectiveness of SAR data. This contribution to knowledge can be applied in a practical context to solve a real-world problem for an organisation through the analysis of data, subsequent recommendations and practical applications of prototypes described in chapter three. This organisation, “Responsible 100” (R100) is a for-profit, social business based in London who form a “community” of stakeholders, investors and organisations to help businesses achieve responsible, ethical growth (Responsible 100, 2020, [online]). As explored in the first section of this chapter, R100 aim to achieve this through multiple approaches including face-to-face “round-table” meetings where best practice and business

challenges are discussed (Responsible 100, 2016, [online]) to refine and develop a series of question sets which aim to allow businesses to “map” and “score” their performance against multiple categories (Responsible 100, 2017b, [online]). This “roundtable” approach in SAR has been successfully utilised by organisations such as the Global Reporting Initiative (Thurm, 2006, p.327), and was felt to be an effective way to survey opinion and conduct research into SAR.

R100 faces a specific challenge in engaging stakeholders in the online element of their value proposition. It is currently working to develop new mobile applications and seeking novel ways of engaging stakeholders of all types in responsible business and consumer behaviour. The problem experienced by R100 is backed up by research by Bradford *et al.* (2017, p.86), who suggest that businesses who effectively engage with stakeholders on a wide variety of subjects outperform those who do not. In addition, Gray (2006, p.810) argues that a more “engaging” form of SAR is required, and Manetti (2011, p.112) cites engagement and dialogue with stakeholders as a critical element of SAR – all of which affirm the contribution to be made by this research. Understanding the perceptions of stakeholders towards such approaches, what barriers there are to their engagement and how to apply the knowledge created from the execution of this research will contribute to solving this problem.

Secondly, the new knowledge created by this research into gamification in the domain of SAR improves the practical promotion of responsible businesses and services by making SAR processes more effective. Through the robust research design articulated in chapter three, the knowledge can be generalised and applied in other domains across all sectors. It is hoped that this attention on “better” products will encourage organisations to invest in improving production and governance standards within their organisations and encourage consumers to make purchasing choices which are better for society, not just suited to individual needs. Whilst some research acknowledges a disconnect between SAR data and stakeholder views and interests (Bradford *et al.*, 2017, p.83), it is largely felt that greater involvement in such processes from stakeholders can bring significant benefits to both organisations and stakeholders of all types (Manetti and Toccafondi, 2012, p.365). At present, this information is not measured using a global standard, making it difficult for consumers to access and process when making choices, as they can with, for example, the more widespread food-labelling systems used in the United Kingdom. This problem

underpins the third contribution to practice to be made by this research: a contribution towards an eventual global standard for SAR data.

Whilst there are many measurement standards, indexes and bodies who “regulate” this area, the complexity and multi-faceted nature of organisational performance and SAR data means that a common standard has been difficult to adopt (Hubbard, 2009, p.178).

Organisations such as the Sustainability Accounting Standards Board (Sustainability Accounting Standards Board, 2016, [online]), the Global Reporting Initiative (2018, p.2) the International Organisation for Standardisation’s (ISO) ISO-26000 (International Organization for Standardization, 2018, [online]) and ISO-14000 (International Organization for Standardization, 2018, [online]) standards promote reporting frameworks, and indices such as the Dow Jones Sustainability Indices (S&P Global, 2018, [online]) promote responsible investing. Notwithstanding this, a reliable, common, applicable SAR standard has yet to be adopted on a widespread basis (Visser, 2015, p.78; Morioka and Carvalho, 2016, p.123), with all current initiatives being on a voluntary basis (Bradford *et al.*, 2017, p.84).

Whilst it is acknowledged that research alone cannot “solve” such a “wicked problem” (Beinecke, 2009, p.2), this research aims to create a broader and deeper understanding of what is important to stakeholders with respect to SAR data, utilising both the power and popularity of social media in business (Swani, Milne, Brown, Assaf and Donthu, 2017, p.77) and the unrelenting positive trend of internet adoption (Internet Society, 2016, p.32), scope and scale (Internet Society, 2017, p.50) to raise the profile of the concept. The findings of this thesis are generalisable to multiple sectors and therefore contribute to the quest for a more effective global standard for SAR data.

In summary, this thesis made a powerful contribution to practice by aiding in the solution to a problem experienced by a real-world business, Responsible 100, as well as making positive contributions to practical problems in marketing responsible business and the lack of a common standards in SAR data at a global level. Improving such standards contributes to positive pressure on organisations to become more sustainable to win and retain customers (Walker and Visser, 2015, p.10) contributing to global progress on sustainability. This was discussed in more detail in the sections of this chapter addressing contributions made by this thesis.

The introductory chapter of this thesis has so far introduced the reader to the background and underpinning philosophy of this research. It also clarified the aims and objectives, provided definitions for key terms and summarised the contributions to both knowledge and practice that is made by the research. The following closing sections position the researcher within the context of the research and provide an overview of the structure of the document.

### **The Researcher**

Reflexivity at all stages of the research process is important to help highlight, discuss and understand how the influence of the researcher affects the execution and interpretation of the research and its findings (Bryman, 2016, p.388). The professional doctorate programme for which this thesis was submitted included specific modules on reflective practice, and supporting reflective statements were submitted at all stages of the process, in line with standard practice (Banerjee and Morley, 2013, p.177). Accordingly, at appropriate points throughout this thesis reflective sections were included to form a focal point for these reflections and their implications. Consequently, it is useful to understand a brief overview of the researcher's professional experience. This serves to provide context for these reflections and their influence on the underpinning philosophy of this research (Lynch, 2000, p.29), as outlined earlier in this chapter.

The researcher has had wide and varied professional experience in the software and technology domain, delivering technology solutions to the insurance and financial services sector. Over twenty years the researcher has worked in different aspects of the value chain for software delivery, starting as a software developer working within Microsoft-based technologies. This progressed over time to management and director roles in software development, project delivery, operations, compliance, and strategy. As discussed in the opening sections of this chapter, this experience has framed the philosophy that underpins this thesis: that technology can be used to affect change and deliver significant value to difficult and complex social issues, or so-called "wicked problems" (Beinecke, 2009, p.2). This experience will exert an influence on the way in which the researcher seeks solutions, designs the research and addresses the objectives of this thesis. It is these influences that will be addressed in the aforementioned reflective sections contained in chapters three and five.

The final section of the chapter provides a short overview of the structure of this thesis to enable the reader to easily navigate the document.

### **Structure of this Document**

This document is structured into five subsequent chapters. The next chapter reviews academic and practitioner literature pertinent to the research question and objectives. The aim of this chapter is to highlight the research gaps, validate the question and lay the foundations for the design approach. This design approach forms the basis of chapter three, which first outlines the philosophical foundations for the research, and then details the procedures by which data was collected and analysed, including the ethical implications of the design. The data collected using the design articulated in this chapter is then presented in chapter four, providing summary information, breakdowns of results and presenting initial key discussion points and highlights from the data collected. These discussion points are then drawn together in chapter five. This penultimate chapter first explores the discussion areas, then explores the limitations of the research design. A section validating the contribution to both knowledge and practice against that set out in this chapter follows, before sections addressing suggestions for future research in both theoretical and practical terms close that chapter. The thesis is then summarised in a concluding, sixth chapter.

## **CHAPTER TWO - LITERATURE REVIEW**

### **Overview of Chapter**

This chapter addressed research objective one with a critical review of academic literature, research and practitioner discourse. The chapter is structured to reflect the definitions of key themes identified in chapter one: Sustainability Accounting and Reporting (SAR) and gamification, including associated concepts of engagement.

The review first addresses the current state of research in SAR, by exploring the history of SAR and providing case-based examples to illustrate the challenges in the domain. This is followed by explorations of the benefits, issues and critiques relating to SAR in the academic literature before identification of research gaps and a section summary. A similar approach is taken in following sections on “Gamification and Engagement”. These two sections are followed by an explanation of the theoretical underpinnings adopted by this thesis, before a final summary section concludes the chapter.

### **Sustainability Accounting and Its Reporting**

This first section of the chapter reviews literature on Sustainability Accounting and Reporting. The chapter starts with the history and importance of the topic of SAR to provide essential background and context.

### **The Origins of Sustainability Accounting and Current Standards**

The origins of modern Sustainability Accounting and Reporting (SAR) date from the 1960s in Europe, and the 1970s in the United States (Brockett and Rezaee, 2013, p.27). The origins of SAR practice in the form we recognise it today lie in the 1980s, closely following the publication of the now seminal Brundtland Report (Brockett and Rezaee, 2013, p.28; Valdes-Vasquez and Klotz, 2013, p.80; Bebbington and Larrinaga, 2014, p.397; Lock and Seele, 2015, p.114; Tschopp and Huefner, 2015, p.568; Schaltegger, Etxeberria and Ortas, 2017, p.113). Whilst the research agenda for SAR has a varied history, dating from the 1970s, pioneering work by Gray and Bebbington (2001) is acknowledged as the genesis of academic literature on modern approaches to SAR (Lamberton, 2005, p.7).

## Introducing Sustainability Accounting

The process of disclosure through SAR is designed to encourage organisations to consider and contribute towards a more sustainable future for society. Whilst organisations have long been expected through legislation and by shareholders, to produce reports and statements of financial performance (Tschopp and Huefner, 2015, p.568), additional information concerning the implications of an organisation's operational impacts on both people and the planet (Daub and Karlsson, 2006, p.558; Mook, 2006, p.283) is now a feature of business management that is both expected (Schaltegger, Bennett and Burritt, 2006, p.14; Herremans *et al.*, 2016, p.417; Lueg, Lueg, Andersen and Dancianu, 2016, p.20) and publicly demanded (Fink, 2020, [online]).

The United Nations Sustainable Development Goals (SDGs) provide a widely-recognised set of clear objectives for businesses, building on the principles of sustainable development contained in the Brundtland Report (United Nations World Commission on Environment and Development, 1987, p.16). The SDGs provide guiding principles of responsible and sustainable behaviour in business (The United Nations, 2018, [online]). The sheer depth, breadth and number of goals highlight both the scale of the problem and the inherent challenges faced by reporting on progress in these areas (Gray and Bebbington, 2001, p.18; Lamberton, 2005, p.18).

As is evident from the number of SDGs and the challenges of categorisation, there is a challenge to be overcome in choosing an approach that balances both the need to provide granular detail in reporting, and the tendency of management reporting to over-reduce and over-simplify. This has resulted in a lack of standardisation within SAR (Guthrie, 2016, p.6), and the common practice that reporting is broadly separated into economic, environmental and social performance categories (Lamberton, 2005, p.11). Many of these various methods are grounded in the seminal "Triple Bottom Line" (TBL) concept of reporting on economic, ecological and social considerations (Lamberton, 2005, p.13; Lueg *et al.*, 2016, p.22). This is also sometimes referred to as "people, profit and the planet", as defined by Elkington (1999, p.73). Whilst, TBL approaches themselves are critiqued in some quarters (Milne and Gray, 2013, p.14), the concept has historically aided holistic thinking in business and widened the horizons of practitioners. Lamberton (2005) traces the roots of the TBL back to the Brundtland Report, in particular highlighting how that report links poverty to

environmental degradation (United Nations World Commission on Environment and Development, 1987, p.12). This single linkage alone reinforces the criticality of holistic reporting on all three aspects of the TBL (Gray and Bebbington, 2001, p.11).

SAR is a complex, multi-disciplinary area (Lamberton, 2005, p.14) fraught with issues in measurement (Lamberton, 2005, p.18; Eccles, Krzus, Rogers and Serafeim, 2012, p.69), traction (Gray and Bebbington, 2001, p.17; Herremans *et al.*, 2016, p.421), legitimacy (Laufer, 2003, p.255; Buhr, Gray and Milne, 2011, p.59; Schreck and Raitchel, 2018, p.748) and relevance (Lamberton, 2005, p.20; Maas, Schaltegger and Crutzen, 2016, p.240) all of which will be explored in this chapter. Debates will no doubt take place in organisations as to where ownership lies for any such complex, multi-disciplinary problems. Gray and Bebbington (2001) amongst others (Schaltegger *et al.*, 2006, p.3; Ballou, Casey, Grenier and Heitger, 2012, p.266), place accountants and the discipline of accountancy at the heart of SAR because they believe accountants are: “centrally implicated in the declining health of the natural environment and thus – and should – do something about it” (2001, p.13). Whilst this research does not aim to conduct a detailed literature review of technical accounting approaches to SAR, a grounding in the origins of SAR was felt important to understanding the evolution and future of this area.

Reviewing a brief history of SAR it is self-evident there is much debate as to how effective, representative and useful the process is in practice (Gray and Bebbington, 2001, p.17; Lamberton, 2005, p.14, 2005, p.8; Buhr, 2011, p.58; Milne and Gray, 2013, p.14; Fonseca, McAllister and Fitzpatrick, 2014, p.77; Guthrie, 2016, p.6). However, there are many benefits of SAR that warrant discussion. These will be addressed in the following section.

### **The Benefits of Sustainability Accounting and Reporting**

This section examines perceived benefits of Sustainability Accounting and Reporting (SAR) from a review of academic literature in this area. Accordingly, perceived benefits are grouped under three broad categorisations addressed in consecutive sections: improved relations with stakeholders, the impact on corporate performance and the lack of alternative approaches.



## **Improved Stakeholder Relations and Information Exchange**

Research by Burke and Clarke (2016), based on data collected from a panel discussion of SAR experts (2016, p.275) identified three key organisational benefits of SAR, many of which are validated by other research and literature. Firstly, SAR information enables a better understanding of value creation both internally and externally, resulting in better decision-making and greater innovation (Visser, 2011, p.207; Burke and Clark, 2016, p.275). It is self-evident that decisions informed with greater depth of information are likely to be improved, providing the focus is correct. Focus can be achieved by the volume of information being appropriate (not overwhelming), well summarised and clearly defined for the audience (Burke and Clark, 2016, p.278).

Secondly, Burke and Clarke's (2016) research noted from multiple participants that the act of producing the reports is a cross-departmental process likely to lay the foundations for improved internal collaboration (2016, p.276) and reducing "silo mentality" (2016, p.276). Research has also found that effective engagement with stakeholders during the process of SAR improves the quality of the reporting (Manetti and Toccafondi, 2012, p.365), which is in turn essential to effective responsible behaviour by organisations, according to Freeman (2010, p.252).

Thirdly, creating and disseminating SAR information can: improve corporate relations through streamlining the disclosure process (Lopes and Coelho, 2018, p.399), improve stakeholder engagement in business affairs through improved dialogue (Freeman, 2010, p.246; Freeman *et al.*, 2010, p.190; Manetti and Toccafondi, 2012, p.365) and create efficiencies by preparing "pre-packaged" disclosures useful for other purposes, such as shareholder resolutions or litigation (Burke and Clark, 2016, p.276). Research by Dhaliwal *et al.* (2012) supports external SAR disclosures improving the "information environment" (2012, p.752) for investors and improving forecast accuracy for financial analysts and assisting in the review of their portfolios. There is also evidence of early indications of positive market reactions and increased valuations achieved through effective disclosures in some markets (Vitolla, Raimo and Rubino, 2019, p.523). Market forces also play a considerable role, as the transparency enforced by disclosures creates competition between suppliers to achieve improved results. Visser (2011) describes this as the consumer acting as a "proxy" to "spur the industry to push the envelope on sustainability"

(2011, p.302), despite acknowledging that ultimately, this may achieve no results if the consumer “doesn’t care” (2011, p.302).

Equally, stakeholders and business leaders of all types are increasingly applying pressure for general accountability on sustainability issues (Lueg *et al.*, 2016, p.22; Santos *et al.*, 2018, p.96; Fink, 2020, [online]), of which SAR forms a key part. Not only this, but SAR can help contribute to a basis for a constructive and structured discussion between competing groups of stakeholders. SAR allows management teams to explain the complexities and trade-offs to both parties in a neutral, well-informed manner.

### **Impact on Corporate Performance?**

Much has been written relating to perceived links between effective sustainability management and corporate financial performance (Aupperle, Carroll and Hatfield, 1985, p.446; Margolis and Walsh, 2001, p.1; Wang, Dou and Jia, 2016, p.1084). Research and arguments both in favour of neutral or positive associations between social, environmental and financial performance (Ullmann, 1985, p.542; Waddock and Graves, 1997, p.314; Visser, 2005, p.18; Porter and Kramer, 2006, p.82; Eccles, Ioannou and Serafeim, 2014, p.2835; Khan *et al.*, 2016, p.1716, 2016, p.1699; Bradford *et al.*, 2017, p.86) and issues or refutations of this view (Friedman, 1970, p.122; Ackerman, 1973, p.89; Aupperle *et al.*, 1985, p.462; Lamberton, 2005, p.11; Churet and Eccles, 2014, p.62; Chiarini and Vagnoni, 2017, p.439; Santos *et al.*, 2018, p.96; Vitolla *et al.*, 2019, p.523) are abundant. The objective of this review is not to address this question, rather to consider the extent to which effective SAR detracts or contributes to the debate.

Effective SAR disclosures and processes underpin how an organisation’s approach to sustainability is communicated to all stakeholders (Lopes and Coelho, 2018, p.399), and research by Bradford *et al.* (2017, p.86) suggests that businesses who effectively engage with stakeholders on a wide variety of subjects outperform those who do not. Whilst engaging in SAR itself does not have a direct influence over the sustainability (or otherwise) of organisations, there is an argument that the very act of implementing the processes necessary to implement effective monitoring and disclosure mechanisms may indirectly influence both sustainability and financial performance in a positive way. For example, an organisation implementing SAR may experience indirect benefits through: improving

forecasting accuracy (Vitolla *et al.*, 2019, p.525), better risk management (Ballou *et al.*, 2012, p.269), engendering competitive advantage and value through integrated thinking associated with well-executed SAR (Porter and Kramer, 2006, p.80; Churet and Eccles, 2014, p.57), improved resource allocation (Waddock and Graves, 1997, p.306; Ballou *et al.*, 2012, p.266) and the creation of incentives for sustainable behaviour (Soyka, 2013, p.2). The process of SAR alone is clearly not enough, though, despite the words of Gray and Bebbington (2001) who state that “environmental management is inextricably linked to business management” (2001, p.1), sustainable practices need to be fully embedded into associated management decision-making and corporate culture to be effective and add value (Maas *et al.*, 2016, p.239). If this is not the case, it could be argued SAR becomes a form of “greenwashing” (Laufer, 2003, p.255; Visser, 2011, p.91; Bradford *et al.*, 2017, p.86). This adds weight to the argument for a form of independent assurance in organisational SAR (Freeman *et al.*, 2010, p.253; Ballou *et al.*, 2012, p.266).

The process of SAR at the very least provides structures and frameworks for comparison of trends, both between organisations and in society at large (Visser, 2005, p.39; Schaltegger *et al.*, 2006, p.20). The process may also focus management attention on any underlying problems to varying degrees (Flower, 2015, p.12), which, once addressed, may potentially exert a positive influence on financial performance. Churet and Eccles (2014) even go as far as to say that good quality SAR is a “useful proxy for the overall quality of management” (2014, p.56), argued on the basis that the integrated thinking it creates within an organisation is a positive benefit. This is in spite of their exploratory analysis not finding a subsequent link between integrated sustainability practices in organisations, and subsequent improved financial performance (Churet and Eccles, 2014, p.62). This seems contradictory, and as Churet and Eccles (2014) acknowledge, warrants further investigation.

As trends in sustainability are difficult to measure and quantify in the short term, the objectives of SAR become necessarily long-term. This means that a link between SAR and financial performance will always be challenging to explore in normal research timelines, and an absence of any perceived link may be explained in part by this (Churet and Eccles, 2014, p.63; Vitolla *et al.*, 2019, p.523, 2019, p.523). As such, a short-term, performance-framed view of critical sustainability issues is probably neither appropriate nor effective. In the context of what many believe to be a real and present emergency, should any

stakeholder really be too concerned about a short-term view of value? This question forms the basis of the final perceived benefit to be explored in this section of the chapter.

### **Is There Any Alternative?**

There is little alternative to paying attention to the “climate emergency” and the “choice” is indeed stark. Whilst it cannot be definitively proven that Sustainability Accounting and Reporting (SAR) in recent decades has in some way lessened the climate emergency, it certainly has not worsened it, despite the varied critiques discussed in this chapter (Gray, 2010, p.47).

Despite recent surges in news coverage, public awareness and heated discussion (Extinction Rebellion, 2018, [online]; BBC News, 2019h, [online], 2019i, [online]) the climate emergency is far from a new or surprising concept (Gray and Bebbington, 2001, p.12) and few can legitimately deny its existence or importance (Nickell and Roberts, 2014, p.80; Egan, 2019, p.799; Ripple, Wolf, Newsome, Barnard and Moomaw, 2019, p.969). Some SAR approaches attempt to place a value on so-called “environmental capital” which historically has focussed attention on this problem across society, business and academia (Lamberton, 2005, p.7). Whilst debates are commonplace around if it is possible to “value” environmental impact (Lamberton, 2005, p.8) in this way, or how effective the popular approach of reporting and “offsetting” impact is (Gray, 1994, p.33), the act of reporting on environmental impacts itself cannot be considered a detrimental exercise. How we reach a common understanding on impact and how we act on the reported data is the challenge facing society – this thesis asserts better engagement by stakeholders in this process can only be a benefit.

There is, of course, much more to modern SAR than simply environmental impact assessment and mitigation. Whilst the use of a pure “accounting” lens to consider the wide complexity of issues now encompassed by SAR, as advocated in seminal work by Gray and Bebbington (2001) may now be outdated, the concept of reporting and understanding the associated costs and impacts owes much to this financial heritage. It could be argued SAR would not make the impacts detailed in preceding sections were it not for early seminal research emanating from accounting academics.

This historical focus on environmental issues (Guthrie, 2016, p.3) approached from an accounting perspective (Lamberton, 2005, p.7) subsequently broadened to include employee, social and governance-related reporting (Buhr *et al.*, 2011, p.53; Tschopp and Huefner, 2015, p.573), striving to instil principles learned from the accounting discipline. This emphasis deepened over time to include further aspects such as: due diligence in supply chains to combat issues such as modern slavery (Stevenson and Cole, 2018, p.82), investment practices (Brockett and Rezaee, 2013, p.29), pay differentials (BBC News, 2019g, [online]) and wider reporting into the United Nations Sustainable Development Goals (United Nations Global Compact, 2018, p.4). There can be little doubt that sharing and acting on authentic information about these aspects of organisations is in the wider public interest. That said, there is some debate in research about how to define the public interest (Nickell and Roberts, 2014, p.81) and this must be borne in mind given the competing perspectives of stakeholders, noted earlier in this chapter.

## **The Reality of Sustainability Accounting and Reporting**

This section examines issues and critiques from the literature surrounding Sustainability Accounting and Reporting (SAR) and is categorised under three broad headings: difficulties in measurement, lack of standardisation within SAR and lack of stakeholder engagement in SAR.

### **The Difficulty of Measurement**

One of the most challenging areas of Sustainability Accounting and Reporting (SAR) relates to difficulties in measuring and reporting sustainability itself. Aside from the fact that reporting at organisation-level is in itself a challenge (Gray, 2010, p.48), the question facing business and academia is: how does SAR proliferate into a global approach and what difference (if at all) will this make to addressing issues relating to “people, profit and the planet” (Elkington, 1999, p.73)? This issue is distinct and separable from other problems relating to lack of standardisation, which are to be addressed in the following section of this chapter. This challenge relates purely to difficulties and issues in measurement (Waddock and Graves, 1997, p.304; Ballou *et al.*, 2012, p.281), choice of units (Lamberton, 2005, p.14; Schaltegger *et al.*, 2006, p.9) and weighting of importance attributed to individual elements of economic, social and financial reporting (Lamberton, 2005, p.13).

Whilst the majority of sustainability-related non-financial issues are challenging to measure or “price” in a numerical fashion (Lamberton, 2005, p.14; Maas *et al.*, 2016, p.239), there are also well-documented issues and critiques with purely economic measures such as Gross Domestic Product (GDP). Visser (2005) writes that even the major proponents of GDP acknowledge that it is widely thought to be an inadequate measure of national or societal welfare (Kuznets, 1934, p.7; United Nations Development Programme, 1999, p.129; Visser, 2005, p.40). By implication, a purely financial statement should therefore not be viewed as an adequate measure of organisational performance.

To attempt to address this imbalance, the most common approach within SAR is to use accounting techniques as a basis (Lamberton, 2005, p.14) to estimate environmental or social impacts and group, assess and present these under so-called “indicators”. This quantification process, whilst a practice historically accepted in environmental science (Lamberton, 2005, p.11), is flawed, especially in the current technological environment,

with all its associated options and processes available to practitioners. It forces the reporting organisation to quantify social and environmental effects, for which there are no common measurement standards and no truly objective ways of prioritising their impacts (Lamberton, 2005, p.13). This confusion over measurement and prioritisation means any subsequent attempts to offset various impacts can lead to confusing and ineffective trade-offs and debates about materiality (Mackey and Sisodia, 2013, p.168; Flower, 2015, p.8). The challenge is heightened by the complexity of structures and diversity of functions in modern organisations (Keeble, Topiol and Berkeley, 2003, p.150), especially those within the departments responsible for reporting such activity and quantifying its “value”. It becomes difficult to see how SAR can make contributions to solving important social issues without somehow addressing this critique.

The oft-discussed concept of “value” is itself vague and difficult to define. It is a challenge to ascertain the beneficiaries of value given possible tensions in sustainability issues between the organisation and society (Nickell and Roberts, 2014, p.81; Flower, 2015, p.5). These inherent tensions are between the social and economic elements of SAR which make up “value” (Crane, Palazzo, Spence and Matten, 2014, p.132) meaning it can be testing to define what social performance means (Schaltegger *et al.*, 2006, p.10). Thus, the real value may be in the aspirations (Gray, 2010, p.48) and about the qualitative and contextual data arising from SAR, rather than the pure numerical or quantitative reporting itself (Lamberton, 2005, p.20). This debate and collaboration across divisions within an organisation is one of the perceived benefits of SAR. This, like many strengths, also has a downside in that key dependencies may be put on teams such as the finance team (Ballou *et al.*, 2012, p.266), who may be conflicted or resource-constrained and could potentially make mistakes. Flower (2015) highlights serious deficiencies in accurate reporting of incidents in SAR disclosures, with nearly 70% of reports reviewed in a survey conducted by Boiral (2013, p.1047) found to be missing key disclosures (2015, p.12). This further builds the case for co-creation of SAR data with external stakeholders (Keeble *et al.*, 2003, p.157) as proposed by this research.

### **Standardisation does not come as Standard**

As discussed in previous sections, the complexity and multi-faceted nature of issues relating to sustainability presents many challenges to the effectiveness of Sustainability Accounting

and Reporting (SAR). Perhaps the most significant of these is the lack of common standards in both measurement and reporting (Lamberton, 2005, p.18; Porter and Kramer, 2006, p.81; Ballou *et al.*, 2012, p.266; Flower, 2015, p.10; Tschopp and Huefner, 2015, p.566; Guthrie, 2016, p.6) despite significant demand articulated throughout the literature (Lamberton, 2005, p.14; Herzig and Schaltegger, 2006, p.314; Hubbard, 2009, p.177; Buhr *et al.*, 2011, p.66; Visser, 2015, p.78; Guthrie, 2016, p.8; Maas *et al.*, 2016, p.240).

The widely agreed most common standards (Buhr *et al.*, 2011, p.62; Global Reporting Initiative, 2013, p.12; Tschopp and Huefner, 2015, p.566) are provided by: The Global Reporting initiative (Lamberton, 2005, p.11; Schaltegger *et al.*, 2006, p.24; Maas *et al.*, 2016, p.240; Global Reporting Initiative, 2018, p.2), AccountAbility (2018, p.12), ISAE 3000 (International Auditing and Assurance Standards Board, 2013, p.8) and the United Nations (Brockett and Rezaee, 2013, p.29; United Nations, 2016, [online]). These extent standards all have different merits and drawbacks, a detailed analysis of which is outside the scope of this review, however a key issue remains that is relevant to all of them: a lack of mandatory independent assurance or audit (Visser, 2015, p.71; Morioka and Carvalho, 2016, p.123; Bradford *et al.*, 2017, p.84). The standards in most cases only provide a framework for organisations to formulate their responses and self-regulate (Schaltegger and Burritt, 2006, p.45) and any enforcement or external assurance is for the most part voluntary (Eccles, Krzus and Watson, 2012, p.161; Brockett and Rezaee, 2013, p.31; Morioka and Carvalho, 2016, p.123), with a far-flung few exceptions (Burke and Clark, 2016, p.274; Lueg *et al.*, 2016, p.21; Lopes and Coelho, 2018, p.400). The standards also need to be underpinned by a reliable set of indicators as a baseline (Keeble *et al.*, 2003, p.157; Thurm, 2006, p.331) to allow consistency and the ability to compare performance over time (Thurm, 2006, p.332). Historically, this has not always been the case, and standardisation in the absence of any sort of mandatory, independent assurance or auditing is also likely to be ineffective (Eccles *et al.*, 2012, p.162).

Approaches to independent assurance in most cases, where utilised, are carried out by accountancy firms in the same way as traditional financial audits (Herzig and Schaltegger, 2006, p.314). The current approach to assurance is flawed because there are no underpinning standards, common approaches or quality assurance on the auditors themselves. It is also a challenge for a potential auditor to validate both the data presented in the report and the underlying processes in such a complex subject area (Cheng, Green,



Conradie, Konishi and Romi, 2014, p.99). Research by Flower (2015) found that a significant number of independently assured sustainability reports were “seriously defective” raising “grave doubts” about the effectiveness of assurance processes (2015, p.12). This lack of quality, albeit in a small sample size, supports the views of other authors who are concerned that frameworks do not provide sufficient detail and context to be effectively audited in the same way as purely financial statements (Cheng *et al.*, 2014, p.99). This also serves as a reminder that SAR disclosure is not yet mandatory on a wide scale (Visser, 2015, p.71; Walker and Visser, 2015, p.10; Bradford *et al.*, 2017, p.84; Chiarini and Vagnoni, 2017, p.440), with only isolated (yet increasing) examples of mandatory disclosures for certain types of organisation (Porter and Kramer, 2006, p.80; Burke and Clark, 2016, p.274; Lueg *et al.*, 2016, p.21; Lopes and Coelho, 2018, p.400).

Notwithstanding the issues in standards and standardisation within SAR, there *are* alternatives. These include: challenger reports, which are commissioned to constructively critique sustainability practice in organisations (Herzig and Schaltegger, 2006, p.315), the use of social media (Manetti and Bellucci, 2016, p.986) and tools such as WikiRate (2015, [online]), discussed earlier in the chapter, acknowledging concerns about assurance and reliability of data online (Gray and Bebbington, 2001, p.256). There are also applications such as Giki (Giki Social Enterprise Ltd., 2020, [online]) which promote sustainable consumption choices through barcode scanning, but these are not yet integrated into wider online commerce or supply chain solutions. This thesis asserts that, whilst embryonic, these methods or a combination of key elements from these methods hold promise, however none address the issue of standardisation, which continues to be one of the biggest challenges in the future direction of SAR.

This research is concerned with stakeholder engagement in the ensuing debate about the information presented in SAR, and what barriers exist to creating this engagement, which the limited research conducted to date has shown to be lacking (Dunfee, 2006, p.323; Kaur and Lodhia, 2018, p.339; Rawhouser, Cummings and Marcus, 2018, p.264; Kaur and Lodhia, 2019, p.10). The problems underlying this lack of traction and engagement will be discussed in the following section of this chapter.

## **Lack of Traction and Engagement**

It is widely acknowledged in the literature that there is a lack of practitioner and stakeholder engagement in the process, standards and output of Sustainability Accounting and Reporting (Gray and Bebbington, 2001, p.17; Burritt and Schaltegger, 2010, p.836; Searcy and Buslovich, 2014, p.159; Kaur and Lodhia, 2018, p.339; Rawhouser *et al.*, 2018, p.264; Kaur and Lodhia, 2019, p.10). These underlying issues within Sustainability Accounting and Reporting (SAR) were born out by the findings of the pilot study conducted towards this research. However, it is also evident that stakeholder engagement alone is unlikely to be the complete solution to the problems (Kaur and Lodhia, 2019, p.3), “buy-in” from top-level management is essential otherwise SAR output can tend toward “greenwashing” (Visser, 2011, p.91), or fall prone to lack of internal engagement (Burke and Clark, 2016, p.277). In the few cases where progress is reported (Shields and Shelleman, 2017, p.12) this is likely to be one-way involvement rather than true engagement, interaction and action (Marbach, Lages and Nunan, 2016, p.504; Kaur and Lodhia, 2019, p.3).

Manetti and Toccafondi (2012) conducted a study into how stakeholders are involved in the production of SAR in organisations adopting the GRI standard. They concluded that, despite increasing popularity of stakeholder engagement in the production of SAR, it was not possible to comment on how much of this was true mutual “dialogue”, and there were still significant barriers to its effectiveness (Manetti and Toccafondi, 2012, p.374). The exploration of these barriers to engagement is a central objective of the research of this thesis. The barriers can be categorised into two broad headings: practical problems and philosophical challenges. The following paragraphs will explore these headings in order.

Considering practical issues relating to managing sustainability is a challenge (Buhr, 2011, p.57) leading to many of the practical barriers to engagement discussed in the previous section. The subsequent lack of standardisation and uniform ways of measuring sustainability (Waddock and Graves, 1997, p.304; Keeble *et al.*, 2003, p.150) make this a difficult area in which to generate interest, engagement and maintain motivation (Searcy and Buslovich, 2014, p.156). The necessarily long term nature of the issues explored and timeframes involved in sustainability issues add to the challenge (Lamberton, 2005, p.11; Vitolla *et al.*, 2019, p.523), combined with the difficulty in managing the financial cost of

sustainability and its subsequent impact on short term profitability (Schaltegger *et al.*, 2006, p.10).

This long term “lens” for viewing the problems makes it difficult to determine impact from any initiatives implemented directly due to, or as a result of, SAR output. Milne and Gray (2013) challenge the impact of “triple bottom line” reporting (2013, p.14) based on the impracticality of synergistic approaches and a lack of long-term behavioural influence directly attributable to SAR. Detractors of such synergistic solutions, however, believe that only enforcement via legislation will make SAR effective (Bowen, 1953, p.227; Buhr, 2011, p.58) and cite concerns over misuse of information published through SAR for anti-competitive means, dubious practices or “greenwashing” (Lamberton, 2005, p.13; Visser, 2011, p.91).

Whilst global public opinion may be persuasive and wide-reaching, there are still significant portions of the global population that do not have internet access, electricity or that suffer from literacy challenges (Visser, 2005, p.132). Despite the increased penetration of the internet (Visser, 2005, p.169; Bolton and Saxena-Iyer, 2009, p.91; Blazevic, Wiertz, Cotte, Ruyter and Keeling, 2014, p.87; Internet Society, 2017, p.32) any dissemination of SAR, or supporting engagement techniques that rely primarily on the internet, obviously face a practical barrier to engagement or access to data in this area (Bryman, 2016, p.191). There is a cruel irony that financial poverty is often a direct barrier to internet access, creating the so-called “digital divide” (Vincent, 2016, p.606) and subsequent “information poverty” (Chatman, 1996, p.197) as a consequence.

When considering the philosophical barriers to stakeholders engaging in SAR, the fulcrum of the debate hinges around tensions between views of the organisation and society. Flower (2015) describes this as a “division” between idealism and realism (Flower, 2015, p.15) and goes on to suggest that SAR is based on assumptions which are at odds with the capitalist views of the firm, but more aligned to alternative approaches such as the stakeholder view of the firm (Flower, 2015, p.13). These “alternative” options are those such as “Conscious Capitalism” (Mackey and Sisodia, 2013, p.32) or “Certified B Corporations” (B Labs, 2018, [online]) the latter of which a part of the certification framework includes elements of SAR standards (Shields and Shelleman, 2017, p.13). In the

face of rising public interest in re-thinking capitalism and addressing perceived inequalities (Jack, 2019, [online]), it is likely that more attention will be focussed on such alternatives.

This barrier to engagement is a symptom of the inherent tension between sustainability or the Freeman (2010) stakeholder approach and the “classical” Smith (1937) and Friedman (1970) views of business (Key, 1999, p.318; Gray and Milner, 2004, p.73; Buhr, 2011, p.58; Jahn and Brühl, 2018, p.43): to pursue the desire of maximising shareholder interest and profit, within basic societal norms and laws (Friedman, 1970, p.122). Whilst Clause 172 of the Companies Act within United Kingdom legislation requires directors to “have regard” for the interests of society (U.K Government, 2019, [online], p.1), the practical reality is that this is carefully worded to ensure it holds a subordinate position to the primary interests of the shareholders. Despite what some have observed as being a shift in the literature away from shareholder towards stakeholder-centric views of the organisation (Jahn and Brühl, 2018, p.43), there is little evidence as yet of increased engagement in SAR as a result.

Whilst the academic literature and (to an extent) management discipline acknowledges the importance of SAR, and social movements like the “Blue Planet Effect” (BBC News, 2018a, [online]) and Extinction Rebellion (2018, [online]) are making a positive contribution to the wider public’s psyche around the environmental aspects of sustainability, there remains much to be done. Many organisational leaders still believe a “cultural tipping” point where stakeholders fully engage in sustainability has yet to be reached (Visser, 2011, p.334).

### **Section Summary and Research Gaps**

In this section, a position on this debate will be articulated, defended and backed with research gaps identified from the relevant academic literature in order to further build the case for this research.

It is evident from the literature reviewed for this section of the chapter that despite considerable promise, Sustainability Accounting and Reporting (SAR) is, in the main, not delivering on this vision. That said, this thesis asserts that the combined power of social media, the internet, social movements and public opinion to create momentum, coupled with engagement techniques from the gamification domain could greatly enhance the chances of success for SAR (Visser, 2011, p.207).

Accordingly, this summary section will aim to articulate why engagement in SAR is important, what future initiatives and techniques might be employed and where the current research gaps lie.

### **Why Engagement in Sustainability Accounting and Reporting Matters - Who Cares?**

So far in this literature review chapter, this thesis has presented the various arguments from the literature relating to the issues, potential benefits and drawbacks of Sustainability Accounting and Reporting (SAR). This section aims to summarise four key reasons why engagement by stakeholders in SAR matters, backed by arguments from the literature already explored as part of this chapter.

Firstly, this thesis asserts that stakeholders and society as a whole need to be concerned with sustainability in business. Few can justifiably argue that global sustainability is not a concern for both society and business, and it is certainly not a new concept (Gray and Bebbington, 2001, p.12; Nickell and Roberts, 2014, p.80; Egan, 2019, p.799). Public awareness, contentious debate and activism is rising (BBC News, 2019i, [online], 2019d, [online]) ultimately making this a key issue of concern and direct impact for consumers of products and services (Bocken, Allwood, Willey and King, 2011, p.1279; BBC News, 2019a, [online]). As a direct consequence of the acknowledgement of the importance of sustainability in business, stakeholders of all types are interested in how this sustainability is monitored and managed. The literature reviewed indicates that stakeholders demand improved SAR from organisations (Schaltegger *et al.*, 2006, p.14; Thurm, 2006, p.331; Herremans *et al.*, 2016, p.417; Lueg *et al.*, 2016, p.20; Santos *et al.*, 2018, p.96), it is acknowledged as important for our shared future (Schaltegger *et al.*, 2006, p.6; Walker and Visser, 2015, p.22; Visser, 2017, [online]; Ngu and Amran, 2018, p.3; Kaur and Lodhia, 2019, p.5; Romero, Ruiz and Fernandez-Feijoo, 2019, p.222), it will better position organisations for “survival” in the future (Visser, 2005, p.182) and it is essential for responsible behaviour (Freeman *et al.*, 2010, p.252). Hence, organisations need to be concerned with SAR.

Secondly, this thesis supports the argument that improved engagement with stakeholders in general brings multiple positive benefits to organisations. It is also an essential element of effective SAR (Chiarini and Vagnoni, 2017, p.442). It can positively impact corporate performance by: improving decision-making, diversity of opinion, broadening

understanding of value creation (Burke and Clark, 2016, p.275), aiding holistic thinking (IIRC, 2015, [online]), establishing cross functional discourse within organisations and improving relationship management (Freeman, 2010, p.246), all of which ultimately create positive reputational and market impact (Dhaliwal *et al.*, 2012, p.752; Tschopp and Huefner, 2015, p.569; Lopes and Coelho, 2018, p.401). Hence, organisations will likely benefit from effective engagement with their stakeholders.

Thirdly, the value created by engaging in the process of SAR offers benefits beyond the core purpose of the reporting. These benefits come from the collaboration, critical analysis, sense-making, debate and consideration that arise from the process (Lehman, 1999, p.239; Bebbington and Gray, 2001, p.583; Keeble *et al.*, 2003, p.151; Lamberton, 2005, p.13; Searcy and Buslovich, 2014, p.167; Flower, 2015, p.12; Egan, 2019, p.799). It has been evidenced by some research that financial analysts actively use information obtained from SAR as an important parameter in their recommendations for investments in stocks (Dhaliwal *et al.*, 2012, p.752; Lopes and Coelho, 2018, p.401), as it can be seen as a proxy for the quality of management in an organisation (Churet and Eccles, 2014, p.56). Working toward solving so-called “wicked problems” (Beinecke, 2009, p.2) can also unlock creativity in management teams bringing further multiple benefits. Hence, engaging in SAR has second-order effects which help organisations improve their performance.

The final reason relates to the viewpoint of this research: that technology can and should be used for the wider benefit of society. This research is an application of this philosophical approach in practice: applying technology to an area where existing practice could be improved for the benefit of wider society. As suggested by Dhaliwal *et al.* (2012) in their recommendations for future research, non-financial disclosures improve the effectiveness of the information environment in general (2012, p.752). This thesis asserts that this sentiment should be reflected to the application of technology in general. By researching how technology impacts stakeholder engagement in critical issues of sustainability, ripple effects outside of the SAR domain may be felt. The stakeholder perspective is well summarised by Freeman *et al.* (2010), recognised by many as the authority on stakeholder matters: “one important direction accounting researchers could take is the development of reporting practices and standards that are genuinely stakeholder-friendly” (2010, p.141). This thesis asserts technology provides a valuable ally in the fight to solve so-called “wicked problems” (Beinecke, 2009, p.2) and should be considered a significant part of the solution

(United Nations World Commission on Environment and Development, 1987, p.16; Bolton and Saxena-Iyer, 2009, p.91).

Having established why engagement in SAR is an issue of importance for organisations, it is important to consider current SAR research gaps, a topic addressed in the following section.

### **Research Gaps**

There are multiple research gaps identified through review of literature in the areas of Sustainability Accounting and Reporting (SAR). This section addresses those specific to the domain of SAR, where gaps identified tend to fall into two main categories relating to: engagement and effectiveness.

Firstly, engagement gaps are those this thesis considers affecting why, how and to what degree stakeholders engage in SAR. Research gaps are identified by Gray (2006, p.810), who argues for a more “engaging” form of SAR, supported by others (Manetti and Toccafondi, 2012, p.365). Other authors have found an absence of research evidence relating to: engagement with stakeholders in the SAR domain (Manetti, 2011, p.112), engagement practices (Kaur and Lodhia, 2018, p.339), reasons behind lack of engagement (Rawhouser *et al.*, 2018, p.264) and potential impact on decision-making (Cheng *et al.*, 2014, p.100). Grushina (2017) suggests that researching how social media affects stakeholder engagement is a “timely research agenda” for the future (2017, p.380), in her paper focussing on stakeholder engagement in the Global Reporting Initiative’s SAR guidelines. The involvement of external parties in SAR is a way of both mitigating lack of stakeholder engagement and potentially improving the accuracy of data collected. This is highlighted as a research gap or issue of concern by multiple authors (Keeble *et al.*, 2003, p.157; Global Reporting Initiative, 2013, p.6; Maas *et al.*, 2016, p.238). However, interestingly, research into the effectiveness of the accounting function to allow stakeholders to influence organisational agendas to date has to date yielded mixed findings (Baker and Schaltegger, 2015, p.264). This thesis asserts that the use of technology can help coordinate, centralise and maximise this impact, addressing this concern.

Hoffman and Lutz (2015) highlighted research gaps surrounding the use of social media as a tool for stakeholder engagement (2015, p.165) and made recommendations for research

into how stakeholders might engage with corporations online (2015, p.171). This viewpoint is supported in research gaps identified by multiple other authors. Vernuccio *et al.* (2015), suggest that the majority of existing social media engagement research is limited to individual interactions between brands and consumers (2015, p.707), rather than groups of stakeholders. Thurm (2006) cites the use of software as key to improving the effectiveness of selected reporting initiatives (2006, p.330), and the more general use of software within sustainability is cited as key in the seminal Brundtland Report (United Nations World Commission on Environment and Development, 1987, p.16). As social media becomes more and more integrated into everyday life and our home devices and software packages, these comments can only increase in relevance and impact.

Secondly, effectiveness gaps are those this thesis considers affecting the output, process, impact and success (or otherwise) of SAR. Multiple authors cite research gaps surrounding the effectiveness of SAR as a tool, either for reasons of accuracy (Lamberton, 2005, p.10), effectiveness (Lopes and Coelho, 2018, p.401), external impact (Cheng *et al.*, 2014, p.100) or lack of evidence surrounding benefits and drawbacks (Lopes and Coelho, 2018, p.399). Lamberton (2005) suggests that accounting for environmental factors is “at its exploratory stage” (2005, p.10), with both the accuracy and potential usefulness of this information “needing to be tested with further theoretical and empirical research.” (2005, p.10). Lamberton (2005) proceeds to approach the subject of SAR from four different principles in his discussion paper (2005, p.7) and provides a theoretical framework (2005, p.17). Whilst this paper does not reflect changes and developments in this area in the last decade, the historical review of literature is helpful (Lamberton, 2005, p.8). In an area sparsely populated with specific theory or conceptual models, the framework Lamberton (2005, p.17) makes a contribution to filling the void. There is, however, limited consideration of stakeholder involvement, engagement or feedback processes. Given that the primary purpose of the model is “to measure organisational performance toward the objective of sustainability” (Lamberton, 2005, p.18), and that feedback from stakeholders is critical to effective SAR (Kaur and Lodhia, 2019, p.5) and continuous improvement in general, this is somewhat surprising. The aforementioned lack of external validation and input is likely to devalue the effectiveness of any positive sustainability impact and, once again, weights the trend toward “greenwashing” (Visser, 2011, p.91).



Lopes and Coelho (2018) identify a research gap surrounding the comparison of the effectiveness of different standards in SAR (2018, p.400) after providing a summary of research areas already covered in research on integrated reporting (2018, p.401). Lopes and Coelho (2018) target their research on geographic and firm-level characteristics and content of disclosures made by firms using the International Integrated Reporting Council (IIRC) standard for integrated reporting (2018, p.398). Whilst they make a useful contribution by satisfying their research objectives, and acknowledging its limitations (Lopes and Coelho, 2018, p.422), they do not focus on what elements of standards engage or disengage stakeholders, or how subsequent impacts on engagement and interest in SAR might influence its effectiveness. The lack of research on the differences between the various diverse SAR approaches and their subsequent effectiveness (Chiarini and Vagnoni, 2017, p.439) makes it difficult to articulate a baseline for measuring effectiveness, which is likely to exacerbate the problem.

The aim of this research is to draw together technology, stakeholders and SAR literature to understand gaps and design research to deepen knowledge and increase practical impact in this area. This makes a contribution to address the wider gap in “joined up” research integrating multiple aspects of practice within this domain (Maas *et al.*, 2016, p.238).

### **Section Summary**

The largely voluntary practice of SAR can be traced back to the 1960s but developed into its modern recognisable form in the 1980s, when seminal writers in this area began publishing research largely centred on the accounting discipline. The underpinning subject matter of sustainability is of course a complex, multi-faceted challenge, which is reflected in the practice of SAR.

These challenges to an extent overshadow the significant potential benefit that SAR could provide to both business and society. There are many potential realisable benefits to effective SAR which include: improved stakeholder relations, improved internal collaboration, creative thinking, transparency, process efficiency, subsequent impacts on corporate performance and a means to combat the climate emergency.

However, there are significant issues to address before these aspirational aims can be realised. This thesis asserts that SAR is currently under-delivering on the significant potential benefits that it offers, for three key reasons: difficulties associated with measurement, a lack of standardisation, and most significantly, there is a lack of stakeholder engagement in the practice, leading to a lack of traction and progress for the practice of SAR.

The importance of SAR should not be underestimated – principally because business needs to be concerned about sustainability. Whilst the link between sustainability and corporate performance is and will continue to be widely debated, there are multiple fringe benefits associated with effective SAR including: improved cross-functional decision-making, broader understanding, better collaboration, transparent debate and critical analysis of the practice of management.

This thesis asserts that SAR needs to be accessible, engaging, accurate, immediate and convenient for stakeholders in order to be successful. The combined power of social media and the internet to harness stakeholder discourse and interaction, coupled with techniques from existing practice could contribute to achieving this. One possible option for addressing these barriers is to use the technique of gamification, the subject of the next section of this chapter.

### **Gamification and Engagement**

This section of the literature review chapter examines gamification supported by the foundations of engagement, participation and motivation. Gamification is proposed as a possible technique for increasing engagement in the domain of Sustainability Accounting and Reporting as summarised in the research question posed by this thesis.

### **History and Conceptualisation of Gamification**

The first section addresses the origins, history and evolution of gamification as a concept.

## Origins and Definitions of Gamification

Gamification concerns itself with the application of game “mechanics” such as badges, scores, league tables or resource and time constraints into “non-game” contexts (Deterding *et al.*, 2011, p.13, 2011, p.12; Robson *et al.*, 2015, p.412; Robson *et al.*, 2016, p.36; Cardador *et al.*, 2017, p.354; Liu *et al.*, 2017, p.1013; Kim, 2018, p.27; Landers *et al.*, 2018, p.322; Deterding, 2019, p.131). It is acknowledged that the underpinning techniques or components it utilises are by no means “new” (Bogost, 2014, p.75; Froehlich, 2014, p.564; Walz and Deterding, 2014, p.1; Cardador *et al.*, 2017, p.353), but are rather a combination of existing approaches and techniques (Bogost, 2014, p.69). The concept of rewards in “non-game” contexts has a rich and varied history dating back as early as the nineteenth century (Smith, 2014, [online]).

Essentially, gamification involves applying all such game-based “mechanics to the non-game concepts to increase engagement, interactivity, focus, productivity or improve communication, through a “fusion of human nature and skilful design”, as succinctly summarised by Werbach and Hunter (2012, p.9). Designs for gamified solutions build on the key tenets of games: a “game space” with boundaries, goals / rules, feedback and artefacts (Gray *et al.*, 2010, p.2; Adamou, 2019, p.45). The application of such structures and rules define the main difference between the unstructured concept of “play” and the more formal concept of “games” (Woodcock and Johnson, 2018, p.543), with some authors suggesting the latter constrains creativity whereas the former encourages it (Bogost, 2014, p.72; Hung, 2017, p.60). Such perceived benefits are felt to have emerged from the popularity and success experienced in the video games domain, which have led to organisations attempting to utilise such engagement techniques in the business context.

Despite this apparent interest, the research agenda is perceived to lag behind practical applications of gamification, despite encouraging early evidence of emergent frameworks beginning to be published (Hamari *et al.*, 2014, p.3030; McDaniel and Fanfarelli, 2016, p.93; Robson *et al.*, 2016, p.36; Armstrong and Landers, 2017, p.514; Leclercq *et al.*, 2018, p.83; Seiffert-Brockmann, Weitzl and Henriks, 2018, p.68; Thorpe and Roper, 2019, p.597). This makes gamification research a fertile area for research toward professional doctorates.

## Conceptualising Gamification

Conceptualising gamification and defining its scope is a significant challenge for three main reasons. Firstly, gamification is a complex, multi-faceted concept (Suh *et al.*, 2017, p.269). This makes it difficult to isolate the cause of changes in observed outcomes, given they may be caused by: the game elements, the gamification process itself or other indeterminant factors (Hamari *et al.*, 2014, p.3026; Suh *et al.*, 2017, p.269) such as short-term interventions (Bogost, 2014, p.69). Secondly, the context of a gamification application wields significant influence on the potential outcomes. For example, a “game” or “non-game” context varies dependent on the perspective of the player and the context of the game (Deterding *et al.*, 2011, p.12), with some taking the postmodern-leaning perspective that the context itself is defined by the player themselves (Huotari and Hamari, 2017, p.25). Equally, even if a definition, context and applicable element can be agreed and isolated, it is difficult to correlate and measure what and how specific elements of such a design have influenced behaviour or outcomes (Deterding *et al.*, 2011, p.14; Huotari and Hamari, 2017, p.25). Finally, and perhaps most significantly, there is much ambiguity and debate about what gamification actually *is* and how it should be applied (Deterding *et al.*, 2011, p.12; Burke, 2014, p.6; Vesa and Harviainen, 2019, p.129; Yen, Mulley and Burke, 2019, p.140).

This inherent heterogeneity has led to an absence of theories specific to gamification, despite the rising research interest in the topic (Growth Engineering, 2016b, [online]; Yen *et al.*, 2019, p.142), so varied alternate theoretical underpinnings from parallel domains are often used within the literature. The theories most commonly drawn upon in the literature relate to motivation, engagement and behaviour (Lowry *et al.*, 2013, p.624; Shen, Yu J.H. and Rees Ulmer, 2013, p.684; Hamari *et al.*, 2014, p.3030; Baxter *et al.*, 2016, p.122; Cardador *et al.*, 2017, p.354, 2017, p.356; Hammedi *et al.*, 2017, p.654; Suh *et al.*, 2017, p.270; Suh and Wagner, 2017, p.420), social and psychological theory (Froehlich, 2014, p.567; Linehan, Kirman and Roche, 2014, p.101; Cardador *et al.*, 2017, p.355; Liu *et al.*, 2017, p.1018) as well as marketing and organisational behaviour theory (Huotari and Hamari, 2012, p.17; Robson *et al.*, 2015, p.414; Huotari and Hamari, 2017, p.24; Liu *et al.*, 2017, p.1017; Veltsos, 2017, p.199). This diverse base of theories further highlights the case for better academic exploration of gamification.

This case is further supported by three justifications articulated by Trittin, Fieseler and Maltseva (2019). In their essay on the use of gamification in CSR communication they reference extant research in comparable domains to make several points (Trittin *et al.*, 2019, p.141). These are that gamification can: increase interest, simplify complex topics (which can be daunting for stakeholders to engage in due to their sheer size and scale), increase learning potential and motivate “players” to engage. For this reason, many organisations have adopted gamified techniques in multiple contexts including: Microsoft (2012, [online]) who created a gamified solution for global participants to assist them in improving the quality of Windows messages in multiple languages (Werbach and Hunter, 2012, p.19; Dal Sasso, Mocci, Lanza and Mastrodicasa, 2017, p.261). Others take a community focus such as “Beat the Street” (Intelligent Health Ltd., 2016, [online]), which offers rewards to encourage families to walk to school (Coombes and Jones, 2016, p.64).

To effectively understand how gamification attempts to engage and motivate users in concepts, it is necessary to have a basic orientation in the underpinning theories in those areas. As such, these will be addressed in the following section of this chapter.

### **Fundamentals of Engagement, Participation and Motivation**

Much literature has been written and research conducted in the areas of engagement, participation and motivation. As such it is not the purpose of this section to review this literature in depth. Rather, it aims to address the fundamental principles and place them in context so as to orient the reader in the general theoretical bases and establish suitable background.

#### **Engagement**

Engagement is a multi-faceted and complex area capable of spanning multiple disciplines (Hollebeek, Glynn and Brodie, 2014, p.152). Literature in this area can be viewed and has been explored from multiple perspectives, including behavioural, psychological, marketing and information systems (Appleton *et al.*, 2006, p.428, 2006, p.429; Chan, Zheng, Cheung, Lee and Lee, 2014, p.84; Hollebeek *et al.*, 2014, p.150; Cheung, Shen, Lee and Chan, 2015, p.242; Mpinganjira, 2016, p.3).

The foundations of literature concerning online engagement can be found in marketing literature, in particular relationship marketing theory (Brodie, Hollebeek, Jurić and Ilić, 2011, p.253; Chan *et al.*, 2014, p.83; Dessart, 2017, p.381). According to Marbach *et al.* (2016), the term “customer engagement”, whilst a relatively novel concept dating from 2005 onwards (2016, p.503) continues to be of significant interest to researchers (Brodie *et al.*, 2011, p.252; Dessart, 2017, p.376) . Engagement is considered to be a two-way process, and as such differentiates itself from other more unilateral concepts within the literature such as “involvement” and “participation” (Marbach *et al.*, 2016, p.504; Dessart, 2017, p.380). Zaichkowsky (1985) defines “Involvement” as “a person's perceived relevance of the object based on inherent needs, values, and interests”, summarised as: making an engagement relevant to a person so that they take action upon it (1985, p.342). The counterpoint to this is the so-called “value-action” gap as described by Devinney, Auger and Eckhardt (2010), a concept especially pertinent to this thesis. In their experiments, Devinney *et al.* (2010) found that consumers made ethical choices only when prompted by staff in the coffee shops (2010, p.51). Visser (2011, p.201) in support this notes that effective situational communication can “nudge” consumers to make ethical choices, in line with the findings of (Devinney *et al.*, 2010, p.51). The Devinney *et al.* (2010) experiment, however, occurred nearly a decade before the aforementioned seismic shifts in consumer perceptions triggered by factors such as the “Blue Planet” effect. It is therefore questionable as to whether the same results would be found if the experiment were run again now.

A wide body of literature discusses three key “dimensions” which constitute online engagement: cognitive, affective and behavioural (Appleton *et al.*, 2006, p.429; Marbach *et al.*, 2016, p.503; Dessart, 2017, p.377; O'Brien, 2017, p.2809; Seiffert-Brockmann *et al.*, 2018, p.70). Cognitive engagement is the mental activity of becoming “absorbed” in online content to the exclusion of other tasks (Appleton *et al.*, 2006, p.429; O'Brien and Toms, 2008, p.938; Dessart, 2017, p.375; Suh *et al.*, 2017, p.269), with the “depth” of this engagement a significant theme (O'Brien, 2017, p.2809). Affective engagement relates to the feelings experienced during the process such as enthusiasm, interest or a sense of belonging (Appleton *et al.*, 2006, p.429; Vernuccio *et al.*, 2015, p.708; Dessart, 2017, p.377). Behavioural engagement relates to the activities or outcomes that arise from the interaction, for example sharing, learning or interacting with SAR data (Appleton *et al.*, 2006, p.429). Historically, research has concentrated on affective responses, followed by

cognitive and then behavioural responses (van Noort, Voorveld and van Reijmersdal, 2012, p.223). The complexity within concepts of engagement highlights a key challenge for research in this area: how to identify which of the many influencing factors may be responsible for any change in behaviour or outcome (Cheung *et al.*, 2015, p.248; Hung, 2017, p.59).

Improved online engagement of customers and stakeholders is thought to produce positive outcomes such as improved organisational performance in areas of sales, cost reduction and profitability (Hollebeek *et al.*, 2014, p.150), trust, attachment, loyalty and commitment (Chan *et al.*, 2014, p.82; Cheung *et al.*, 2015, p.244; Vernuccio *et al.*, 2015, p.707; Dessart, 2017, p.381), knowledge through feedback (Kumar, Aksoy, Donkers, Venkatesan, Wiesel and Tillmanns, 2010, p.303), service improvement (Cheung *et al.*, 2015, p.247), reward and recognition (Chan *et al.*, 2014, p.89), influence of knowledge retention based on media type (O'Brien, 2017, p.2817), community membership (Goodman, Carlson, Kyles and Goodman, 2015, p.205; Vernuccio *et al.*, 2015, p.714) and strategic alignment (Ngu and Amran, 2018, p.3) have been identified through research. The consensus in the literature is that this novel area warrants further investigation, especially due to the wide variety of potential domains, influencing factors and complexity of social research online (Hoffmann and Lutz, 2015, p.165).

## **Motivation**

Motivation is a precursor or antecedent condition to engagement, and as such inextricably linked to the concept (Hollebeek *et al.*, 2014, p.150), but the origins of the underpinning motivations themselves are complex and warrant further discussion.

Consideration of the motivation for an action is described by Deci and Ryan's (1985) seminal "Self Determination Theory" (SDT). This widely-explored theory (Vallerand, 2000, p.312) draws a distinction between motivations for completing a task into two categories: intrinsic and extrinsic (Schaeffel and Clement, 2010, p.22). Extrinsic motivations connect the underlying reasons for completing a task to a tangible, distinct external outcome or reward, such as a financial incentive (Ryan and Deci, 2000, p.55). Intrinsic motivations are by contrast related to tasks which are motivated by reasons of interest, play or learning (Deci and Ryan, 1985, p.32).

Whilst earlier literature suggests that these two fundamental concepts of intrinsic and extrinsic motivation are dichotomous and antagonistic (Hayamizu, 1997, p.98), later works by Deci and Ryan (2000, p.227) and Vallerand (2000, p.313) have broadened classic SDT with additional layers of context. Whilst Vallerand (2000) is in broad agreement with the fundamentals of SDT (2000, p.312), his augmented concept overlays SDT with a hierarchical, contextual model (2000, p.313). The model posits that both intrinsic and extrinsic motivation can exist at the same time, in varying levels depending on individual context (Vallerand, 2000, p.312). Vallerand's (2000) perspective on SDT takes into account personality, contextual and situational factors (2000, p.313) in a hierarchical order of effect (2000, p.314) with interplay and influence between all elements (2000, p.315). The hierarchy and interplay are where Vallerand's (2000) model diverges from SDT, contributing to a more complete model "layering" contexts such as predispositions to specific activities on top of the original concepts of SDT (2000, p.313).

According to Dessart (2017), an individual's propensity to interact with an online community is generally for intrinsic reasons of self-actualisation or self-improvement (2017, p.379). Dessart's (2017) concept could apply to engagement with SAR content online and any subsequent interactions, as this content is generally presented in the same way as forum or online community content such as TripAdvisor (TripAdvisor LLC, 2017, [online]), or review content similar to Amazon Reviewers (Amazon.com, 2014, [online]). However, this generalisation is at odds with the views of Vallerand (2000), Deci and Ryan (2000), Vernuccio *et al.* (2015) and partial findings by Schaedel and Clement (2010, p.27) which advocate a combination of both extrinsic and intrinsic motivational types. This combination of both types of motivation is also supported by the findings of the pilot study conducted for this thesis, where participants indicated predominantly extrinsic motivation as the *initial* reason for their engagement.

Thus, it is reasonable to assume the underlying motivation in SAR data online is a combination of both extrinsic and intrinsic motivations in varying levels at varying stages, in line with Vallerand's (2000) model. This does not mean that these two motivators converge or can ever become "the same", as addressed by Deci and Ryan (1985) in Organismic Integration Theory which implies that extrinsic motivation can become internalised through stages (1985, p.61) but cannot ever become true intrinsic motivation (Ryan and Deci, 2000, p.61). Conversely, it is unlikely that the majority of stakeholders



would contribute to a SAR online initiative purely for “free”. This view is reinforced by a summary provided by Schaedel and Clement (2010, p.22), who challenge the view of earlier research around altruistic behaviour online.

### **Applying these Principles to Sustainability Accounting and Reporting**

An individual’s propensity to interact online with a social community, is a particularly salient influence on the concept of Sustainability Accounting and Reporting (SAR). Motivating stakeholders to engage in this concept, regardless of specific intrinsic or extrinsic motivators, is heavily dependent on the basic principle of their “trait-based predisposition to participate in online interactions” or “proneness to interact online” (Blazevic *et al.*, 2014, p.88). Put simply: innate characteristics of each stakeholder define how likely they are to post online or interact and participate with an organisation, provided they are interested in the product and brand (Dessart, 2017, p.382).

Dessart (2017) found that this concept, conceptualised by them as “Online Interaction Propensity” (OIP) was positively related to community and brand engagement (2017, p.386). It is interesting to note that whilst Vallerand’s (2017, p.382) model utilises a hierarchical structure of motivations, Dessart’s (2017, p.382) OIP concept gives equal weight to the referenced antecedents, as opposed to placing them in a hierarchy. Despite Dessart (2017) identifying the possible use of a hierarchical elements in the brand engagement element of the model (2017, p.390), the existence of hierarchical concepts in extent literature suggest these should be applied to any future theory developed in the context of SAR.

The case for the criticality of stakeholder engagement in sustainability initiatives in business made by those who espouse it is hard to ignore (Burrirt and Schaltegger, 2010, p.836; Manetti, 2011, p.112; Ngu and Amran, 2018, p.3; Rawhouser *et al.*, 2018, p.265; Romero *et al.*, 2019, p.222). However, research findings around stakeholder engagement into the specific business sustainability concept of “offline” SAR by contrast cite a lack of engagement (Gray, 2006, p.810; Manetti, 2011, p.112) and an increasing emphasis on the need to engage stakeholders (Kaur and Lodhia, 2018, p.340), despite the efforts of organisations to showcase the emphasis they place on sustainability (Schaltegger *et al.*, 2006, p.15). Research *has* been conducted into which of the many social media and online

platforms have the most “engaged” users outside of the domain of SAR, measured by key metrics of interaction (Blazevic *et al.*, 2014, p.88; Lin, Lee, Jin and Gilbreath, 2017, p.615) but none of this research was applied in the domain of SAR. This practical application of gamification is the focus of the next section of this chapter.

### **Designing and Applying Gamification in Practice**

A key theme within the literature is the criticality of gamification design and implementation, and the fact that motivation (and subsequent engagement of users) underpins gamification (Cardador *et al.*, 2017, p.354; Hammedi *et al.*, 2017, p.654; Adamou, 2019, p.2; Morschheuser and Hamari, 2019, p.145). Therefore an exploration of the debate on and differences between the simple addition of “game mechanics” and a true ground-up “gameful design” of the desired application (Walz and Deterding, 2014, p.9), with consideration given to motivation techniques is a good starting point to understanding perspectives in the literature.

Figure Two below summarises the concepts which be explored further in the following sections of this chapter, identifying the relationships between inputs, outputs and gamification design characteristics such as complexity and incentives. Designers of gamified experiences may find these perspectives from the literature helpful and should be cognisant of the position of their design within this spectrum in order to achieve appropriate outcomes.

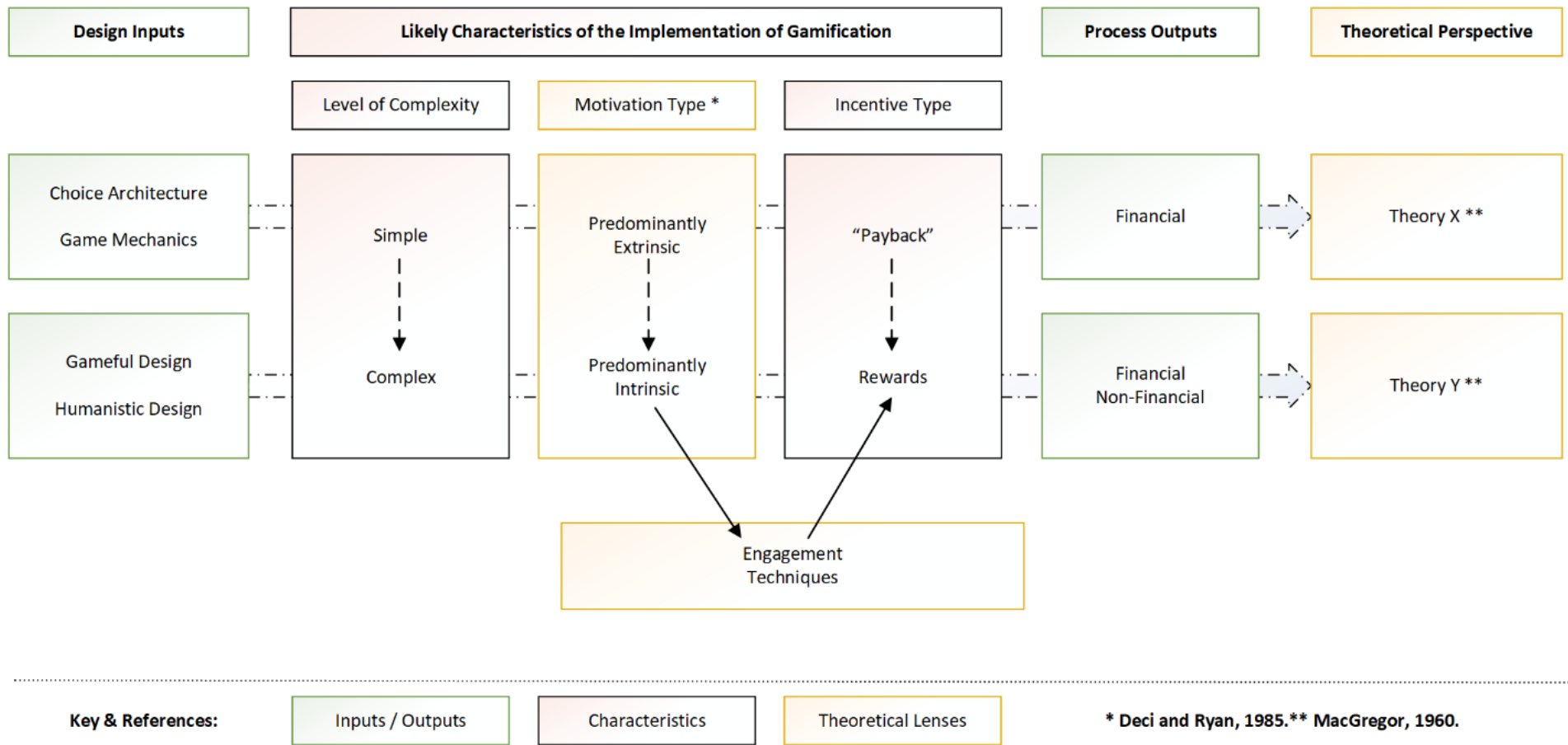


Figure Two – Concepts of gamified experiences

## **Motivation and Design in Gamification**

It is widely agreed in the literature that gamification harnesses primarily (but not exclusively) intrinsic motivation techniques to achieve its objectives (Froehlich, 2014, p.583; Hammedi *et al.*, 2017, p.654). The application of purely extrinsic “incentives” such as loyalty points, pioneered initially by supermarkets (Smith, 2014, [online]) and latterly by airlines in the 1980s (Growth Engineering, 2016a, [online]) are simply “payback” (Burke, 2014, p.30) and should not be considered true gamification. Provision of extrinsic incentives is neither “new”, “unique” or the key innovation within gamification (Bogost, 2014, p.75; Walz and Deterding, 2014, p.1; Robson *et al.*, 2015, p.411; Cardador *et al.*, 2017, p.353). For example, at what point does the use of a badge, leader board or points scheme graduate into a full “gameful design”, or is the use of your own self-representation, such as an avatar, qualified as gamification at any level (Deterding *et al.*, 2011, p.11)?

Successful gamification should go beyond simple extrinsic incentives by building the game elements into the non-game context at a fundamental level, applying intrinsic rewards designed to align the goals of both the context owner and the participating player, and increase mutual engagement in a topic area (Deterding *et al.*, 2011, p.11, 2011, p.12; Froehlich, 2014, p.564; Robson *et al.*, 2016, p.30; Landers *et al.*, 2018, p.317; Deterding, 2019, p.131; Trittin *et al.*, 2019, p.142; Yen *et al.*, 2019, p.140). It follows that those who want to benefit from gamification need to consider the whole design of their application and context rather than simply applying a badge, scoreboard, re-wording questions (Adamou, 2019, p.28) or making an activity “look like a video game” (Burke, 2014, p.8; Vesa and Harviainen, 2019, p.129; Yen *et al.*, 2019, p.140).

### **“Exploratory Sequential Gamification”**

This thesis accepts this viewpoint in many cases, but argues that a purist, all-encompassing gamification design is not always required before any exploratory, innovative application of gamification in a new domain is made. The SAR domain is one such example. This thesis asserts that approaches echoing those used in mixed methods research are a potential solution to this problem.

In the SAR domain, there is little adoption or integration of gamification compared to other more mature domains such as health and fitness or software development (Burke, 2014,

p.39; Froehlich, 2014, p.585; Apple Inc., 2016, [online]; Fitbit Inc., 2016, [online]; Vitality Health, 2016, [online]; García, Pedreira, Piattini, Cerdeira-Pena and Penabad, 2017, p.22; Nike Inc., 2018, [online]). In short, applying the simplistic so-called “points-badges-leaderboards” approach described by Vesa and Harviainen (2019, p.129) in a well-designed research context may leverage initial short term benefits and knowledge. Whilst this may be contrary to some perspectives on “gameful design”, it is an approach which can lay foundations for more mature designs to be implemented at a later date, creating valuable knowledge along the way.

To elaborate further on the differences between exploratory applications of gamification and more integrated designs, useful reference can be found in the work of Deterding (2019, p.132). He describes how his opposing concepts of “Choice Architecture” and “Humanistic Design” are synergistic with McGregor’s (1960) “Theory X” and “Theory Y”, respectively. In his seminal work, McGregor (1960) describes Theory X as promoting a more scientific, constrained, extrinsic reward-driven and controlling management approach based on perceived employee “work avoidance” traits (1960, p.43). Contrastingly, McGregor’s (1960) Theory Y categorises humans as more responsible, imaginative, self-determining and motivated by both intrinsic and extrinsic rewards (1960, p.59). “Choice Architecture” situates gamification as a structured framework of non-monetary incentives for existing, clearly-defined business processes (Deterding, 2019, p.132). “Humanistic Design” by contrast supports an open, creative approach and takes the viewpoint that gamified scenarios should be designed from the foundations upward to align goals and improve processes, even if that involves changing the underlying process itself (Deterding, 2019, p.133).

The implication for the application of gamification to the SAR domain is that an initial “choice architecture” approach to increase engagement may lead to a more “Humanistic” long-term design (Vesa and Harviainen, 2019, p.129). This long-term design may assist in the improvement and potential reinvention of SAR processes to mitigate some of the limitations discussed in the first section of this chapter. This is in spite of (and acknowledging that) a gameful design may be preferable in the long term, but choice architecture may deliver essential, short term data on how a long term design may best be crafted, and is still gamification toward a desired goal (Landers *et al.*, 2018, p.327).

In further support of a flexibility when applying gamification, multiple authors warn against a “one size fits all” approach (Morschheuser and Hamari, 2019, p.146; Vesa and Harviainen, 2019, p.129), suggesting each application of gamification to a different domain should be critically evaluated objectively on its individual merits, without being over-reduced and simplified to the point where it adds no value (Trittin *et al.*, 2019, p.142). Even so-called serious topics, complex problems and multi-faceted issues may benefit from the application of gamification as it can increase interest, alter behaviours and make problem-solving an “everyday” concept (Trittin *et al.*, 2019, p.141; Vesa and Harviainen, 2019, p.128).

In short, this thesis asserts that when applying gamification to a new domain with the objective of increasing engagement in that domain, choice architecture or simple gamification techniques can be used initially in a prototype approach, followed by a more gameful design informed by the knowledge gained from the prototype. This is illustrated in Figure Three below, which builds on Figure Two’s conceptual model to a flowchart detailing how an iterative approach may be used to evolve a design from simple game mechanics into a more complex “gameful design”. This draws on influences from exploratory sequential designs in mixed methods research (Creswell and Plano Clark, 2011, p.86), which are discussed further in the next chapter.

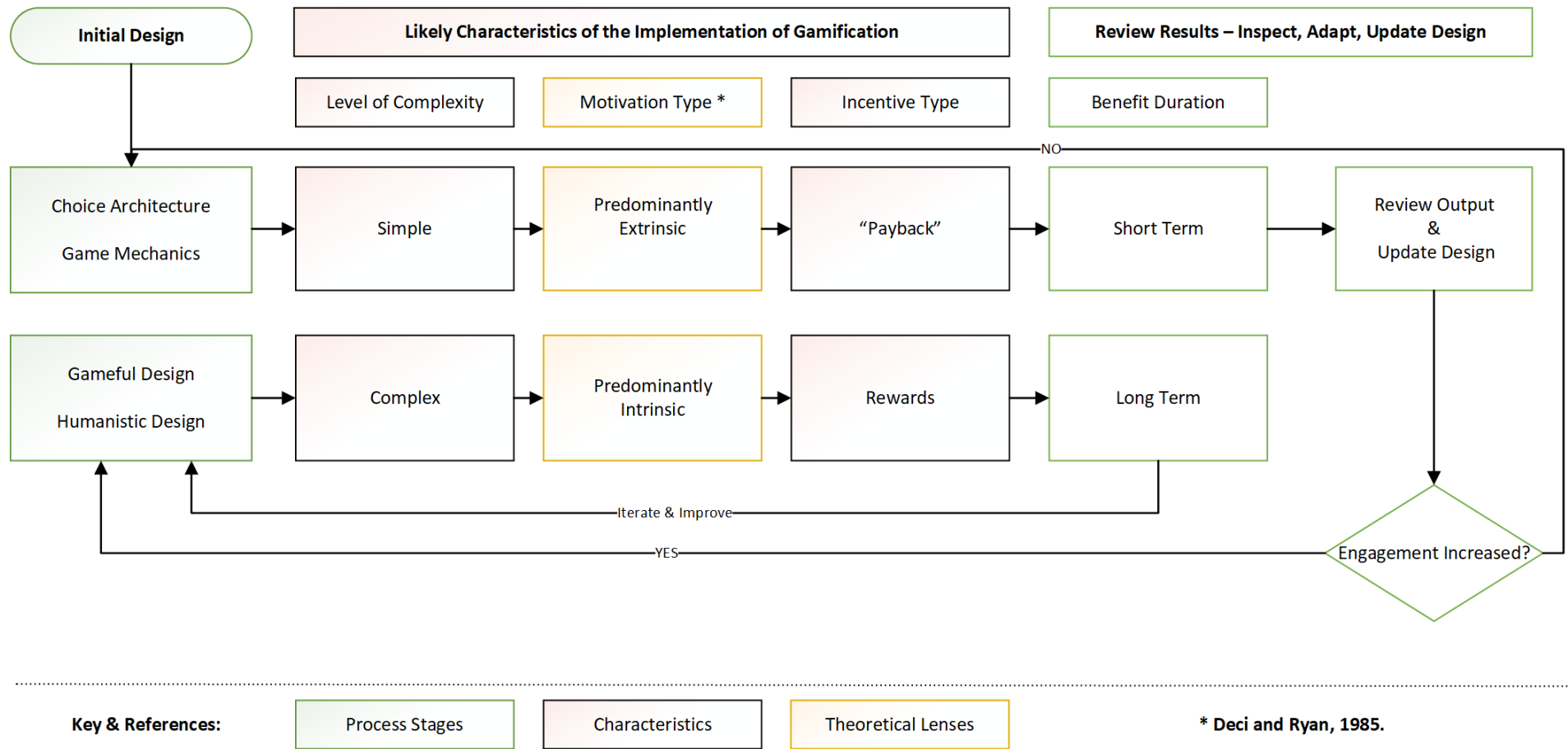


Figure Three – Moving from simple game mechanics to true gamefule design.

## **“Real World” Applications**

Real-world and consumer applications of gamification are widespread in academic literature (Huotari and Hamari, 2017, p.22) and can be found in: research (Bailey *et al.*, 2015, p.18; Adamou, 2019, p.8), training (Baxter *et al.*, 2016, p.120), healthcare (Burke, 2014, p.34; Coombes and Jones, 2016, p.64; Hammedi *et al.*, 2017, p.641; Landers *et al.*, 2018, p.317), e-commerce (Leclercq *et al.*, 2018, p.83), software development (García *et al.*, 2017, p.22), sustainability and wellbeing (Hamari and Koivisto, 2015, p.419). Gamification is also well-documented as being popular for use for internal purposes within organisations, with multiple employee-related examples cited in research, such as (amongst many others): anti-corruption training, sponsored charitable initiatives (Armstrong and Landers, 2017, p.515; Trittin *et al.*, 2019, p.141), employee recognition (Perkbox, 2018, [online]), training (Suh *et al.*, 2017, p.271) and the ubiquitous Microsoft “Language Quality Game” (Microsoft Corporation, 2012, [online]; Werbach and Hunter, 2012, p.19; Dal Sasso *et al.*, 2017, p.261). A plethora of supporting services (Drimlike Ltd, 2015, [online]; Cardador *et al.*, 2017, p.354), platforms and organisations (Goodman *et al.*, 2015, p.200; Sera and Wheeler, 2017, p.158) have evolved to satisfy the growing interest in gamification both in research and in the workplace (Zichermann, 2013, [online]; Huotari and Hamari, 2017, p.23; Trittin *et al.*, 2019, p.141).

The rise in popularity of such supporting services and platforms inevitably means that there is a risk of opportunism, poor quality services and unscrupulous operators invading the domain of gamification. This interesting and well-discussed critique is addressed in the following section of this chapter, alongside other critiques and limitations of gamification.

## **Critiques and Limitations of Gamification**

This section addresses some of the critiques levelled at gamification within the literature, collating them under three broad headings related to: exploitation, misapplication and unintended consequences of gamification.

### **Exploitation, Manipulation and Ethics**

Firstly, and most significantly, a recurring critique of gamification is that it represents a form of exploitation and manipulation of players to exhibit behaviours desired by the



designers of the gamified “experience”. Thus, making it undesirable, unethical and counter-intuitively uncreative. Perhaps the most oft-cited proponent of this is Bogost (2014), who in his short blog post (2011, [online]) and longer chapter (2014) argues two main points in order to reframe the discourse on gamification. Firstly, Bogost (2011, 2014) states that gamification is the use of a design approach to induce, maximise and repeat behaviours desired by the designers (2014, p.70) in the users, employees or customers (Bogost, 2011, [online]; Ruffino, 2014, p.52). Secondly, Bogost (2014) observes that the including the word “game” in “gamification” is deceptive and draws attention away from the manipulation desired by the designers (2014, p.72), echoing the view of Hung (2017, p.60). On this basis, Bogost (2011, [online]) prefers to refer to gamification as “exploitationware” (Bogost, 2011, [online]; Deterding *et al.*, 2011, p.9; Ruffino, 2014, p.52), and would rather employ it as a method of creative problem solving without the perceived controlling elements (Hung, 2017, p.60).

The varied perspectives from which the “Exploitationware” viewpoint is argued range from perceived Orwellian levels of surveillance and manipulation (Hung, 2017, p.60) to suggested exploitation of labour through behavioural manipulation (Kim, 2018, p.27) and even impacts on liberty (Sætra, 2019, p.1). Woodcock and Johnson (2018) discuss the concepts of “gamification from above” and “gamification from below” (2018, p.543), the former being where game techniques are applied to tasks in a manipulative fashion, whereas the latter represents a more subversive, player-driven approach challenging the seriousness of tasks. Further secondary critiques of gamification derived from the “Exploitationware” viewpoint include the underlying capitalist motivations subconsciously indoctrinating players (Goodman *et al.*, 2015, p.202; Woodcock and Johnson, 2018, p.543) and the tendency to reduce and over-simplify complex problems (Trittin *et al.*, 2019, p.142).

Whilst not directly connected to the concept of gamification alone, there are also ethical concerns relating to the “gaming” of the system. These include practices such as fake reviews (Box and Croker, 2018, [online]; BBC News, 2019b, [online]), unethical accumulation, purchase and use of points (Walz and Deterding, 2014, p.6) and promotion of online review services via other social media avenues (BBC News, 2019e, [online]). Clearly, for the integrity and reliability of any gamified solution, designers should consider ways of ensuring their design is moderated, managed and validated to ensure wider support as a trusted platform.

Developing this “Exploitationware” critique further raises the potential for ethical concerns around uses of gamification. Concerns such as unethical surveillance (Hung, 2017, p.60), questionable harvesting of underlying data (Hung, 2017, p.61), abuse of power dynamics in the workplace (Woodcock and Johnson, 2018, p.544), the negative implications of “losing” competitions (Leclercq *et al.*, 2018, p.90) and the effect on jobs or skill bases caused by second order impacts of gamification (Hammedi *et al.*, 2017, p.656). Mitigations such as accreditation schemes (Kim, 2018, p.29), industry codes of conduct and certifications such as those seen in parallel sectors like Cyber Security (National Cyber Security Centre, 2017, [online]) may help here. Additionally, well-considered gamification design (Malone, 1981, p.359; Adamou, 2019, p.7; Deterding, 2019, p.132; Landers, 2019, p.137; Vesa and Harviainen, 2019, p.129) may also assist in addressing some of these critiques. Whilst some of these ethical concerns and mitigations are acknowledged as not specific to the direct application of gamification, they are present due to its introduction in that domain and are therefore inextricably related.

A holistic and critical consideration of all mediating factors influencing the application of gamification is necessary (Woodcock and Johnson, 2018, p.543) in order to form a balanced opinion on whether the application of gamification is exploitative or constructive. These include for example: the context of the domain, the underlying objectives for the initiative, the target player audience, and the philosophical approach of the designer. The latter is particularly salient as the “Exploitationware” debate is underpinned by interplay between philosophical approaches to market structure and marketing approach. Whilst there is an argument that capitalist market structures may benefit from the introduction of “play” (Vesa and Harviainen, 2019, p.128), others advocate different levels of separation and cross-pollination of ideas between “game” and “non-game” (Philippette, 2014, p.191; Woodcock and Johnson, 2018, p.553) or take a view of the concept of marketing as a whole as exploitative (Baudrillard, 2014, p.84).

For example, the objective of this research is to explore barriers to the use of gamification to increase engagement in an area which lacks traction, underpinned by a philosophy and motivation to use technology for the benefit of wider society. This makes its motivations and design approach different to, for example, a loyalty scheme by a retailer or the Microsoft “Language Quality Game” (Dal Sasso *et al.*, 2017, p.261), but more akin to applications of gamification used in the domains of healthcare or training. However, it

would be inappropriate to assume that this research has purely altruistic motives, as a key objective is to promote the production of more responsible products and services, as discussed in Chapter One. This makes the use of gamification in this research similar to many applications which have, if not primary, secondary commerce-related objectives such as sponsorship, adverts or promotions. Indeed, very few applications of consumer technology are truly free of such motives and trappings.

Nonetheless, this thesis asserts a balance can be struck through thoughtful design, especially when the objective of the application itself is to contribute to solving a problem facing society. This viewpoint therefore positions itself at the midpoint of that of Trittin *et al.* (2019), who suggest gamification only serves the “narrow” needs of the designer and not the player or society at large (Trittin *et al.*, 2019, p.142) and that of Woodcock and Johnson who state that no design can be truly impartial (2018, p.545). What is evident is that critiques under the heading of “Exploitationware” are complex, multi-disciplinary and the subject of continued debate which will no doubt influence the conclusions of this review and subsequent research design.

### **Misapplication, Misuse and Misunderstanding**

This topic addresses common themes relating to the misapplication of gamification, and additionally includes literature themes that broadly fit under the headings of misuse and misunderstanding of the concept.

The rising popularity of gamification means it is sometimes viewed as a “fashionable” topic, prone to be a quick “easy” solution for inappropriate problems, which in turn allows potential exploitation of this current popularity (Hamari *et al.*, 2014, p.3026; Robson *et al.*, 2016, p.33; Landers, 2019, p.137; Vesa and Harviainen, 2019, p.129). This topic is also noted by Bogost (2014) who in addition to his critiques in the previous section, adds a scathing critique for the misuse of gamification by consultants (2014, p.66), before continuing to describe it further as a “self-fulfilling solution for non-existent problems” (2014, p.69). Other writers dismiss gamification as either a “fad” (Zichermann, 2013, [online]) or a novel sensation that fades over time (Nobre and Ferreira, 2017, p.359; Trittin *et al.*, 2019, p.142) and suggest that the game elements are not the underlying cause of the behaviour change, favouring instead simple motivation techniques (Sciicluna, 2017,

[online]). Contrastingly, a rebuttal to this argument comes from Adamou (2019), who suggests that gamification as an engagement tool has both purpose and longevity but still agrees that it is not a “quick fix for low engagement” (2019, p.33). Adamou (2019) instead supports arguments made in favour of utilising a strong design, echoed points discussed earlier in this chapter.

The term gamification *itself* causes issues for some writers (Hung, 2017, p.60) as designers may potentially fall victim to an unscrupulous consultant, or look for an easy solution to a particular problem. This trap could for example lead to designers applying only *some* elements of game mechanics to a non-game context resulting in a failed initiative and wasted money and effort. This follows from the design-based arguments covered earlier in this chapter and has led to some authors preferring to suggest the term “Pointsification” as a more appropriate name for gamification. “Pointsification” addresses such scenarios where a simple, blunt, ill-considered, application of a points, badges or leaderboards system to a domain may occur (Werbach and Hunter, 2012, p.105; Bogost, 2014, p.72; Hung, 2017, p.60). As Landers *et al.* (2018) highlight, gamification itself is not the product – it is merely the application of a set of game-based tools to an existing process (2018, p.317), albeit in some cases there is debate about what constitutes such elements (Deterding *et al.*, 2011, p.12). Nonetheless, the act of application requires careful thought and design to be effective in the long term and avoid such misapplications which Landers (2019) refers to as “fake gamification” (2019, p.137).

Poor quality implementations of gamification have no doubt led to failures and subsequent low penetration of gamification business ventures and applications over the years (Zichermann, 2013, [online]; Clancy, 2014, [online]). Results of early empirical research on gamification effectiveness have been found to be mixed (Hung, 2017, p.58). Conversely, the ambiguity around establishing distinct causal and theoretical relationships between gamification interventions and lasting behavioural change (Morschheuser and Hamari, 2019, p.145) means that there *could* be no unified underlying cause for such failures. Theoretically, such failures may all solely relate to poor design! It is likely that, in part, for these reasons gamification has not gained traction in all sectors, for example, CSR communication (Trittin *et al.*, 2019, p.141). Gamification and its tendency to over-simplify issues makes it challenging to apply with good effect to complex problems such as CSR (Vesa and Harviainen, 2019, p.129). This is pertinent to this research as sustainability issues

are almost always so-called “wicked problems” (Beinecke, 2009, p.2), which possibly do not have a “solution”. For example, climate change cannot be easily “solved” and therefore may lead to demotivation or disengagement on the part of stakeholders (Trittin *et al.*, 2019, p.142).

When considering using gamification in such a complex and critical problem area as SAR, or indeed anything related to sustainability, consideration should be given to whether the inclusion of “play” is appropriate or in some way detracts from the serious nature of the problem. This could be literally by over-simplifying it (Trittin *et al.*, 2019, p.142; Vesa and Harviainen, 2019, p.129), making fun of a serious topic or unintentionally influencing the domain through the application of gamification. It is considerations under this heading that are discussed in the following section of this chapter.

### **The Unintended Consequences of Applying Game Mechanics**

As with much research in the social sciences there is a risk that simply by conducting research, creating theoretical constructs or engaging in discourse may unintentionally influence behaviour or outcomes. This concept is known as the “Double Hermeneutic” (Giddens, 1984, p.xxxiii). Klabbers (2018), supported by others (2018, p.361) suggests that truly freeform “play” creates a “triple hermeneutic” whereby the players of the games take control, therefore potentially changing their behaviour and social organisation (2018, p.365). Klabbers (2018) therefore makes the point that by introducing rules, domains and other elements of game architecture that outcomes are constrained and influenced by the design of the game (2018, p.362). This is reminiscent of concepts and philosophical debates discussed earlier in this chapter such as “choice architecture” vs. “humanistic design” (Deterding, 2019, p.132), “gameful design” (Deterding *et al.*, 2011, p.10; Yen *et al.*, 2019, p.140) and “exploitationware” (Bogost, 2011, [online]; Deterding *et al.*, 2011, p.9).

This thesis has already asserted a clear position on this: a balance can be struck through thoughtful and considered design, underpinned by the motivation and context of the application of gamification should be considered during the design. This is in line with the position of Landers (2018) who states that “rigourously designed research can successfully evaluate the outcome of a gamified initiative” (2018, p.318), but contrary to the view of Klabbers (2018). Anything from simple tweaks to an experience, such as the inclusion of a

narrative (Landers *et al.*, 2018, p.317), can influence an outcome. Ultimately, whilst this research strives to evaluate the impact of gamification on engagement rather than influence or control outcomes, the debate between Landers (2018) and Klabbers (2018), augmented by the earlier views of Bogost (2011, [online]) shape a powerful argument for considering the second (and third) order impacts of the research design. This is, of course, an essential element of the requisite rigour expected of doctoral research.

Further unintended consequences of gamification can be found when considering its largely online delivery mechanism. Gamification when delivered through mobile devices or internet-based services, risks social exclusion or disengagement of users with no internet access or limited gaming experience (Visser, 2005, p.172; Baxter *et al.*, 2016, p.130; Deng, Joshi and Galliers, 2016, p.292; Nobre and Ferreira, 2017, p.359; Suh and Wagner, 2017, p.428). This can lead to unintended demographic bias (Baxter *et al.*, 2016, p.123; Nobre and Ferreira, 2017, p.359), gender bias (Spencer, 2013, p.60) or lack of traction (Robson *et al.*, 2016, p.33). Considering potential demographic bias, Adamou (2019) argues that demographic biases are based on a common misconception of the target audience for gamification (2019, p.32). However, this thesis notes that consideration should be given to whether those specifically targeted by a gamification initiative are likely to themselves be predisposed to being “gamers” (Coombs and Holladay, 2015, p.140). This match of target audience and predisposition to engagement is, however, a consideration of the relevant domain rather than of gamification itself. In an increasingly regulated business operating environment, there is also the possibility of user reluctance to share information (Robson *et al.*, 2016, p.33), rendering useless such benefits of gamification highlighted by Cardador *et al.* (2017, p.355).

Finally, the long term implications of gamification interventions are unknown (Hung, 2017, p.59). The objective of this research is to aid long-lasting and valuable behavioural and societal change (Trittin *et al.*, 2019, p.142) over the long term, meaning there is an unknown dimension to consider here. Whilst this is an issue to bear in mind when designing gamification interactions, in all domains, it does not detract from the value of a comparatively short-term gamification intervention to create engagement, a pique in interest and a subsequent “conversation” (Bogost, 2014, p.69). In the modern world, the consequences of social media movements are evident and should not be underestimated,

as referred to in earlier sections of this thesis (Bruns *et al.*, 2013, p.873; BBC News, 2018a, [online]; Extinction Rebellion, 2018, [online]).

### **Section Summary and Research Gaps**

This final section provides a summary of the four key areas discussed within this section of the literature review chapter before addressing current theoretical perspectives and research gaps on gamification in the domain of Sustainability Accounting and Reporting.

#### **Section Summary**

Firstly, definition of gamification and how it influences a domain is problematic. Whilst there are a small number of oft-cited peer-reviewed definitions (Huotari and Hamari, 2017, p.23), debate in the literature exists as to the contexts of “work”, “non-work” and “game”. Further debate is evident around whether gamification employs extrinsic or intrinsic motivation to influence the domain in which it is applied, with the majority of literature favouring intrinsic motivation as the eventual desired state. This thesis broadly agrees with this view but draws attention to the fact that both motivators may be used in parallel to good effect, depending on the context of the application. These rich debates on context and application highlight how gamification is a research field in itself - despite it crossing multiple extent research domains (Deterding *et al.*, 2011, p.10; Morschheuser and Hamari, 2019, p.145).

Secondly, and building on the previous points, a key debate within the field hinges around the extent and depth of the application of gamification to a domain. It is evident from the varied viewpoints within the literature that there is no clear agreement as to how gamification (once defined) is applied. That it not to mention how it influences behaviour once in force and which motivation types it draws upon! The literature provides plentiful examples of both simple and complex applications of gamification. In its simplest form, an application of game mechanics, such as points, badges and leaderboards, to a domain as a motivational tool often yields results. However, the most complex applications involve fully integrated “gameful designs” building on the “game mechanics” approaches by encouraging creativity and innovation in problem-solving, but equally bringing their own limitations.

Thirdly, critiques of gamification are many and varied, and were reviewed and categorised under three headings: exploitation, misapplication and unintended consequences. The most prevalent of these critiques being that of exploitation. Many believe that gamification is simply a behavioural manipulation tool, and that key game components, such as rules and “game spaces”, contribute to this manipulation. Others, however, subscribe to the “free-form” play approach, echoing the previous point concerning application, and reject the manipulation argument. Clearly, significant ethical considerations apply around manipulation, surveillance, control and power, both in the workplace and consumer arenas. This thesis concluded that the objective and context for the gamification exerts a significant influence on to what extent benefit or exploitation is likely to be the outcome.

Finally, the significant research gaps in the application of gamification to the domain of SAR, are explored in the final paragraphs of this section.

### **Research Gaps in Gamification**

The multiple dimensions of behavioural influence exerted by gamification (Hamari *et al.*, 2014, p.3028; Hung, 2017, p.59; Suh *et al.*, 2017, p.269), the growing amount of papers and increasing research interest (Deterding *et al.*, 2011, p.10; Hamari *et al.*, 2014, p.3025; Growth Engineering, 2016b, [online]; Huotari and Hamari, 2017, p.23; Trittin *et al.*, 2019, p.141) all suggest that research into gamification is perceived to be of value (Hamari *et al.*, 2014, p.3030; Robson *et al.*, 2016, p.36; Nobre and Ferreira, 2017, p.359).

Gamification is a popular and nascent research area with most papers dating from 2012 (Woodcock and Johnson, 2018, p.543), the majority of which are interdisciplinary and span multiple epistemological viewpoints (Landers *et al.*, 2018, p.318; Vesa and Harviainen, 2019, p.128). Classical works of sociology, anthropology, and play-related behavioural theories have acted as sources of theoretical inspiration for gamification papers (Vesa and Harviainen, 2019, p.128) but little theory exists on gamification in the Corporate Social Responsibility (CSR) domain (Trittin *et al.*, 2019, p.141). Research gaps relating to the use and application of gamification are identified by multiple authors (Hamari *et al.*, 2014, p.3030; McDaniel and Fanfarelli, 2016, p.93; Robson *et al.*, 2016, p.36; Nobre and Ferreira, 2017, p.359; Suh and Wagner, 2017, p.418; Leclercq *et al.*, 2018, p.82; Berger, 2019, p.667; Morschheuser and Hamari, 2019, p.145; Thorpe and Roper, 2019, p.597). The potential for



gamification to benefit CSR disciplines is further highlighted by Tritten *et al.* (2019, p.143), despite the majority of academic literature in the area of gamification being largely focussed on theoretical concepts rather than practical applications (Hammedi *et al.*, 2017, p.641; Bozkurt and Durak, 2018, p.15). Whilst these research gaps may be largely due to the emergent nature of theory in this domain (Hamari *et al.*, 2014, p.3030; Robson *et al.*, 2016, p.36) organisations still need to understand *how* to potentially use gamification, should they choose to do so, in order for it to provide any anticipated benefits.

It is acknowledged that limited research exists on the impact of gamification in areas such as marketing and research concepts (Robson *et al.*, 2016, p.36; Nobre and Ferreira, 2017, p.350; Suh and Wagner, 2017, p.418), or task efficacy in the workplace (Cardador *et al.*, 2017, p.356) and the multiple other domains identified by Huotari and Hamari (2017, p.22). However no research has to date been identified into the application of gamification to the specific domain of SAR, despite some extent research into gamification within sustainability domains in general (Coombs and Holladay, 2015, p.139; Berger, 2019, p.674; Trittin *et al.*, 2019, p.141). Whilst platforms and applications such as WikiRate (2015, [online]) and Giki (Giki Social Enterprise Ltd., 2020, [online]) apply elements of gamification to aspects of SAR data, no examples of research into these implementations were found.

Based on the literature critically reviewed in this section this review concludes that more research, better evidence and further knowledge in this domain is critical (Suh *et al.*, 2017, p.269). Research on the application of gamification in the domain of SAR will make a strong contribution to filling the research gap in this area. As regularly referred to in this section, the philosophical debates, methods of approach and the discourse on effectiveness of such interventions are, in the opinion of this thesis, inextricably influenced by the objectives and context of the gamification intervention. Therefore, a thoughtfully designed and well-intentioned implementation of gamification into the areas of SAR will no doubt yield significant benefit to knowledge, professional practice and to society as a whole.

### **Theoretical Underpinnings**

So far in this chapter, current literature on Sustainability Accounting and Reporting, gamification and engagement has been critically reviewed. This penultimate section addresses the theoretical positioning of the research, starting with discussion and analysis before a conceptual model to underpin the research in this thesis is presented.

## Stakeholder Theory - Theoretical Background

This thesis adopts “Stakeholder Theory” (ST) to underpin part of the conceptual model shown in Figure Four. In this section, key concepts and critiques of Stakeholder Theory (ST) in the context of this research into Sustainability Accounting and Reporting (SAR) will be discussed. ST encompasses several different approaches to defining and describing the relationships between an organisation and its stakeholders, an area where R.E. Freeman is considered to be one of the seminal writers (Key, 1999, p.319; Phillips, 2003, p.65). Horisch *et al.* (2014) describe and extend the four main types of stakeholder theory as: Descriptive, Instrumental, Normative and Integrative (2014, p.330).

Descriptive ST concerns itself with identifying stakeholders and articulating the approach and philosophy of the management of an organisation. Mapping stakeholders usually takes a similar form to that pictured earlier in Figure One and concerns itself with identifying primary and secondary stakeholders (Donaldson and Dunfee, 1999, p.238; Freeman *et al.*, 2010, p.24) for the purposes of understanding their power and influence over the organisation (Freeman *et al.*, 2010, p.187). Usually, managers can then develop this descriptive approach into Instrumental ST, which considers the effects of understanding and managing the stakeholders described, and how this understanding translates to and contributes toward the achievement of corporate objectives (Freeman *et al.*, 2010, p.190).

Normative ST focuses on managerial behaviour and what is considered morally acceptable (or otherwise) in management decision-making, with respect to stakeholder interests (Jahn and Brühl, 2018, p.46), underpinned by Kantian ethics (Flower, 2015, p.14). Normative ST is “split” into two branches, each with a slightly different focus on models of corporate governance – but each opposed to the running of organisations for the sole financial benefit of shareholders or single stakeholders (Mansell, 2013, p.39), creating obvious tensions between organisations and stakeholders in some cases (Freeman *et al.*, 2010, p.245). Flower (2015) notes that instrumental ST, being focussed on the achievement of corporate objectives (and therefore in his view: profit), is fundamentally at odds with normative ST, which he believes is the only “true alternative” to the capitalistic view of the firm (Flower, 2015, p.14).

Finally, Integrative ST combines all aspects of descriptive, Instrumental and Normative ST considering them all to be inter-dependent (Steurer, 2006, p.58; Horisch *et al.*, 2014, p.330). This thesis recognises Integrative ST as the most complete and suitable version of ST, as it champions the indistinguishable nature of business and ethics (Horisch *et al.*, 2014, p.331), recognises the need for synergy in outcomes (Visser, 2005, p.81), links well with sustainability concepts in management (Horisch *et al.*, 2014, p.331) and aligns with the philosophical approach of this thesis. The use of the Integrative ST perspective is in line with the approach used by Manetti and Bellucci (2016, p.986) and Horisch *et al.* (2014, p.338) in their papers which conducted research in other domains, using methods similar to that used by this thesis. ST is also referenced in other literature as being a central and commonly-used theoretical pillar of research on SAR (Roberts, 1992, p.595; Freeman *et al.*, 2010, p.253; Searcy and Buslovich, 2014, p.152; Lueg *et al.*, 2016, p.22; Lopes and Coelho, 2018, p.401). Full details of the research approach and design will be explored in detail in chapter three.

### **Stakeholder Theory – Discussion and Critiques**

ST situates itself in a complex area of the social sciences (Key, 1999, p.317), where understanding of ethics and the multiple relationships between a business is critical to any theoretical perspective taken (Mansell, 2013, p.138). This means that the critiques of theory in this area are equally complex and nuanced. For example, Freeman's work is often cited as being more conceptual than theoretical, with no real collective agreement on the core principles (Key, 1999, p.321). It is posited that ST lacks key features traditionally expected of a theory, such as linkage of variables, behaviours and observation of their relationships (Key, 1999, p.318). Whilst ST *does* focus on the mapping of stakeholders and examination of their relationships, ST lacks consideration of environmental and systematic influence of a firm's operating environment on its behaviour (Key, 1999, p.322; Hubbard, 2009, p.180). For example, Elkington (1999) introduced the concept of the "Triple Bottom Line" (1999, p.73) to in part mitigate this lack of environmental consideration.

A further key area of debate exists on the various perspectives of ST, and in particular the approach taken when mapping stakeholders: making them "central" to all of the relationships that exist around the organisation (Key, 1999, p.324; van Buren, 2001, p.482). This approach is at odds with subsequent perspectives on the organisation such as

“Creating Shared Value” (Porter and Kramer, 2011, p.76) and “Conscious Capitalism” (Mackey and Sisodia, 2013, p.32). In a similar way to critiques presented about “Creating Shared Value”, ST lacks practical, applicable detail and is presented as a collection of concepts rather than a clear theory or framework which managers can “operationalise” in their daily duties (Crane *et al.*, 2014, p.134). It also does not address the critical “trade-off” between the social and economic needs of an organisation (Horisch *et al.*, 2014, p.334) which are central to concepts in theory such as “Conscious Capitalism” (Mackey and Sisodia, 2013, p.16).

Integrative Social Contract Theory (ISCT) proports to provide an alternative to such challenges, and some of the other perceived shortcomings of ST and the wider problem of appropriate decision-making with diverse groups of stakeholders (Donaldson and Dunfee, 1995, p.86; Douglas, 2000, p.101). ICST achieves this conceptualising the relationships between groups of people into hypothetical “contracts” (Donaldson and Dunfee, 1995, p.86) which either exist at “macro-social” or “micro-social level”. Macro-social contracts represent the ethical rules and norms of behaviour which govern entire economic communities with micro-social contracts concerning the rules which govern particular communities operating within the wider societal group (Donaldson and Dunfee, 1995, p.89; Wempe, 2009, p.762; Mansell, 2013, p.114).

Whilst these (and other) authors critique the premises of ST, in some cases proposing alternative perspectives, few entirely dismiss the underlying principle of ST: that business should be run responsibly and in the greater good of society (Dunfee, 2006, p.314). This implies that the fundamentals of ST are sound, but refinements and revisions are required to improve and “refresh” the body of work toward the ultimate objective of responsible business practice.

### **Building Towards Refining and Revising Stakeholder Theory**

This process of refinement and revision will no doubt involve considering the influence of changes in the operating environment of modern business. Whilst historically ST may have “evolved” effectively to address these changing demands of modern businesses (Hubbard, 2009, p.177), the pervasive influence of the internet and social media in recent years (Visser, 2005, p.169; Internet Society, 2017, p.32) has adversely affected the relevance of

ST. This lack of relevance is mainly due to its lack of consideration of the influence of the medium of interaction used between stakeholders, and the effects of this medium on both relationships and behaviour. This behaviour is explained by McLuhan and Lapham (1994) in the seminal concept from media and communication theory: “the medium is the message” (1994, p.9). This concept suggests that it is the medium itself, not the content transmitted, that influences human behaviour, interaction and reaction, and is echoed in other studies around emotional reaction to content across different media (O'Brien, 2017, p.2810). The very act of taking stakeholder interactions from traditional business arenas such as shop floors, boardrooms, trading floors and annual reports into the internet and social media domain is bound to have a pervasive influence on relationships between stakeholders and the organisation, and all subsequent behaviours and interactions.

Building on this critique, and the perspectives provided by ISCT, this thesis argues that revisions to ST are necessary to consider the influence of the medium of interaction between stakeholders drawing on “community” and “contract” elements of ISCT (Dunfee, 2006, p.314). Accordingly, the theoretical approach for the analysis of stakeholder relationships in this these will be: Integrative Stakeholder theory, with additional revisions to consider the influence of the medium of interaction between stakeholders. These revisions will be discussed in the following section.

## **Revising Stakeholder Theory**

### **Consideration for the Medium of Interaction**

All theory is subject to revision based on developing events that shape the domain in which it operates (Key, 1999, p.319). The unprecedented influences of social media discussed in chapter one more than justify revisions to ST, despite its eminent history as a seminal theory of the firm (Phillips, 2003, p.65; Laplume *et al.*, 2008, p.1153). For example, if as posited in this thesis, gamification was introduced as a tool for increasing stakeholder interaction in Sustainability Accounting and Reporting (SAR) there would be impacts on the behaviour of stakeholders from the very act of introducing this “arena” for their interactions. Significant control and trust would be “handed over” to stakeholders to interact online with the data produced by the organisation, and with each other in the communities that would form around these interactions. Whilst this in itself can present

issues of trust in systems where behaviours are “out-sourced” (Wang, Wei, Ren and Shen, 2016, p.88), it also challenges some of the core concepts of ST such as the binary nature of “primary” or “secondary” stakeholder categorisation concept used in mapping activities associated with Descriptive ST (Key, 1999, p.320; Horisch *et al.*, 2014, p.330). Traditionally, a stakeholder is considered to be either “primary” or “secondary” in terms of its power, importance and influence over the organisation (Donaldson and Dunfee, 1999, p.238), when measured in terms of its proximity to the organisation at the “centre” of the model shown in Figure One. Interestingly, there is no reason to consider the exclusive “home” of the organisation should be at the centre of this hub-and-spoke model, as noted by Steurer (2006, p.57), but this is traditionally where “distance” should be measured from in this concept.

However, this binary construction, when considering the influence of the medium of interaction is outdated. The effects of the medium of interaction introduce questions of stakeholder legitimacy (Benn, Abratt and O’Leary, 2016, p.2), impacts of scale of data and social media interaction (Mayer-Schönberger and Cukier, 2013, p.14), social contracts (Donaldson and Dunfee, 1999, p.20) and the various “norms” of behaviour which govern how such online communities behave (Pai and Tsai, 2016, p.39; Berger, 2019, p.666).

Figure Four takes the stakeholder concepts “mapped” in Figure One, adds some additional stakeholders that exist purely in online domains, and reinterprets their power and influence from the binary “Primary” and “Secondary” concept, into a “quadrant” considering their legitimacy, scale and interaction in an online environment. This example is provided as an illustration of one of the many potential opportunities to reimagine concepts of ST using the lens of the medium of interaction.

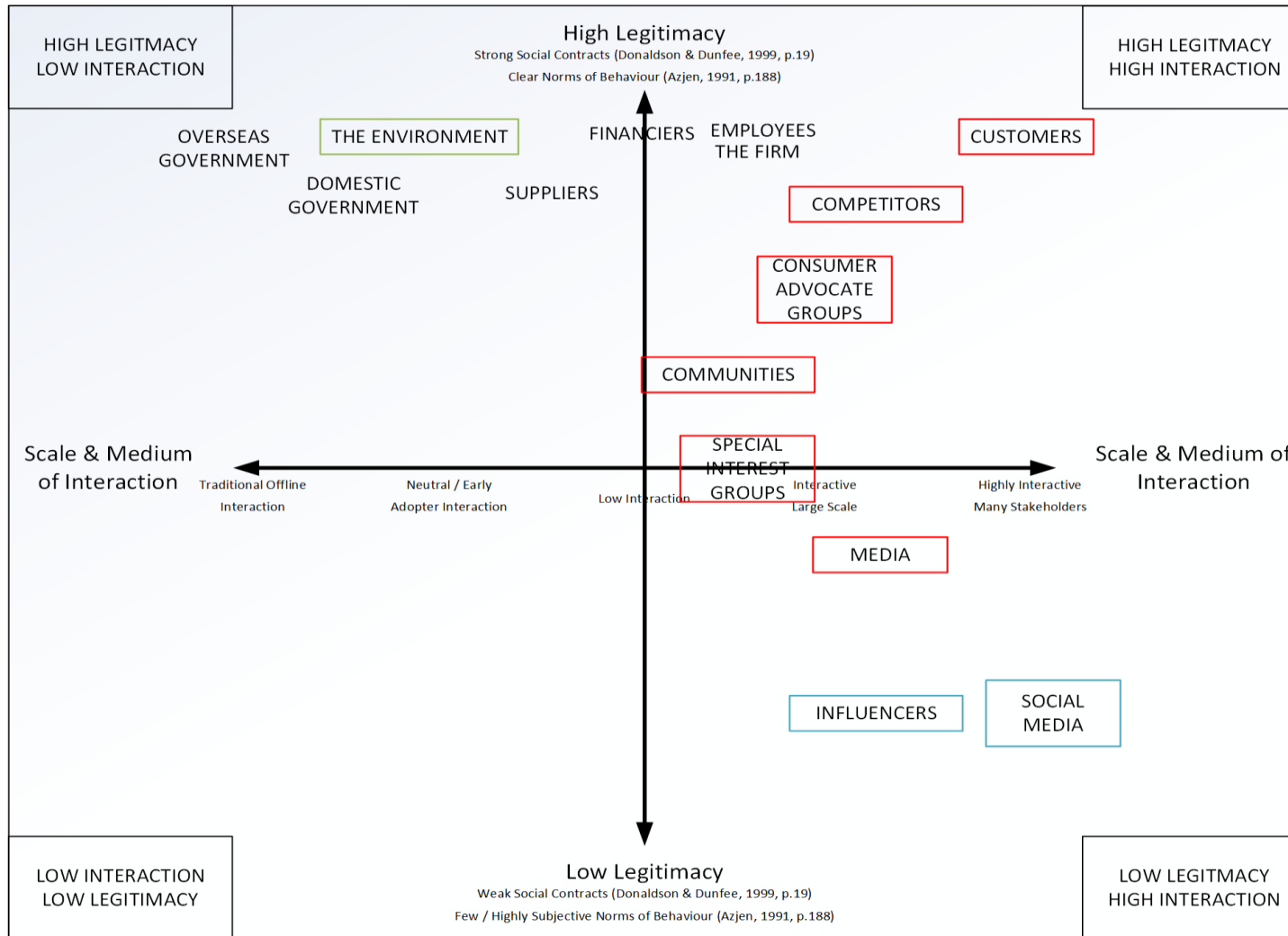


Figure Four – Stakeholder Concepts from Figure One re-imagined

Considering the influence of the medium of interaction between stakeholders. Figure one was originally adapted from Freeman *et al.* (2010, p.24).

This revision simply highlights how activities associated with Descriptive ST become more complex when further factors such as power, legitimacy and medium of interaction might be added. This is in spite of the viewpoint of Key (1999), who suggests a further critique that additional “dimensions” such as power, legitimacy and urgency (Mitchell, Agle and Wood, 1997, p.853) confuse the already nebulous nature of ST rather than clarifying the debate between concept and theory (1999, p.322). Key’s (1999) commentary on this particular element lacks relevance in the social media age, so notwithstanding his observation, this thesis asserts that the clarity obtained by adding these extra mapping dimensions is felt to outweigh any negative implications.

The proposed revision to ST illustrated in Figure Four above is proposed on the basis that ST in its current form does not consider the chosen medium of interaction with stakeholders. This review of literature has already identified several reasons how the operating environment for stakeholders has changed beyond recognition in recent years. These include many factors specific to the domain of Sustainability Accounting and Reporting (SAR). Such factors include: the rise of the internet, social media, rising public aware and activation on climate change, inadequate SAR performance, research gaps, compelling business reasons to engage in SAR and increasing demand from stakeholders.

By revising ST, the contribution to managerial practice made by this thesis is supplemented through creating an improved framework for managers to consider the influence of technology and communications on their relationships with stakeholders. Such a revision to theory would also provide a compelling addition to the contribution to knowledge made by this thesis. This is made through the creation of alternative theoretical perspectives to examine ST and the proposition of an argument that builds towards the ultimate design for the research of this thesis. These underpinning theoretical concepts are summarised and drawn together in a model in the following section.



## **Conceptual Model for the Research in this thesis**

### **Conceptual Model**

This research proposes to investigate perceived barriers to engagement in Sustainability Accounting and Reporting (SAR) and investigate potential options for increasing stakeholder engagement in SAR. Accordingly, and building on the theoretical and literature concepts identified herein, the below conceptual model illustrates the proposed route of investigation upon which the research design will be based.

**Stakeholder Theory**  
**Mapped against an axes considering aspects of the medium of interaction**  
**and the nature of the resulting engagement**

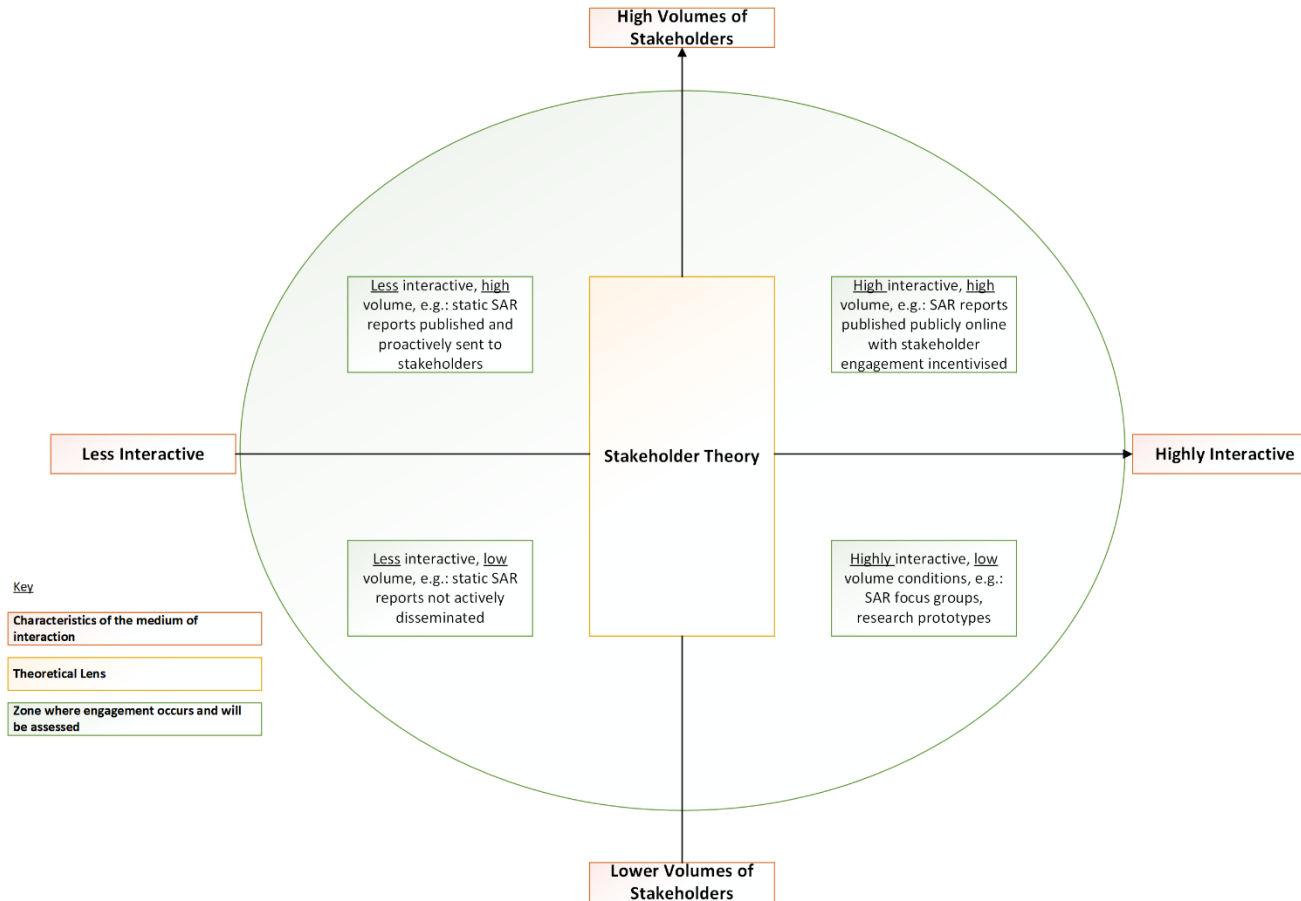


Figure Five – Conceptual model to underpin the research

The model positions concepts of Stakeholder Theory (ST) at the centre, set against measures of both scale and interaction defined by the chosen medium of stakeholder interaction. There are various dimensions of ST which could be used as “measures” by which the various combinations of scale and interaction can be tested, but in this case the “measure” is engagement in SAR. Accordingly, the model is assessed by concepts of engagement discussed earlier in this chapter: cognitive, affective and behavioural engagement.

As a result of executing the research design discussed in chapter three, a specific medium of interaction can be tested for its impact on the engagement of stakeholders in SAR. The resulting type of engagement can then be theorised, and the model revisited in light of the results. This creation and testing of this unique theoretical model further adds to the contribution to knowledge be made by this research.

### **Summary of Chapter**

This literature review chapter reviewed academic literature on the practice of Sustainability Accounting and Reporting (SAR), the concept of gamification and concepts from online engagement. These three elements comprised the key components of the research question and achieve the critical review of literature required by research objective one. The elements were then combined with a theoretical analysis of Stakeholder Theory (ST) to produce a conceptual model to underpin the design of the research proposed herein.

The first section of this chapter addressed SAR literature. Whilst there are many potential organisational and societal benefits to effective SAR, there are significant issues within current practice to address before any of SAR’s aspirational aims can be realised. However, rising to this challenge in the face of a growing climate emergency and rising public opinion is now essential. This thesis asserts that SAR needs to be accessible, engaging, accurate, immediate and convenient for stakeholders in order to be successful. This research aims to identify barriers to engagement, and potential tools to increase stakeholder’s engagement in SAR towards the aim of making SAR a more effective and widespread practice for the benefit of society.

One such tool is gamification, which was addressed in the second section of this chapter. Gamification applies concepts from games into non-game contexts with the aim of increasing engagement and interaction in those domains. Much of the gamification literature supports the view that it strives to employ intrinsic motivation techniques to create a more rewarding, enjoyable and ultimately more effective user experience. There are debates within the literature as to how to employ gamification, as well as critiques of its effectiveness, morality or long-term implications. Nonetheless, there is potential to use gamification with online SAR and observe the impact on engagement whilst simultaneously addressing key gaps in knowledge.

This research was underpinned by Stakeholder Theory (ST). A compelling case was built from the literature reviewed to propose a conceptual model including a revision to ST. This revision would consider the medium of interaction between stakeholders, a concept that will become increasingly fundamental to how we will interact with organisations in an online world. This thesis firmly believes that the combined power of social media and the internet to harness stakeholder discourse and interaction, coupled with gamification techniques from existing practice could greatly enhance the chances of success for SAR. As such research was conducted to create a significant contribution to both knowledge and practice. The next chapter of this thesis explains, justifies and critically evaluates the design for the research conducted.

## **CHAPTER THREE - RESEARCH DESIGN AND METHODOLOGY**

### **Chapter Introduction**

This chapter explains, justifies and critically evaluates the design for the research, and is organised as follows. Firstly, a section on the philosophical underpinnings of the research design serves as an introduction. Secondly, the approach and rationale of the mixed methods exploratory sequential design is addressed. Thirdly, the procedures for each phase of the research, including the pilot study conducted, will be discussed in detail, addressing the technical approach taken and the parameters used for design of each phase. Finally, sections on the ethical implications and an overall summary complete the chapter.

### **Philosophical Underpinnings**

How researchers construct, evaluate and approach research is inextricably influenced by their “worldview” (Mertens, 2009, p.1). The term “worldview”, interchangeable with “paradigm” (Mackinnon and Powell, 2014, p.23; Creswell and Creswell, 2018, p.5), is used going forward to outline: “the consensual set of beliefs and practices that guide a field” (Morgan, 2007, p.49). Whilst worldviews are applied by groups of researchers as shared perspectives on ideas within their field (Kuhn, 1970, p.11; Mackinnon and Powell, 2014, p.23), there are multiple, often competing, conflicting worldviews (Mertens, 2009, p.45; Creswell and Creswell, 2018, p.6), which some suggest are irreconcilable (Kuhn, 1970, p.146; Mackinnon and Powell, 2014, p.24). According to Creswell and Creswell (2018), the philosophical worldview of an author is critical because it defines the assumptions and perspectives they bring to their work, even if not immediately apparent in their writing (2018, p.5). A researcher’s worldview guides their epistemological and ontological assumptions (Bryman and Bell, 2015, p.26) which in turn define the research strategy adopted (Bryman and Bell, 2015, p.40). An individual’s worldview can be shaped by many factors including disciplinary orientation (Creswell and Creswell, 2018, p.5), upbringing (Saunders, Lewis and Thornhill, 2019, p.136), personal experiences (Bryman and Bell, 2015, p.19) or key life events (Blakeley and Higgs, 2014, p.567).

The research in this thesis was approached from the philosophical worldview of pragmatism. Those who adopt the worldview of pragmatism primarily believe that the consequences and effects of the practical application of ideas and action to reality

determines their ultimate value (Johnson and Onwuegbuzie, 2004, p.17; Creswell and Plano Clark, 2011, p.40; Giladi, 2015, p.3). An important definitional distinction within pragmatism must be made between the foundations laid by American writers who value practical knowledge, truth and human interest (Goodman, 1995, p.3), and later 20<sup>th</sup> century European authors who rely more on psychological foundations (Joas, 1993, p.96; Goodman, 1995, p.2). Whilst some argue that these American writers simply built on the foundations of earlier European proponents (Joas, 1993, p.99), it is the philosophical focus on “actions rather than consciousness” (Joas, 1993, p.95) that this thesis seeks to align itself with when discussing “pragmatism” as a philosophical foundation.

### **Pragmatism**

Pragmatism as a philosophical tradition of thought charts a course back the 19<sup>th</sup> century. Many cite its emergence as a reaction to the devastating impact of the American civil war, which led to a distrust of absolutes and a willingness to embrace adaption (Barnes, 2008, p.1543; Bacon, 2012, p.3). Three authors are most often found at the centre of the discourse in this period (Goodman, 1995, p.2; Barnes, 2008, p.1543; Creswell and Plano Clark, 2011, p.43; Bacon, 2012, p.7; Pratt, 2016, p.513), namely: Charles Sanders Peirce (1995), William James (1907) and John Dewey (1995). The underlying thread which runs through all of these author’s thinking and writing is the cornerstone of pragmatist philosophy: actions, results and sensations that arise from practical elements of objects are the only important considerations (Goodman, 1995, p.2). Put more simply: only objects which make a practical difference to us in the real world are relevant, objects which make no practical difference are meaningless (Wheeler, 1993, p.76).

Historically, the popularity of pragmatism as a school of thought waned in the mid twentieth century at a point soon after the death of Dewey (Barnes, 2008, p.1543). It staged a revival with the emergence of Richard Rorty (Tashakkori and Teddlie, 2003, p.81) and his seminal work “Philosophy and the Mirror of Nature” (1979), which proved both controversial and divisive in equal measure (Stanford Encyclopedia of Philosophy, 2009, [online]). Rorty’s “neo-pragmatism” (Stanford Encyclopedia of Philosophy, 2019, [online]) drew on the work of Dewey, who he felt to be one of the most important philosophers of the twentieth century (Joas, 1993, p.257; Bacon, 2012, p.92). Rorty’s philosophy is of importance to mixed methods research designs in that his beliefs underline the equal

importance of different types of epistemological position, and their ability to coexist within one research design. Rorty believed that knowledge is defined by its reception within the peer group of inquirers rather than by hard epistemological stances (Bacon, 2012, p.97). He argued against a devotion to one particular methodology (Freeman *et al.*, 2010, p.73), and in favour of a balance between all types of approaches to science, art and knowledge (Wheeler, 1993, p.76). He claimed that no particular type of knowledge or epistemological position is privileged over another (Bacon, 2012, p.98).

It is this position that underpins the philosophical position of this thesis, in giving equal weight to the qualitative and quantitative elements in a mixed methods research design (Creswell and Creswell, 2018, p.43) and striving to use research as a practical tool to “help us lead better lives” (Morgan, 2007, p.68; Freeman *et al.*, 2010, p.73; Baker and Schaltegger, 2015, p.265). The central implication for the design adopted was that pragmatism is an ideal partner for a mixed methods research design (Teddlie and Tashakkori, 2003, p.20; Johnson and Onwuegbuzie, 2004, p.16; Feilzer, 2010, p.7; Creswell and Plano Clark, 2011, p.26; Creswell and Creswell, 2018, p.43; Saunders *et al.*, 2019, p.181) and that knowledge of all types can have equal value (Bacon, 2012, p.98). Pragmatism’s focus on practical applications and the equal value of theory, science and practice (Freeman *et al.*, 2010, p.77) is also well aligned to research toward a professional doctorate (Banerjee and Morley, 2013, p.175). It places the research question at a position of primary importance to the researcher (Creswell and Plano Clark, 2011, p.44; Glogowska, 2011, p.251).

Pragmatism is not without its critiques or detractors, who principally approach their critiques of the position from opposing or contrasting worldviews (Creswell and Plano Clark, 2011, p.25; Mackinnon and Powell, 2014, p.24; Bryman, 2016, p.397), and their commitment to those over and above all others (Kuhn, 1970, p.146). Ontologically speaking, as will be addressed further in the following section, pragmatism is more closely aligned to constructivism than positivism (Saunders, Lewis and Thornhill, 2015, p.130), in that it takes a position that reality is constantly changing and can be multiple, rather than static and objective as espoused by the positivist worldview (Saunders *et al.*, 2015, p.131). This logically leads to critiques from some who state that: pragmatism lacks the rigour associated with approaches such as positivism (Baert, 2005, p.149), is a philosophy that is short-sighted, too focussed on the present (Bacon, 2012, p.5) and lacks conviction (Barnes,

2008, p.1542) or realism (Stanford Encyclopedia of Philosophy, 2019, [online]). Depending on the ontological perspective taken this “lacking conviction” critique in many ways is both a strength and weakness of the pragmatist worldview personified: it accepts that many approaches can “work”, but lacks a fundamental, central alignment to a common approach on which to construct rigour and alignment within the paradigm.

This thesis asserts that research should address questions which have practical meaning to everyday life, to observe their impact on individual and societal behaviour, to reflect on the sensations caused by objects or knowledge and to give equal value to all types of knowledge.

### **Mixed Methods Design: Rationale for Choice**

The research for this thesis was conducted using a mixed methods approach, based on an exploratory sequential design (Creswell and Plano Clark, 2011, p.86).

### **Overview of Proposed Research Approach**

An exploratory sequential design is a two-phase, sequential design which initially explores a topic area qualitatively, before a second quantitative phase further investigates a specific concept learned in the first phase (Creswell and Plano Clark, 2011, p.86; Patton, 2015, p.52). The purpose for choosing this design was to qualitatively explore the views of stakeholders as to barriers to their engagement in Sustainability Accounting and Reporting (SAR) online. This data was then used to inform and design a second quantitative phase with the aim of determining if the findings generalise to a larger sample. The combination of qualitative and quantitative approaches fortifies the research design by drawing on the individual strengths of each methodology.

### **Quantitative and Qualitative Research Designs**

This section presents a brief discussion and critical analysis on the relative merits and uses of quantitative and qualitative research methods. To underpin this, it is important to understand the relationships between research philosophy, epistemology and ontology.



Epistemological assumptions are derived from theory relating to the nature of knowledge within a discipline (Bryman, 2016, p.24). In social research, ontological considerations relate to the nature of social entities, or “actors” and their relationship with the external environment (Bryman and Bell, 2015, p.32). A researcher’s philosophical approach informs their epistemological stance on what they might deem as “acceptable” knowledge (Bryman, 2016, p.690). This in turn leads to their adoption of an ontological perspective on the research (Bryman and Bell, 2015, p.37), which defines the interaction and interdependency between the actors in research and their external environment (Bryman and Bell, 2015, p.32). The three factors of philosophy, epistemology and ontology combine with the influence of theory and practical considerations of the research to form Bryman and Bell’s (2015) “Influences on Business Research” (2015, p.40). Bryman (2016) provides a helpful summary of the epistemological and ontological considerations between various research methods, articulating the key differences between them (2016, p.32), reinforced by Patton (2015, p.64). Epistemological considerations ultimately determine whether a researcher adopts a positivist or interpretivist research approach, which in many cases leads to the selection of either qualitative, quantitative or mixed methods (Bryman, 2016, p.32).

According to Bryman (2016), quantitative methods entail quantification and measurement of large volumes of (often) numerical data (2016, p.148) to establish causality, generalisability and replicability of outcome (2016, p.169). Bryman (2016) also states that qualitative methods entail in-depth analysis of smaller volumes of data (Patton, 2015, p.52) usually based around words (2016, p.375) and are open-ended, oft-debated process with no standard approaches or processes (2016, p.405). It is worth noting that the relationships described in the previous paragraph are not universally agreed as mutually exclusive. Some feel positivist approaches do not exclusively lead to deductive analysis of data (Bryman, 2016, p.627) and interpretivist approaches can also be either deductive or inductive (Patton, 2015, p.541).

There are critiques of the practical applications of both quantitative and qualitative research methods. Quantitative methods are often critiqued for lacking due consideration of the social dimensions of reality, by uniformly measuring, over-simplifying and applying scientific principles (Silverman, 1998, p.4; Bryman, 2016, p.166). It can also be difficult to analyse and make sense of the sheer volumes of data generated from quantitative methods (Patton, 2015, p.522), and even harder to draw practical connection between results and

“everyday life” (Bryman, 2016, p.166). However quantitative methods at scale do normally present rigorous (Bryman, 2016, p.169), generalisable results from which theory can be derived (Bryman, 2016, p.399).

Many of the critiques of qualitative research methods reflect those of quantitative methods. Qualitative research can be highly subjective (Bryman, 2016, p.398), especially some techniques used in data coding (Fakis, Hilliam, Stoneley and Townend, 2014, p.155), potentially leading to difficulties in replication (Bryman, 2016, p.398). Some critics perceive a lack of scientific rigour in qualitative research, and it is rare that generalisable results can be drawn from a single piece of qualitative research (Wahyuni, 2012, p.71; Bryman, 2016, p.399). There are steps which can be taken to introduce greater levels of rigour to a piece of research, such as pilot studies, extended longitudinal studies, triangulation and reflexivity (Creswell and Plano Clark, 2011, p.61; Malhotra *et al.*, 2012, p.287; Fakis *et al.*, 2014, p.140; Bryman, 2016, p.386; Hays, Wood, Dahl and Kirk-Jenkins, 2016, p.174). Notwithstanding these critiques, qualitative designs are effective at permitting researchers to “get closer” to the perspective of participants (Denzin and Lincoln, 2013, p.19) and create “in-depth” data, especially in exploratory contexts (Malhotra *et al.*, 2012, p.86; Patton, 2015, p.52; Paluch and Tuzovic, 2019, p.440), which is a key principle underpinning research objective two of this thesis

The use of either type of approach is not mutually exclusive and can be successfully executed in a single study. This combination of methods introduces the concept of mixed methods research designs. Mixed methods designs address the limitations in each individual method by introducing a level of depth and rigour only possible by combining both approaches (Creswell and Plano Clark, 2011, p.8). In order to address the Research Objectives of this thesis, it was clear that a mixed methods design would be most appropriate.

### **Key Justifications for Research Design**

Any research design should be selected to appropriately address the research question and objectives (Bryman, 2016, p.403; Creswell and Creswell, 2018, p.3). In the case of the research conducted by this thesis, research objective two explored the perceptions of stakeholders with respect to potential barriers to their engagement in Sustainability

Accounting and Reporting (SAR) online. Therefore, an exploration of perceptions and social phenomena was required, necessitating an interpretative, thematic analysis of data collected from participants (Wahyuni, 2012, p.76). It was therefore aligned to a qualitative study (Fernback, 2007, p.55; Bryman, 2016, p.36; Creswell and Creswell, 2018, p.4).

Conversely, research objective three aimed to test the outcome of a prototype derived from the qualitative data collected by satisfying research objective two. It was intended to test if the findings generalised to a wider scale, by collecting data using a quantitative survey instrument. This required deductive analysis of data collected in larger volumes (Saunders *et al.*, 2019, p.51) necessitating a quantitative research design (Creswell and Creswell, 2018, p.4).

Hence, it was both necessary and appropriate to combine both approaches in a mixed methods study. Neither objective could have been addressed by a single data source alone (Creswell and Plano Clark, 2011, p.12), or provide appropriate mitigation of the weaknesses in either isolated individual method (Turner, Cardinal and Burton, 2017, p.244; Saunders *et al.*, 2019, p.164). This is often cited as a key strength of mixed methods research (Creswell and Plano Clark, 2011, p.12). This characteristic can help produce a more developed understanding of a research problem, aiding so-called “triangulation” of data (Fakis *et al.*, 2014, p.140), as used to good effect by both Kwok (2013, p.129) and Villiers, Rouse and Kerr (2016, p.80). Creswell and Plano Clark (2011) outline six individual reasons for selecting a mixed methods research design (2011, p.8), of which two were clearly appropriate to the research of this thesis. These were: “an overall research objective can be best explained with multiple phases or projects” (Creswell and Plano Clark, 2011, p.11) and “exploratory findings need to be generalised” (Creswell and Plano Clark, 2011, p.9).

The second significant reason for choosing a mixed methods research design is that mixed method designs are suitably aligned to the philosophical worldview of pragmatism. As discussed in earlier sections, it is widely held to be critical that a research design is aligned to the philosophical worldview of the researcher (Creswell and Creswell, 2018, p.5; Saunders *et al.*, 2019, p.132). This is order to understand the assumptions the research brings to the study (Creswell and Creswell, 2018, p.5) and appropriately align them to the epistemological and ontological approaches taken (Bryman, 2016, p.24) with the ultimate objective of creating an effective design to achieve the research objectives.

The third and final key reason for selecting a mixed methods design is related to the context of the study, which was highly appropriate for such a design. Exploratory sequential mixed methods designs are suitable for emergent research contexts (Creswell and Creswell, 2018, p.16), and the use of social media in the context of SAR is an emergent context (Visser, 2015, p.99). An appropriate example of such an approach in a similar context, as cited by Creswell and Plano Clark (2011, p.122), can be found in Myers and Oetzel (2003), who created an index of organisational assimilation based on the findings of a series of interviews (2003, p.443), and then tested this using a survey instrument (2003, p.445). Molina-Azorin and Fethers (2019) also supported the potential impact of a mixed methods study (2019, p.280), citing both its potential to engage stakeholders (2019, p.279) and the practical and social impacts yielded (2019, p.276).

The two-stage process utilised by an exploratory sequential design, starting with a qualitative phase, suits the emergent nature of gamification research (Creswell and Plano Clark, 2011, p.87). This is because it allows the next phase of research to be developed based on results obtained in the first (Saunders *et al.*, 2019, p.169), adapting to the ever-changing research domain.

Despite such compelling justifications for using a mixed methods design, there are considerations that researchers should address (and mitigate) when adopting mixed methods design.

### **Mixed Methods Research Designs – Considerations**

Perhaps the biggest consideration for researchers choosing to pursue a mixed methods research design is the so-called “Paradigm Debate”, arising from the combination of “opposing” paradigms such as positivism (Bryman, 2016, p.24) and interpretivism (Bryman, 2016, p.692). Historically, there have been many writers who have argued that the combination of epistemological stances which underpin the qualitative and quantitative elements of mixed methods studies are diametrically opposed and therefore cannot be combined (Maxcy, 2003, p.51; Creswell and Plano Clark, 2011, p.25; Glogowska, 2011, p.251; Denzin and Lincoln, 2013, p.19; Bryman, 2016, p.636).

However, Bryman (2016) warns against stereotyping the common assumptions about quantitative and qualitative research when considering and designing a mixed methods study (2016, p.627). For example, he points out that quantitative research is not always driven by hypothesis testing (Bryman, 2016, p.627), and qualitative research can sometimes be used for this purpose (Bryman, 2016, p.628). Therefore, arguments relating to the paradigm debate may mean that “barriers between quantitative and qualitative research might be undermined” (Bryman, 2016, p.629). This is resulting in techniques such as so-called “quantising” (Fakis *et al.*, 2014, p.153), where qualitative data is coded and reduced to numerical values by the researcher, for analysis as if it were quantitative data. Clearly, the risk of loss of depth and meaning from the qualitative data is a key issue here (Fakis *et al.*, 2014, p.157), and a further example of how the debate about research paradigms is certainly pervasive.

These critiques of mixed methods research mean that it follows that the philosophical worldviews associated with each paradigm may also be hard to combine in practice, and researchers should be cognisant of this when executing the research. Whilst this can in part be mitigated by the use of reflective logs (Malhotra *et al.*, 2012, p.287), it remains a practical consideration not to be underestimated. This thesis asserts that rather than being “incommensurable” (Kuhn, 2012, p.4), in line with the worldview of pragmatism, the most appropriate design to achieve the necessary outcome must be selected. Therefore, the value of mixing qualitative and quantitative methodologies outweighs the paradigm debates and practical issues.

There are operational considerations to note when using a mixed methods approach. The researcher must demonstrate mastery and rigour across both qualitative and quantitative designs (Creswell and Plano Clark, 2011, p.13), which can be challenging given the scarcity of literature and support available on mixed methods research (Turner *et al.*, 2017, p.244). This paucity of literature may be, at least in part, attributable to the fact that some areas of academia still view mixed methods research as “new” (Creswell and Plano Clark, 2011, p.15). Researchers can gain the necessary skills towards a mixed methods study through experience of separate, individual, mono-method qualitative and quantitative studies (Creswell and Plano Clark, 2011, p.13), as well as through strong preparation, background reading and rigorous design (Creswell and Plano Clark, 2011, p.14). Mixed methods research can be more time-consuming and expensive (Creswell and Plano Clark, 2011, p.14;

Turner *et al.*, 2017, p.244; Saunders *et al.*, 2019, p.149). This can have a practical impact around securing funding for research (Cheek, 2000, p.326) and often rules out the entirety of a mixed methods study in a pilot format (Saunders *et al.*, 2019, p.149). This challenge can be in part mitigated by increasing the team size to reduce the duration of the effort required, which also brings advantages in diversity of views (Creswell and Plano Clark, 2011, p.15).

Creswell and Plano Clark (2011) neatly summarise the principal considerations when planning a mixed methods study. They consider the biggest challenges to be: ensuring the best fit of the design to the research question, having the necessary skills, resources and time to complete the study and convincing others of the value of the research produced (Creswell and Plano Clark, 2011, p.13).

## **The Exploratory Sequential Design**

So far, this chapter has articulated and justified three key reasons why this thesis adopted a mixed methods research design, based on the exploratory sequential design: it was suited to the research question, philosophically and epistemologically aligned to the researcher's worldview and well-suited to the research context. This section elaborates further on the exploratory sequential design, providing necessary justification for its selection through examples from relevant research.

The exploratory sequential design (ESD) is a mixed methods design appropriate for researching exploratory topics, by first exploring a domain and then testing it (Creswell and Plano Clark, 2011, p.86; Creswell and Creswell, 2018, p.127). ESDs are suitable for qualitatively oriented researchers, working under resource constraints (analysing only stream of data at a time) in order to identify emergent questions (Creswell and Plano Clark, 2011, p.87). ESDs are widely felt to be qualitatively biased as the first qualitative phase dictates the overall direction of the research (Creswell and Plano Clark, 2011, p.89).

The benefits of ESDs include: ease of implementation, appeal for broad research audiences in both qualitative and quantitative disciplines, suitability for emergent topics and the potential for creation of new research instruments based on output (Creswell and Plano Clark, 2011, p.54, 2011, p.89). However, the limitations of ESDs are that: they can be time-consuming and the evolving nature of the research design presents a broad range of challenges (Creswell and Plano Clark, 2011, p.89). The process requires the researcher to make decisions about data, sampling and design between the phases, as the evolving qualitative phase defines how the quantitative phase is conducted, which can be a challenge (Creswell and Plano Clark, 2011, p.89).

Whilst evaluating designs appropriate for this thesis, several other types of mixed methods research design were considered and discarded. These included the "Explanatory Sequential Design" (Creswell and Plano Clark, 2011, p.81) which was deemed unsuitable because it is used to elaborate on quantitative data with qualitative results to provide a more in-depth understanding (Creswell and Creswell, 2018, p.237). "Convergent" designs were discarded because they compare perspectives or merge data sets to develop a more complete understanding of a topic (Creswell and Plano Clark, 2011, p.73; Creswell and

Creswell, 2018, p.237). Other types of designs such as “Transformative” (Creswell and Plano Clark, 2011, p.96) and “Multiphase” (Creswell and Plano Clark, 2011, p.72) were also discarded due to being inappropriate to the context of the research.

This study combines the different qualitative and quantitative methodologies in an approach which Bryman (2015) referred to as: “Context” (2016, p.642). This approach utilises the qualitative phase to provide contextual understanding, which is then combined with (hopefully) generalisable findings from the prototype and quantitative survey instrument described later in this chapter. Creswell and Plano Clark (2011) suggest that some types of design can place greater importance on the quantitative phase, however this thesis places equal importance on each phase, whilst being aware of the propensity to a qualitative bias in ESDs (2011, p.89). This equal importance is due to the emergent nature of research in the SAR domain making it difficult to know what barriers will be identified, and how these might influence the design of the second quantitative phase.

The approach taken by this research was validated by examples of existing research utilising the same design in similar contexts, with aligned objectives. These were: Mak and Marshall (2004), Capstick and Pidgeon (2014) and Betancourt, Meyers-Ohki, Stevenson, Ingabire, Kanyanganzi, Munyana, Mushashi, Teta, Fayida, Cyamatatare, Stulac and Beardslee (2011). Each of these papers show how ESDs can operate in multiple cultural contexts, across disciplines and still produce effective results. They also highlight the effectiveness and impact of the qualitative phase, in particular thematic analysis (Wahyuni, 2012, p.76) as a tool in providing input to the design of effective exploratory quantitative instruments. In particular, Betancourt *et al.* (2011), who Creswell and Creswell (2018) support as an exemplar of an ESD (2018, p.243) adopt a similar design to that completed for this thesis. Betancourt *et al.* (2011) use semi-structured interviews (2011, p.34), followed by thematic analysis (2011, p.35) to develop and execute a quantitative survey phase (2011, p.35). This provides strong justification for the approach adopted by this thesis. Further details on these exemplar papers can be found in the appendices.

This section of the chapter has addressed the benefits and limitations of ESDs in mixed methods research and justified the choice of the design for the research of this thesis. The effectiveness of a ESD can often be aided by the conducting of a pilot study (Bryman, 2016, p.260). Accordingly, a pilot study was conducted as part of the research of this thesis, and



the detail of this study, alongside a full explanation of the research procedures for the two phases of the ESD are addressed in the following section of this chapter.

## **Research Procedures**

### **Overview of Section Approach**

This section of the research design chapter outlines the specific characteristics and limitations of each phase in the exploratory sequential mixed methods research design. Each section is dedicated to a phase or consideration of the design.

### **Impact of Coronavirus (COVID-19) on the Research**

The Coronavirus (COVID-19) outbreak began in China in late December 2019, spread throughout the world in early 2020 and was assigned pandemic status in early March 2020 (BBC News, 2020a, [online]). This research design was impacted in several ways by the subsequently enforced social distancing measures, implemented by the UK government and most global nations in late March 2020 (BBC News, 2020b, [online]; Karabag, 2020, p.2).

As the initial phase of the design had nearly completed by March 2020, these impacts were principally on the second phase of the exploratory sequential design. This had to be reworked to support social distancing during data collection and ensure both researcher and participant safety (Clay, 2020, [online]). These modifications were not significant enough to fundamentally change the design approach but did impact the media and techniques used to collect the data. The first phase of the research was only subject to a minor impact, resulting in a larger percentage of interviews being conducted remotely than had otherwise been anticipated prior to early December 2019.

Conducting research during pandemics is not without precedent (Macklin and Cowan, 2009, p.1; Goudarzi, 2020, [online]; Omary, Eswaraka, Kimball, Moghe, Panettieri and Scotto, 2020, [online]). In most cases research of all types should continue and is in fact necessary to build knowledge of the exceptional conditions (Clay, 2020, [online]; Karabag, 2020, p.2), and to subsequently assist in rebuilding economies and sectors after the pandemic has

subsided (Goudarzi, 2020, [online]; Maingi, 2020, p.1; WARC, 2020, [online]). This is on the assumption suitable modifications to design are made to both to ensure reliability of data and safety of researchers and participants (Clay, 2020, [online]). Safety was addressed by immediately modifying data collection methods to make use of remote applications and internet technology to ensure participants could maintain social distancing. Ethical considerations, discussed further later in the chapter, needed to be updated to reflect the impact of the outbreak. This ranged from considerations relating to ensuring participants were not subject to increased stress during data collection, or were not themselves ill whilst participating (Macklin and Cowan, 2009, p.1).

The content of questions was reviewed to ensure that there would be limited bias on responses due to public perceptions of the topic areas in the light of the pandemic. For example, if questions addressed areas relating to, for example, health, travel or socialising these may have been impacted by participants' perceptions whilst being directly impacted by the pandemic (Knowles, 2020, [online]). A summary of all impacts on each phase of the design is shown in Table One below.

Element of Design	Previous Design	Impact / Changes Made
Pilot Study	Eight semi-structured interviews	None
Qualitative Phase: Semi-Structured Interviews	Twenty semi-structured interviews	A higher percentage of interviews were conducted remotely than was previously anticipated. Analysis and write-up were unaffected.
Quantitative Phase: User Acceptance Testing, Prototype and Questionnaire	Presentation, User Acceptance Testing (UAT) Workshop and Survey	All aspects were conducted remotely as opposed to in person as originally intended. Analysis and write-up were unaffected

Table One – Summary of the impact of COVID-19: before and after

### Pilot Study

A pilot study was conducted for this thesis to test the first phase of the exploratory sequential design in isolation at a smaller scale. Bryman (2016) states it is “always desirable to conduct a pilot study” (2016, p.260) and Hazzi and Maldaon (2015) believe pilot studies are a “cornerstone of a good research design” (2015, p.53). Pilot studies are widely believed to be essential for good quality, cost-effective research (Lancaster *et al.*, 2002, p.307; Blessing and Chakrabarti, 2009, p.114; Braun and Clarke, 2013, p.141). Generally, pilot studies are conducted for two reasons: either to test specific data collection methods to be used in a future study (Bryman, 2016, p.260), or to conduct a small-scale version of the entire study (van Teijlingen and Hundley, 2001, p.1; Hazzi and Maldaon, 2015, p.54). The former reason was the rationale for the pilot study conducted for this thesis: to test the initial interview phase of the exploratory sequential design at a smaller scale. The importance of piloting interviews is confirmed by Merriam and Tisdell (2015), who believe it is crucial to both adapt and improve the questions in future (2015, p.117). This is a view supported by Oppenheim (1992, p.48), a seminal writer on questionnaire and survey design, amongst others (Malhotra *et al.*, 2012, p.122; Braun and Clarke, 2013, p.141).

There are, however, some cautionary notes. Pilot studies can be expensive (Hazzi and Maldaon, 2015, p.60), they should not be considered as hypothesis tests (Leon, Davis and Kraemer, 2011, p.626), their results should be treated with caution (Lancaster *et al.*, 2002, p.311), appropriate rigour should still apply (Hays *et al.*, 2016, p.174), and unexpected outcomes should not dissuade researchers from moving ahead with full studies (Lancaster *et al.*, 2002, p.311).

The pilot study comprised of a total of eight interviews conducted on a representative mixture of stakeholder types. The questions addressed the stakeholder's interaction with Sustainability Accounting and Reporting (SAR) processes, and subject to the point noted below, were identical to those used in the eventual design adopted by this thesis. Eight is a suitable number of interviews for a Pilot Study as a small-scale test for a future research design (van Teijlingen and Hundley, 2001, p.1), but is not considered sufficient to permit generalisation from the results. The number was justified based on a reduced percentage of that used in relevant larger scale examples where generalisation *was* possible. In these relevant examples, an average number of eighteen was derived from analysis of four related studies, where the numbers ranged from fourteen (Morioka and Carvalho, 2016, p.126) to twenty-five (Herremans and Nazari, 2016, p.107) with an intermediate range of seventeen (Greco, Sciulli and D'Onza, 2015, p.476; Villiers *et al.*, 2016, p.80). These orders of magnitude for a large scale survey are supported by Cresswell and Plano Clark (2011, p.174), Malhotra *et al.* (2012, p.499), Warren (2002, p.99), Teddlie and Yu (2007, p.84) and Braun and Clarke (2013, p.48).

Broadly, the data captured in the pilot study was found to be sufficient in volume and acceptable in depth and quality to address the research objectives. The total number of themes identified, the consistency of occurrences across the eight interviews and the depth of data received was sufficient to conduct effective thematic analysis. The responses received created similar volumes of data from each participant type. As such, the pilot study contributed significant value to the eventual design adopted in this thesis.

As a result of conducting the pilot study, two areas were highlighted for necessary improvements to the eventual research design. Firstly, some practical issues relating to the execution of the interviews were improved to capture more broad and relevant data. Secondly, the results of the interviews led to some minor improvements in the sampling technique, and overall informed the adoption and design of the exploratory sequential mixed methods approach. These recommendations increased the volume and depth of data captured to a suitable level for a doctoral thesis. The detail is included in the following section of this chapter, which addresses the rationale and justification for the procedures utilised in the semi-structured interviews.

## **Qualitative Phase: Semi-Structured Interviews**

The following sections address the rationale, justification and procedures used to conduct the first phase of the exploratory sequential design: semi-structured interviews. The interview guides and flow charts to support this can be found in the appendices.

Accompanying these are a project information sheet and interview consent form which were distributed to participants prior to their participation in data collection.

### **Semi-Structured Interviews: Rationale and Justification**

A semi-structured interview is a suitable qualitative data collection method (Malhotra *et al.*, 2012, p.87) and involves conducting an informal, conversational interview based on an interview guide (Braun and Clarke, 2013, p.78). Semi-structured interviews allow the researcher to collect a variety of participants views and perceptions (Malhotra *et al.*, 2012, p.255; Braun and Clarke, 2013, p.81; Turner *et al.*, 2017, p.247) in addition to further rich data from phraseology, observation and non-verbal cues (Bryman, 2016, p.485). This phase of the research design addressed research objective two, which concerned itself with the views and perceptions of stakeholders, meaning that interviews are a wholly appropriate technique to adopt (Bryman, 2016, p.475). The output from each interview was a full transcription of the conversations which was printed out, analysed and combined with researcher's hand-written notes taken during the interviews.

The main limitations of semi-structured interviews are that they can be time-consuming (Bryman and Bell, 2015, p.495) and usually involve smaller sample sizes (Malhotra *et al.*, 2012, p.499), leading to a lack of breadth in data (Braun and Clarke, 2013, p.80). The latter concern may be at least partially addressed by good sampling methods (Bryman, 2016, p.410). Conducting a semi-structured interview necessitates a certain level of skill in the researcher (Bryman, 2016, p.473) to overcome issues such as anonymity concerns (Braun and Clarke, 2013, p.80), manage control subjectivity issues (Bryman, 2016, p.398), understand power differentials (Braun and Clarke, 2013, p.89) and build rapport with subjects (Braun and Clarke, 2013, p.81).

## **Semi-Structured Interviews: Procedures**

A total of twenty interviews were conducted for this first phase of the research design. This number of interviews is both robust and justifiable based on analysis of the numbers of interviews conducted in similar research papers. An average number of eighteen interviews was derived from analysis of four research papers, where the numbers ranged from fourteen (Morioka and Carvalho, 2016, p.126) to twenty-five (Herremans and Nazari, 2016, p.107) with an intermediate range of seventeen (Greco *et al.*, 2015, p.476; Villiers *et al.*, 2016, p.80). These orders of magnitude are supported by Creswell and Plano Clark (2011, p.174), Malhotra *et al.* (2012, p.499), Warren (2002, p.99) and Teddlie and Yu (2007, p.84). According to Braun and Clarke (2013, p.48), the number of interviews conducted in this phase alone is a suitable amount for a thesis. The combination of interviews and the additional quantitative phase ensures the design adopted is significantly robust.

The interview subjects were selected by both Responsible 100 (R100) and the researcher from their network of contacts, using purposeful sampling (Creswell and Plano Clark, 2011, p.173; Bryman, 2016, p.408). Purposeful sampling is a technique used when the researcher specifically selects subjects to suit the research question, and is a non-probability technique (Teddlie and Yu, 2007, p.80), well suited to this qualitative design (Teddlie and Yu, 2007, p.77; Creswell and Plano Clark, 2011, p.179; Saunders *et al.*, 2019, p.285). The aim of a purposeful sample is to select the cases best suited to provide a rich, deep level of information suitable to address the research question (Suri, 2011, p.66; Patton, 2015, p.52).

The interview participants were split equally between the different types of stakeholders in the process of Sustainability Accounting and Reporting (SAR) identified in Figure One: "Producers" and "Consumers". The criteria underpinning the sample were different for Producer and Consumer groups of stakeholders. Producer stakeholders were those employed within or connected to processes or functions of SAR professionally, making them to a degree homogeneous (Saunders *et al.*, 2019, p.295), but with a representative spread of private, public and charitable sectors. Consumer stakeholders were simply required to be internet users of either social media or eCommerce services with a representative spread of age and gender, therefore making them heterogeneous and utilising the maximal variation type of purposeful sampling (Creswell and Plano Clark, 2011, p.174; Patton, 2015, p.267; Saunders *et al.*, 2019, p.316). The split between types of

stakeholders ensures that a representative set views of stakeholders from both sides of the SAR process are considered, and removes potential biases associated with an unbalanced split. For example, interviewing solely Producer stakeholders who work within SAR as a profession, or just engaged “green” Consumers, could generate an unrepresentative set of perceived barriers to engagement. A breakdown of the participants is shown in Table Two below.

Participant ID	Stakeholder Type	Sector of Employment (Producers Only)
1, 2, 6, 7, 19, 20	Producer	Private Sector
3, 4, 8, 11, 12, 13, 14, 16, 17, 18	Consumer	
5, 10	Producer	Charity Sector
9	Producer	Public Sector
15	Producer	University Sector

Table Two – Particulars of interview subjects

The approach is justifiable for this research as it is in line with that used in recent studies adopting a similar methodology by Herremans *et al.* (2016, p.423), Mazmanian *et al.* (2013, p.1341), Nieto, Méndez and Carrasquilla (1999, p.603) and Greco *et al.* (2015, p.476). However, there are considerations with purposeful sampling.

Purposeful sampling has a limitation where results may be skewed by the biases (conscious or otherwise), of both the selection process and other pressures such as the demands of potential publishers (Suri, 2011, p.66). However, some consider bias to be a strength of purposeful sampling as it brings an “intended focus” (Patton, 2015, p.264) to the selection of subjects, therefore ensuring rich volumes of data are harvested (Patton, 2015, p.52). Purposeful sampling may also fall prone to errors in selection by the researcher, for example, unknowingly selecting unsuitable or inappropriate participants, which could lead to wasted time and unusable data. This concern is mitigated by a clear research design and a suitable interview guide guiding the researcher to ensure key criteria are met. Most significantly, as a non-probability technique, purposeful sampling does not permit generalisation from the results (Teddlie and Yu, 2007, p.84; Bryman, 2016, p.181). However, this mixed methods study does not require generalisation to occur from the results of the first phase of the exploratory sequential design.

Patton (2015), who is acknowledged as an authority on sampling approaches (Suri, 2011, p.64) provides a very comprehensive review and categorisation of purposeful sampling approaches spanning over 40 options (2015, p.266). This categorisation, alongside that provided by Teddlie and Yu (2007), and the flowchart devised by Saunders *et al.* (2019, p.316) formed the basis for a review of potential alternative sampling approaches (Patton, 2015, p.267).

This review yielded three potential alternatives, both of which were eventually discarded as unsuitable for this research design. These included, firstly: convenience sampling, which was discarded because it lacks credibility and limits control over choice of participants (Saunders *et al.*, 2019, p.318), despite its comparative ease of execution (Bryman, 2016, p.187). It was important participants could provide a depth of information on SAR (Patton, 2015, p.52), hence choice is important and purposeful sampling is more appropriate. Secondly, any type of probability sampling (such as quota or probabilistic sampling) was ruled out as these approaches are predominantly suitable for quantitative research designs (Teddlie and Yu, 2007, p.87; Patton, 2015, p.268; Bryman, 2016, p.408), and therefore not methodologically aligned to this qualitative phase, and generalisation was not a requirement. Finally, theoretical sampling, was considered and discarded, as it is more methodologically aligned to grounded theory based research designs (Teddlie and Yu, 2007, p.82; Patton, 2015, p.269; Bryman, 2016, p.410).

The interviews were conducted face-to-face where possible, and via Skype video or audio conference facilities when face-to-face was not practical, available or prohibited by COVID-19 restrictions. Online video and audio interviews are a more common occurrence as research populations become more geographically dispersed and technology improves (Deakin and Wakefield, 2014, p.603). This makes Skype a suitable and effective medium to conduct interviews with both types of stakeholder when face-to-face is not possible. It ensures participation remains convenient, cost-effective and a positive experience for both the researcher and the participant (Bryman, 2016, p.492; Jenner and Myers, 2019, p.167). Whilst there are clearly both benefits and drawbacks to online interviewing (Deakin and Wakefield, 2014, p.613), feedback on Skype as an interview in the research community is in general positive (Jenner and Myers, 2019, p.165) for it to be used as an effective supplement when a face-to-face option is prohibitive (Deakin and Wakefield, 2014, p.603; Weller, 2017, p.623). The use of a video connection meant less significant data from body



language, non-verbal cues and other visual benefits was lost (Bryman, 2016, p.492). Some also feel that remote interviews harbour benefits as participant can speak openly, confidentially and safely to a researcher whatever their environment or location (Jenner and Myers, 2019, p.165).

The conversations were digitally recorded, and professionally transcribed (Braun and Clarke, 2013, p.92; Saunders *et al.*, 2019, p.412), anonymised and checked before being combined with interviewer notes made during the interview process (Malhotra *et al.*, 2012, p.291; Bryman, 2016, p.128). This approach was taken to afford the interviewer more time to concentrate on correctly executing the interview, addressing follow-up questions and engaging with the subject (Bryman, 2016, p.479; Saunders *et al.*, 2019, p.413). The creation of recordings enabled added benefits such as the possibility of additional scrutiny, and permitted repeat analysis of data mitigating the limitations of human memory or bias (Bryman, 2016, p.479; Villiers *et al.*, 2016, p.80).

The choice to use professional transcription was made to ensure neutrality, minimise bias and produce verbatim, efficient transcriptions. It is acknowledged there are arguments supporting the researcher transcribing their own interviews. These include those such as perceived “closeness” to the data (Bryman, 2016, p.483; Saunders *et al.*, 2019, p.580), no loss of contextual data collected from being present during the interview (Saunders *et al.*, 2019, p.573) and the considerable cost of the professional services of transcription (Bryman, 2016, p.481). Many of these are mitigated by the researcher carefully checking and proof-reading the transcriptions, and ensuring the process is completed as soon as possible after the interview to ensure familiarity with the subjects covered (Bryman, 2016, p.481; Saunders *et al.*, 2019, p.573). This, combined with the flexibility afforded to the researcher to concentrate on interview technique (Bryman, 2016, p.479), behavioural observation of body language and emotional responses (O'Reilly, 2012, p.99) and the creation of notes during the process are, in combination, considered more beneficial to the overall quality of the research than the researcher transcribing the interviews.

### **Semi-Structured Interviews: Analysis of Data Collected**

The data was analysed using a process of coding, followed by thematic analysis. Coding is defined by Braun and Clarke (2013) as “a process of identifying aspects of the data that

relate to your research question” (2013, p.206). Thematic analysis is defined by Wahyuni (2012) as “identifying patterns and themes within data” (2012, p.76), with “themes” defined by Bryman and Bell (2015) as “a category identified by the analyst through his / her data” (2015, p.584). The complexity and depth of the qualitative data logically leads to the use of inductive research methods (Chatman, 1996, p.193; Malhotra *et al.*, 2012, p.197; Patton, 2015, p.64), which is both in-line with the philosophical underpinning of the design (Bryman and Bell, 2015, p.40; Saunders *et al.*, 2015, p.128).

Whilst coding is an effective method of qualitative data analysis, it does have some limitations. In line with most qualitative research techniques, it is open to misinterpretation by the researcher (Schwandt, 2000, p.191; Braun and Clarke, 2013, p.206) or interviewer bias (Braun and Clarke, 2016, p.740; Bryman, 2016, p.472). These can be partially mitigated through a systematic, structured and rigorous framework for analysis of the data (Bryman, 2016, p.585; Hays *et al.*, 2016, p.174). Drawing further on the aforementioned “Paradigm Debate”, quantitatively-aligned researchers may cite that coding of qualitative data from the pragmatist viewpoint lacks rigour and process (Baert, 2005, p.149) and is subjective, often yielding different results depending on who interprets the data (Bryman, 2016, p.398). The counterpoint to this argument is that the data can be rich, deep and can open possibilities that researchers would previously not have considered when drafting research objectives. As this research question and initial phase of the exploratory sequential design required in-depth analysis of rich data, coding the data prior to thematic analysis was an effective and justifiable approach.

The coding approach taken used researcher-derived codes to provide a deeper analysis of implicit themes within the rich data, rather than explicit data-driven, or semantic codes, which more closely mirror the participant’s responses (Braun and Clarke, 2013, p.207). This was done in order to match the needs of the research objectives. The interview transcripts were printed and reviewed, initially for familiarisation (Braun and Clarke, 2013, p.202) and subsequently to support the coding of data relating to the research objective two. Coding and thematic analysis was conducted using a structured and systematic method of analysing data into themes and subthemes, utilising NVivo 12 (2018, [online]).

NVivo was chosen because it aids efficiency by reducing manual processes in data analysis (Bryman, 2016, p.601; Bergeron and Gaboury, 2020, p.358), provides a repository for

summarising coded data (Welsh, 2002, p.23), adds powerful additional options for analysis (Bryman, 2016, p.617) and saves time for the researcher to spend on deeper analysis of the data (Welsh, 2002, p.24; Bryman, 2016, p.603). It can also add rigour, trustworthiness and transparency in the analysis (Bryman and Bell, 2015, p.608; Bryman, 2016, p.603; Paulus, Woods, Atkins and Macklin, 2017, p.42) by providing an audit trail (Paulus *et al.*, 2017, p.42). Nvivo aids the management of complex data sets by identifying relationships (Paulus *et al.*, 2017, p.41; Bergeron and Gaboury, 2020, p.358) and supports the combination of multiple datasets, such as those collected in the second phases of the exploratory sequential design.

Despite its potential usefulness, it is important to remember that Nvivo does not perform the qualitative data analysis for the researcher, so as such is not a substitute for analytical skills (Bryman and Bell, 2015, p.606; Paulus *et al.*, 2017, p.38), and its use does not mitigate aforementioned procedural issues in coding and thematic analysis. There is also the risk that the use of qualitative software analysis tools such as NVivo “encourage” the researcher to use more codes, due to the efficiency of the process, therefore diluting the effectiveness of identifying themes (Welsh, 2002, p.25). The introduction of software in data analysis may also introduce methodological bias and indirectly influence the outcome of the results. For example, the options available may encourage researchers to “quantify” qualitative data and cause methodological confusion (Bryman, 2016, p.602) and lose some of the key characteristics of each individual type of data (Bryman, 2016, p.603).

The specific approach taken within Nvivo for this thesis utilised a set of framework steps devised as a combination of those provided by Patton (2015, p.553) and those of NatCen (2014, [online]) in their “framework” approach, as explained by Bryman (2016, p.585). The transcripts of the interviews and interviewer notes were loaded into Nvivo, and each one was iteratively reviewed to add codes and “develop a manageable classification, identify, label patterns in the data, re-read and make notes” (Patton, 2015, p.553). Once this had been completed for all twenty interview transcripts, the final summary of nodes and annotated content were reviewed in Nvivo, alongside summaries of coded relationships (Bergeron and Gaboury, 2020, p.359). This summary of information within Nvivo in tabular form (Patton, 2015, p.554) allowed for codes to be iteratively reviewed, categorised and the themes to be reduced into common groups (Wahyuni, 2012, p.76; Bryman, 2016, p.587) to facilitate the next phase of the research.

Notwithstanding the critiques, the use of NVivo has strengthened the results of the first phase of research by building a strong foundation for quantitative analysis in the second phase of the exploratory sequential design. This formal thematic analysis structure addressed concerns around the process not being structured or systematic enough (Welsh, 2002, p.23; Braun and Clarke, 2013, p.180) as well as other critiques of thematic analysis as a process. These included: a lack of rigour, literature and established guidelines on the approach (Braun and Clarke, 2013, p.180; Bryman, 2016, p.584), the researchers inherent cultural and social predispositions (Saunders *et al.*, 2019, p.136) and the influence of the researcher's agenda on whether themes emerge or are developed (Braun and Clarke, 2016, p.740). Coding can potentially lose the context of what the participant is trying to articulate to the researcher (Bryman, 2016, p.583). Critics of qualitative approaches also suggest that coding is too open to interpretation (Bryman, 2016, p.398), and that no single researcher will derive the same set of codes or themes from the same set of data (Bryman, 2016, p.583).

The completion of this phase of the data collection informed the design and execution of the subsequent phase of research in this exploratory sequential design – user acceptance testing and a structured questionnaire.

### **Quantitative Phase: User Acceptance Testing, Prototype and Questionnaire**

This phase of the research was designed to test if the findings from the first qualitative phase of semi-structured interviews generalised to a larger sample. An initial prototype instrument was created based on the themes identified from the first qualitative phase. Data was collected by means of a structured questionnaire administered following a period of User Acceptance Testing (UAT) of this prototype. The follow subsections explain the approach, rationale and justification for this final phase of the exploratory sequential mixed method design.

### **User Acceptance Testing Workshop: Rationale and Prototype**

User Acceptance Testing (UAT) is defined by the International Software Testing Qualifications Board (ISTQB) as “a type of acceptance testing performed to determine if intended users accept the system” (ISTQB, 2019, p.57) against “criteria that a component or system must satisfy in order to be accepted by a user, customer, or other authorized entity”

(ISTQB, 2019, p.2). UAT is intended to validate the software in a “real setting by the intended audience” (Otaduy and Diaz, 2017, p.212). This phase of the research design addressed research objective three.

Hambling and van Goethem (2013) outline what they believe to be the three justifiable benefits of conducting UAT: risk management (2013, p.6), alignment with business outcomes (2013, p.6) and establishment of appropriate processes (2013, p.6). In spite of the cost and time investment required to conduct UAT (Hambling and van Goethem, 2013, p.5; Otaduy and Diaz, 2017, p.213), it can be an effective way of evaluating prototypes before proceeding with a full development and build process (Putman, 2014, p.26).

Conducting UAT helps understand why users reject or accept a computer system (Davis, Bagozzi and Warshaw, 1989, p.982) and how usage of the system might work in a production environment (Otaduy and Diaz, 2017, p.212). Whilst a rigorous research design will collect useful data about what might engage users in a system, the UAT phase will assist in determining the “actual behaviour” when using a system design in practice (Davis *et al.*, 1989, p.984). UAT of a prototype solution yields further data that is not possible to collect through simply theorising about features to be incorporated outside a production environment (Blackwell, Burnett and Jones, 2004, p.54; Otaduy and Diaz, 2017, p.213).

A “prototype” is an interactive piece of software that users can use and that will respond to their requests in a simplified form. Prototyping can be hugely helpful in assisting end users of an application to visualise the design, and understand how the interface is intended to work (Putman, 2014, p.27) via a simulation (Babich, 2017, [online]). The online prototype was created using a combination of two software packages: Balsamiq (2008, [online]) and InVision (2003, [online]), both of which are popular applications widely adopted by large global organisations for the purposes of wireframing and prototyping respectively (Balsamiq Studios LLC, 2008, [online]; InVisionApp Inc., 2018, [online]). “Wireframes” were used to articulate the structure, content and functionality of how the interface to the software application might work (Babich, 2017, [online]). Wireframes are usually produced in an overly simplified form so as not to distract the user with more detailed graphical content, allowing a more focus on the functionality and usability of the interface itself (Balsamiq Studios LLC, 2018, [online]).

The prototype was built following the analysis of data collected during the interview phase as necessitated by the exploratory sequential design employed. As such, the design approach and further detail on the prototype is provided at the appropriate point in the next chapter, following the results from that phase of data collection.

Screenshots from the interactive prototype are shown in Figures Six and Seven below.

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| <br>Bentley Organic Window and Glass Cleaner 500ml<br>Only £3.49 | <br>Hema Tea Lights (100)<br>Only £3.49        | <br>Clear Polythene Plastic Food Bags 6x8" (1000)<br>Only £5.99 | <br>Equal Exchange Organic Raw Cane Sugar 500g<br>Only £2.49 | <br>Ecover All-in-One Dishwasher Tablets (68)<br>Only £14.99 |



Figure Six – Example wireframes

# Responsible Rewards - Your Impacts

< Done Show Me More

We analyse your spending across all outlets and let you know how you are doing against the issues you care about - here's some headlines...

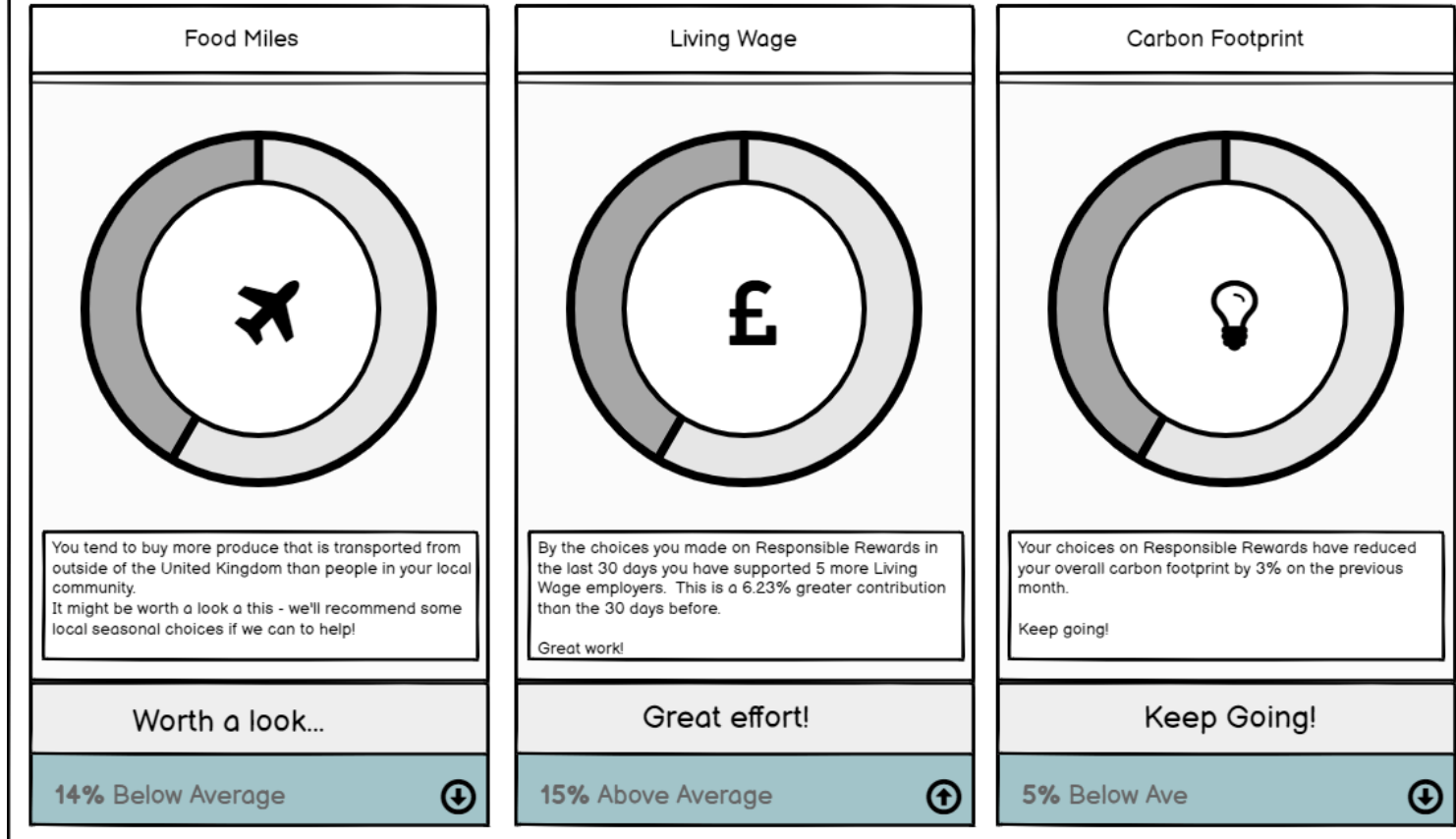


Figure Seven – Example wireframes



The prototype illustrated an application of gamification intended to address the barriers to engagement identified from the thematic analysis of the qualitative data collected from the semi-structured interviews.

Participants were selected using a combination of convenience and snowball sampling using the same approach adopted for the first phase of the design. A qualification question within the survey ensured that participants had not been involved in the semi-structured interview phase. The prototype was introduced to participants remotely using a video presentation. This presentation introduced the participants to the background, context, and objectives of the prototype. Participants were then able to interact with the online prototype, following which an online questionnaire was administered. The questionnaire both tested the themes identified in the interview phase and collected data about user's experiences and perceptions of the prototype. A similar approach of prototype demonstration, interaction and questionnaire administration was adopted by: Ahmad, Whitworth, Zeshan, Bertino and Friedman (2017), Otaduy and Diaz (2017) and Fang, Zhao, Wen and Wang (2017) in their research papers.

When using prototyping in project implementation or software development environments, there are practical and commercial considerations to address. These include firstly, a lack of time or knowledge in UAT participants (Otaduy and Diaz, 2017, p.213) and secondly a lack of documentary output or reusability from the prototype build process (Babich, 2017, [online]). This design mitigates the first consideration by using a video presentation to address knowledge issues and a dedicated fixed duration access session to the prototype to mitigate time considerations. The second consideration is not relevant to this thesis as the research objectives did not require the production of documentation, or the creation of a functional, deployable prototype. The objectives instead required that the findings of the first phase were tested to ascertain if they generalised to a larger sample.

In general, research applications of UAT differ from product development applications of UAT, as they are focussed on capturing knowledge rather than achieving the wide variety of potential business outcomes and commercial objectives which lie behind workplace applications of UAT. On this basis, it is both justifiable and appropriate to use a minimum of 40 online participants, based on a first phase sample of twenty semi-structured interviews.

## **Structured Questionnaire: Procedures**

The questionnaire was designed and administered online and comprised a total of 56 questions and statements grouped into sections by the researcher. The questionnaire was designed to test if the themes identified in the interview phase generalised to a larger sample, and if the prototype was effective in mitigating any of these barriers.

The initial page of the survey presented the user with three qualification questions to allow them to progress to the main data capture pages. This captured the participant's consent to take part in the research, confirmed they had watched the video, interacted with the prototype and ensured they had not previously participated in any stage of the research. The final page of the survey presented four optional questions collecting age, gender and household income data as well as participant's email addresses, all of which were clearly identified as optional. This demographic information was collected to permit identification of any trends relating to levels of engagement split by these categories if it transpired to be required at a future point. Email address was collected in case the researcher needed to clarify any responses with participants.

In between the initial and final pages of the survey were a maximum of 49 questions and statements for testing divided into three sections. The first, comprising a maximum of 23, tested whether the themes identified in the interviews generalised to this larger sample. The second section collected data on the effectiveness of the prototype in addressing the barriers to engagement, asking a maximum of 21 questions. The final section of dedicated data capture asked a maximum of five general questions on the participant's perceptions of the prototype to measure their overall acceptance of the solution.

Question response types within the survey were a mixture of seven-point Likert scales, multiple choice, tick boxes, ranking lists and free text options. The latter were used to collect additional contextual data to support the "Yes / No" responses and provide insight into understanding why certain choices were selected (Gillham, 2008, p.32). Likert scales are a method of measuring attitudes towards pre-defined statements or concepts (Bryman, 2016, p.154), primarily used to measure the participant's level of agreement or disagreement with the statement (Oppenheim, 1992, p.187; Maeda, 2015, p.15; Bryman, 2016, p.692). They are generally considered to be a reliable approach for testing

statements in this context (Oppenheim, 1992, p.200), as well as being flexible and easy to administer in both written and online contexts (Revilla, Saris and Krosnick, 2014, p.75).

There is significant debate in research methods literature surrounding the critiques of Likert scales and how best to structure an approach using the technique (Maeda, 2015, p.15). Likert scales can be considered “blunt” (Bryman, 2016, p.154), can sometimes produce extremes of responses from participants (Netemeyer, Haws and Bearden, 2011, p.10) or may fall prone to participants providing what they think is a “socially acceptable” response (Netemeyer *et al.*, 2011, p.10), despite it not being their true attitude. Equally, participants cannot state *why* they chose an option in the scale, although this can be to an extent mitigated by the use of free-text questions, as employed in this survey (Gillham, 2008, p.32). Data collected using Likert scales may lack reproducibility, meaning that in some cases the pattern of responses becomes more important than the numerical score itself (Oppenheim, 1992, p.200). Further technical constraints can also influence the effectiveness of data collection using Likert scales. These include the possibility of bad mapping of scales to the underlying concepts by the researcher (Revilla *et al.*, 2014, p.74), or issues where participants may not ascribe the same meaning or significance to each of the options (Foddy, 1993, p.175).

The adoption of Likert scales with either five or seven points is most common in current practice (Jacoby and Matell, 1971, p.496; Preston and Colman, 2000, p.2; Bryman, 2016, p.153). Scales with fewer than five tend to be less reliable (Preston and Colman, 2000, p.11) and scales larger than seven are sometimes adopted but tend to have limited advantages (Colman, Norris and Preston, 1997, p.356; Preston and Colman, 2000, p.2).

Whilst Likert himself initially suggested a five-point scale (Revilla *et al.*, 2014, p.75), researchers from the 1970s onwards tends to favour larger scales (Lissitz and Green, 1975, p.10), suggesting they yield better quality data (Revilla *et al.*, 2014, p.75). Foddy (1993) suggests that a seven point scale is the minimum required standard, based on a combination of studies of reliability and validity conducted by social scientists (1993, p.166). This view that a seven point scale is optimal, or reliability increases in proportion to the number of points is supported by multiple authors (Lissitz and Green, 1975, p.13), but generally no greater increase in reliability is observed above seven points (Colman *et al.*, 1997, p.356; Preston and Colman, 2000, p.2). Seven point scales have also been found

effective in an online context (Finstad, 2010, p.108) negating some of the critiques of larger scales associated with physical or offline completion.

Whilst Oppenheim (1992) considers the number of points in the scale to be “arbitrary” (1992, p.200), there are other authors who prefer to support a five-point scale approach. These include Gillham (2008), who suggests that seven-point scales are redundant as a result of participants not utilising the full range of the scale (2008, p.32). Revilla *et al.* (2014) suggest that a five-point scale yields better quality data than a seven or eleven point equivalent, due to the decrease in validity at higher scale numbers (2014, p.88). Whilst it is acknowledged there are multiple arguments as to the number of points to use in a Likert scale, this thesis supports the view of Oppenheim (1992, p.200) that the choice is arbitrary, given the variety of strong arguments and conflicting viewpoints. In the case of this research, a seven-point scale was chosen as most appropriate to address the research objective for three main reasons.

Firstly, the support in psychological and sociological research for seven points scale is compelling (Lissitz and Green, 1975, p.10). Secondly, the themes identified from the first phase of the research were varied and subjective and a wider scale, in order to measure the finer degrees of agreement, was desirable. Finally, the findings of Finstad (2010) were significant in choosing a seven-point scale, as his research indicated it was more effective than a five-point equivalent in an online survey investigating usability (2010, p.104) a key consideration for this thesis.

The following section details how the data collected by the online questionnaire was analysed.

### **Structured Questionnaire: Analysis of Data Collected**

A total of 50 participants took the survey after watching the introductory video and interacting with the online prototype. Six of these participants either did not fully complete the survey process or were disqualified due to having participated in an earlier stage of the research. These six sets of data were discounted from the results leaving a total of 44 complete responses. The data received from these were downloaded and analysed according to the steps discussed in the following paragraphs.

The analysis for the twelve questions with responses not using Likert scales was conducted in Excel using the summarised output downloaded from the online survey platform. Analysis involved either a manual comparison of summarised results, or thematic analysis of qualitative data. The latter was conducted using the procedures as executed for the qualitative phase, explained earlier in this chapter. The former involved comparing summarised data presented in histograms against anticipated outcomes from the first phase.

Data collected where responses were on a seven-point Likert scale were analysed by scoring and comparison to the neutral score using the median average, with the midpoint begin a score of four. Firstly, each of the 41 questions were assigned a score ranging from one to seven, with four being the neutral position on the seven point scale (Oppenheim, 1992, p.196). These scale weightings were assigned with a higher score being favourable toward the generalisations being tested from the first phase of the research. Initially, the data downloaded from the survey was used to calculate a median average. The Likert responses were then grouped into the themes they were designed to test and results were written up on these groupings or pools of questions, to avoid placing too much emphasis on any individual Likert responses (Oppenheim, 1992, p.197; Kostoulas, 2013, [online]).

The selection of median was to mitigate critiques of the alternative of a weighted average mean approach, noted by Kostoulas (2013, [online]). This critique is principally based on the “psychological distance” between the various points on the scale cannot be deemed to be uniform (Kostoulas, 2014, [online]). This suggests that median scores are a more reliable method for identifying the “average” response or “central tendency” in ordinal data (Kostoulas, 2014, [online]).

The scoring approach is shown in Table Three below.

Median Score From	Median Score To	Category Name
0.00	2.99	Disagree
3.00	3.99	Somewhat Disagree
4.00	4.99	Inconclusive
5.00	5.99	Somewhat Agree
6.00	7.00	Agree

Table Three – Score categorisation bandings

It is important to note that the intention of this data analysis reflects the aims discussed in the previous section and the overall research objectives. Firstly, it was intended to test if the users of the prototype “accept” the proof of concept as an effective contribution to removing barriers to engagement in Sustainability Accounting and Reporting (SAR) data. Secondly, it was also intended to test if the themes identified from the first phase of research generalised to a larger sample. The sample size of 44 completed responses as justified in earlier sections was large enough to be effective in the context of user acceptance testing (UAT), but not large enough to justify the application of any statistical testing. As such, the conducting of any further statistical testing is not appropriate, and the simplified approach to scoring supports arguments that further complexity in scoring seldom yields further benefit (Oppenheim, 1992, p.195).

The groups of data were then written up into a summary table, combined with the results of the qualitative analysis of the 45 statements in the supporting qualitative data and compared with the conceptual modules derived from the first phase of the research. The results are summarised in detail in the second part of chapter four.

The following section of this chapter provides an overview of the ethical implications of this design, before a final summary section closes the chapter.

## Overview of Ethical Implications

### Structure and Approach

This thesis adopted a deontological position on ethics, in that it was guided by a predetermined set of ethical rules and principles (Saunders *et al.*, 2019, p.253) which governed the behaviour expected of the researcher. These rules were comprised of those mandated by the researcher's institution and an underpinning framework selected by the researcher. A deontological position on ethics was adopted in preference to a teleological position (Saunders *et al.*, 2019, p.254), where the consequences of an action are evaluated to ensure the benefits outweigh any detriment caused. This choice was for three main reasons. Firstly, it avoided the subjectivities and ethical dilemmas often associated with a teleological position (Saunders *et al.*, 2019, p.254). Secondly, it ensured rigour and consistency in the approach to ethics within the research design, which in turn produced reliable results in subsequent analysis (Bryman, 2016, p.134; Hays *et al.*, 2016, p.174). Thirdly, it ensured conformance with the requirements of the host institution and provided an exemplar standard with respect to ethics, with a view toward potential future research funding (ESRC, 2016, [online]).

When finalising this research design, the researcher reviewed all aspects of planned activity prior to collecting data and obtaining institutional approval to ensure the highest ethical standards were maintained in line with the selected frameworks and standards. The standards and considerations were regularly reviewed during the execution of the research (Bryman and Bell, 2015, p.150) to maintain this central pillar of the research design (Bryman and Bell, 2015, p.129).

## **Underpinning Ethical Guidelines and Frameworks**

In addition to the mandatory institutional ethical approval, the ethics framework provided by the Economic and Social Research Council (ESRC) was adopted.

### **Underpinning Ethical Framework**

The adoption of guiding principles from an established framework such as that provided by the Economic and Social Research Council (ESRC), and in particular their “six principles” of ethical research (ESRC, 2015, p.4), provided a solid foundation upon which to approach the complex subject area of ethics (Bryman, 2016, p.136). The selection of an appropriate standard is considered essential for ethical research (Bryman, 2016, p.144), providing robust, recognised, defensible standards which the researcher can adopt in the design and execution of research.

Several other frameworks were reviewed for suitability during the research design phase, including that provided by The Chartered Association of Business Schools (2015) which detailed specific, relevant guidance around consent and confidentiality with respect to online media (2015, p.6). The principles summarised in Section 2.4 of the ESRC guidelines addressing “Internet-Mediated Research” (ESRC, 2015, p.34) drew attention to similar areas in a more detailed way, reinforcing the need to pay heed to issues of privacy, consent and covert observation. The ORBIT Guidelines for Responsible Research Innovation (ORBIT, 2018, p.1) were also reviewed and subsequently discounted. Whilst reputable, well-advised (ORBIT, 2020, [online]) and widely adopted at multiple institutions (ORBIT, 2013, [online]), the guidelines and framework were considered less detailed and stringent than those of the ESRC.

For each aspect of the research design reference was made back to the ESRC guidelines when considering the ethical implications of that activity. Ultimately, this underpins the reason for selecting the ESRC guidelines: they provided strong, detailed, incremental, clear guidance including the aforementioned specific guidelines on internet-based research (ESRC, 2015, p.34) and social media (ESRC, 2015, p.10), both of which are fundamental to the this research.



## **Ethical Implications, Considerations and Mitigations**

This section is structured around four ethical principles, commonly used by many authors (Guba, 1990, p.17; Braun and Clarke, 2013, p.62; Bryman and Bell, 2015, p.134; ESRC, 2015, p.34; Wallace and Sheldon, 2015, p.269; Bryman, 2016, p.125; Saunders *et al.*, 2019, p.244) namely: consent, no harm, privacy and deception. Whilst it is acknowledged that researchers may adopt different stances and approaches to addressing ethical considerations (Bryman, 2016, p.123), these four principles both fulfil and promote standards for exemplary research, and are specifically appropriate to the domain of social media. The principles also help to highlight issues around data collected and the balance between privacy and perceived surveillance (Moss, Kennedy, Moshonas and Birchall, 2015, p.287; Zuboff, 2019, p.11).

### **Consent**

Both phases of the research design required the acquisition of informed consent from all participants *prior* to data collection. The Information Commissioner's Office (ICO) defines consent as occurring when "the individual has given clear consent for you to process their personal data for specific purpose" (I.C.O, 2018a, p.14). The concept of "informed consent" further elaborates on this by stating that participants should be "given as much information as might be needed to make an informed decision about whether or not they wish to participate" (Bryman, 2016, p.691) in the research. Obtaining such explicit informed consent from participants prior to data collection is essential to designing ethical research (Wallace and Sheldon, 2015, p.270) and ensures data collected is only used for the purpose intended, a requirement of the General Data Protection Regulation (GDPR). In the online context, participants may not always be aware that data is being collected implicitly, or their digital "footprints" and activities examined (Mayer-Schönberger and Cukier, 2013, p.152; Moss *et al.*, 2015, p.287; Manetti and Bellucci, 2016, p.995), so care was taken to clearly address the process of consent through the forms provided.

The GDPR is a more detailed and stringent evolution of European Union data protection legislation introduced into UK law in 2018 (I.C.O, 2018a, p.167) and will be further addressed in a following section. A consent form and webpage ensured that such consent was actively provided by all participants prior to data gathering (Wahyuni, 2012, p.74) and recorded for future reference by the researcher. The form included a project information

sheet with clear, written information as to the context and purpose of the research and the intended use of data gathered (Bryman, 2016, p.132). It provided an explanation of participant's rights to withdraw at any time without penalty. The researcher's contact details were made available for any questions participants may have had prior to any data being gathered.

The researcher paid special attention to not influence or coerce participants (French and Raven, 1958, p.83; Braun and Clarke, 2013, p.87), exert undue influence or abuse power during the process (French and Raven, 1958, p.83; Braun and Clarke, 2013, p.89). Where participants were introduced to the researcher via Responsible 100 (R100), the ethical principles, project information sheet and form were explained to representatives of R100 prior to the introduction being made to ensure principles were adhered to and followed as they would be by the researcher in person.

### **Privacy**

Public awareness of data protection and privacy issues has likely never been higher. This is in part due to the recent strengthening of UK data protection law with the introduction of the General Data Protection Regulation (GDPR). It is illustrated by an increase in self-reported complaints and subsequent fines by The Information Commissioner's Office (ICO) in the months following the introduction of the GDPR (McQuater, 2018, [online]). The GDPR articulates a number of rights with respect to restricting data processing (I.C.O, 2018a, p.83) and erasure (I.C.O, 2018a, p.77) which were of particular concern for this research. These rights state that data should only be used for the specific purpose it was collected and should not be maintained or preserved for longer than necessary. Individuals may also request the deletion of records held on them, or request their data be returned to them. These rights were preserved by commitments to only use data for this specific research project and to delete raw digital information by a specific date noted in the information provided.

This research design involved the collection of personal data from consumers and business professionals alike, which in some cases, could be deemed sensitive. In almost all cases, however, it could lead to exposure of participant's identity, or reveal information about their private lives which they could reasonably expect to keep private. Therefore,

maintaining participant privacy and anonymity during all stages of data collection, processing and storage was a key area of ethical concern for the research of this thesis (Braun and Clarke, 2013, p.101; Bryman, 2016, p.131). All data was stored digitally (not printed) on encrypted, password protected, non-shared hard-drive storage (Bryman, 2016, p.133). Anonymity was preserved by carefully reviewing each interview transcript and removing any means of personal identification either direct or indirect (Remenyi, 1998, p.111), following the principles suggested by Bryman (2016, p.128). This included in some cases removing references to a participants, acquaintances, suppliers, customers, associates, shopping habits, brand choices, previous employers or geographical location in order to ensure identities were not indirectly compromised (Bryman, 2016, p.133; Saunders *et al.*, 2019, p.245). Privacy was respected at all times, and the researcher ensured no discussions conducted during or around the interviews, or questionnaire responses were given to any outside agents in raw form (Saunders *et al.*, 2019, p.247), and no covert methods were used at any time (Bryman, 2016, p.132).

Ethically, there is a marginal distinction between the use of so-called “dataveillance” techniques for purposes that may be perceived to be in the interests of wider society (Ashworth and Free, 2006, p.107), such as national security (Sarathy and Robertson, 2003, p.111), or public health (Foxman and Kilcoyne, 1993, p.117; Caudill and Murphy, 2000, p.9; Lawrie, 2020, [online]), and perceived unacceptable exploitation of personal privacy for commercial gain (Kelion, 2020, [online]). The collection of online personal data, behavioural data and preferences for commercial benefit is what Zuboff (2019) refers to as “surveillance capitalism” (2019, p.11). The trend to use this data for modelling, simulations (Linder, 2019, p.76) and ultimately behavioural manipulation is what authors who share the view of Zuboff (2019) are primarily concerned with. In fact, Zuboff (2015) stated clearly in an earlier work that a “new form of information capitalism aims to predict and modify human behaviour as a means to produce revenue and market control.” (Zuboff, 2015, p.75). This fine line or “tenuous balance” (Sarathy and Robertson, 2003, p.111) between the use of behavioural “nudges” (Halpern, 2015, p.57; *The Economist*, 2017, [online]) and surveillance capitalism (Zuboff, 2019, p.11) is a subjective ethical conversation addressed in chapter five. In terms of the ethical implications to methodology, these concerns were addressed by providing absolute clarity to all participants, using the consent forms and project information sheets as discussed in the previous section.

### **No Harm or Deception – Knowingly or Otherwise!**

The considerations addressed in this section are centred around the principle that no harm will be inflicted on participants, or society during the conducting of the research (Wallace and Sheldon, 2015, p.269). Whilst institutional ethical approval processes aim to ensure physical safety of participants during the research conducted, these do not entirely explore the subjective concept of “harm” (Bryman, 2016, p.126), or unintentional deception caused by other factors or events. For the purposes of this thesis, the explanation of harm provided by Bryman (2016) is used to define the scope of consideration as: “physical harm, harm to participant's development, loss of self-esteem and stress” (2016, p.126). All of the following three considerations were anticipated to have the potential to cause harm to participants or the researcher if not effectively managed and mitigated.

Firstly, the implications of the results of the research should be considered. The underpinning philosophy of this thesis is to use technology for the benefit of wider society, but this must not be at the detriment of individuals or organisations who participate in the project. For example, the exposure of certain Sustainability Accounting and Reporting (SAR) practices within a participating organisation could be perceived negatively when made public. This may adversely impact the reputation of an organisation, put them at a competitive disadvantage, or compromise participant safety by discussing issues relating to internal processes, and issues of power and politics (Bryman, 2016, p.141). Results were therefore interpreted and presented in general terms.

Secondly, researcher bias is a significant ethical consideration. Researchers often explore areas of the social sciences they are passionate about, as was the case here. As such steps must be taken to ensure their views, personal experiences and upbringing will not influence the research, even subconsciously (Saunders *et al.*, 2019, p.136). This is often very difficult to fully control, but methods such as reflexivity (Wallace and Sheldon, 2015, p.267) in a researcher's daily log and awareness of the subjectivities of an interpretivist approach (Schwandt, 2000, p.203). This research was self-funded by the researcher and as such avoids the potential influence of external parties providing the funding but does not avoid the influence of the researcher themselves. This was mitigated by the reflective log and supported by both the supervisory team and the institution's ethical approval process.

Finally, issues of personal safety during data collection. Whilst it is acknowledged that these are largely addressed by the ethical approval process for commencing research, the Coronavirus (COVID-19) pandemic occurred after such approval was given. As detailed earlier in this chapter, the research design was revised to reflect the potential of this unprecedented occurrence to cause harm. This necessitated conducting the data collection remotely, using digital solutions and ensuring that social distancing measures were maintained at all times for both participants and the researcher, even when using the internet as a tool (Saunders *et al.*, 2015, p.248).

Some of the biggest ethical controversies of recent times have been caused by unintentional (or intentional) deception of participants (Bryman, 2016, p.121). The research of this thesis does not deliberately aim to deceive or harm participants as an inherent part of the design or observe their behaviour in any way other than that explained prior to data collection. No further data collection other than that detailed in the interviews, prototype or survey instruments was completed. Therefore, full transparency as to the aims, outcomes and methods of data collection was provided at all times through project information sheets and consent forms (Wahyuni, 2012, p.74; Bryman, 2016, p.132).

## Section Summary

The mitigations for all key ethical considerations are summarised in Table Four below.

Ethical Consideration	Mitigation
Consent	<ul style="list-style-type: none"> <li>• Informed consent in written form prior to data collection (Wallace and Sheldon, 2015, p.270; Bryman, 2016, p.131).</li> <li>• Use of a Consent Form (ESRC, 2015, p.29; Bryman, 2016, p.131; Creswell and Creswell, 2018, p.96).</li> <li>• Use of a Project Information Sheet (Bryman, 2016, p.132) – see appendices.</li> <li>• Ethics Approval Form (Bryman, 2016, p.134) – see appendices.</li> <li>• Compliance with consent requirements of the General Data Protection Regulation (GDPR) - (I.C.O, 2018a, p.167).</li> <li>• Clear means of contact with the researcher to address questions.</li> <li>• Awareness of coercion and power influence during recruitment of participants (ESRC, 2015, p.30).</li> </ul>
No Harm or Deception	<ul style="list-style-type: none"> <li>• Ethical Research Principles Checklist (Bryman, 2016, p.125).</li> <li>• Strong Research Design – Checklist (Saunders <i>et al.</i>, 2015, p.237).</li> <li>• ESRC “Six Principles” and Checklists (ESRC, 2015, p.36; Saunders <i>et al.</i>, 2015, p.233).</li> <li>• Compliance with confidentiality requirements of the General Data Protection Regulation (GDPR) (I.C.O, 2018a, p.120).</li> <li>• Adopt “No Harm” principles (Wallace and Sheldon, 2015, p.269).</li> <li>• Use Institutional Ethical Approval processes and Supervisory Team – to address harm and research funding implications.</li> <li>• Mitigate researcher bias through reflexivity (Saunders <i>et al.</i>, 2019, p.136). (Wallace and Sheldon, 2015, p.267).</li> <li>• Daily log in “Day One” (Bloom Built Inc., 2019, [online]).</li> <li>• Maintaining social distancing for Coronavirus (COVID-19) safety.</li> <li>• Provide full transparency through project information sheets and consent forms (Wahyuni, 2012, p.74; Bryman, 2016, p.132).</li> </ul>
Privacy	<ul style="list-style-type: none"> <li>• Compliance with data processing (I.C.O, 2018a, p.83) and erasure (I.C.O, 2018a, p.77) requirements of the General Data Protection Regulation.</li> <li>• Preserve anonymity in transcription of data (Remenyi, 1998, p.111; Braun and Clarke, 2013, p.101; Bryman, 2016, p.131; Saunders <i>et al.</i>, 2019, p.245).</li> <li>• Digital encryption and responsible storage of data (Bryman, 2016, p.133).</li> <li>• Special attention paid to any sensitive personal data (Remenyi, 1998, p.113).</li> <li>• No sharing of raw research data with Responsible 100 (Saunders <i>et al.</i>, 2019, p.247).</li> </ul>

Table Four – Summary of ethical considerations and mitigations

## Summary & Reflection

The following two sections both summarise and reflect on the research design described herein, acting as a concluding section to this chapter.

### Reflection: The Influence of the Researcher on Design Choices

Prior sections of this chapter have addressed the research design, its justification and the procedures adopted, including potential methodological biases and how these were mitigated. This section addresses the influence of the researcher on the research processes and outcomes, and how this was considered and factored into the approach taken. The researcher themselves are by nature “implicated” in the construction of the knowledge created by the research design in a multitude of ways (Bryman, 2016, p.388). These include principal methodological influences such as: methodological choices, values, biases, decisions and the “mere presence” of the researcher (Bryman, 2016, p.695).

Bryman (2016) identifies three potential approaches to mitigation of these influences. These include: “philosophical self-reflection”, “methodological self-consciousness” and “methodological self-criticism” (Bryman, 2016, p.388). The following paragraphs will be structured to address each of these in turn, in the context of this research and the researcher.

The act of “philosophical self-reflection” as described by (Bryman, 2016, p.388) is an important technique for a researcher to apply, especially at the point of interpreting data (Habermas, 1987, p.181; Saunders *et al.*, 2019, p.136). It should involve a stringent examination of the researcher’s beliefs and assumptions (Lynch, 2000, p.29) in order to minimise their influence and impact on the processes of research. In the case of this research a daily reflective log was adopted to record and raise awareness of potential implications, using the “Day One” (2019, [online]) application as noted in Table Four. This highlighted two key areas of interest for discussion herein. Firstly, the underpinning philosophy of this thesis was to use technology to invigorate key areas of social importance and stimulate engagement amongst stakeholders. The researcher has for the duration of their professional career been involved with the provision of technology solutions to customers, as discussed in chapter one. This means they have a predisposition to “default”

to using technology as a potential solution, and view many problems from this worldview, or approach research execution and problem-solving with the methods and processes common to this professional arena. Whilst the use of technological solutions was a key tenet of the objectives of this research, it was also a potential source of bias. The researcher recognised and had to be mindful of this predisposition at all stages, and ensure they considered all options (technical and otherwise) before making and justifying research design decisions. It was important to be led by the data and best practice in research methods rather than influence them with professional predispositions. Some such practical discussions around rollout and integration are also discussed in chapter five. Secondly, the influence of upbringing is an important consideration for interpretivist researchers (Bryman, 2016, p.388; Saunders *et al.*, 2019, p.136) and coupled with the natural desire and enthusiasm for a successful project can also be a potential source of bias. For both such considerations, reflexivity was an important tool applied in order to minimise the impact of confirmation bias during data collection.

Considerations of “methodological self-consciousness” relate to the researcher’s relationships to the subjects of data collection (Bryman, 2016, p.388) and how they might influence the responses received. In the case of this research, the principal considerations related to the researcher’s personal or professional relationships with interview subjects, or the influence of the networks on which information about the research was shared. To address the former consideration, the researcher made a conscious decision to not interview any person who had worked directly with them in a professional context, or who was related to them. This was in order to avoid the influence of power relationships (French and Raven, 1958, p.83), any potential ethical considerations (Wallace and Sheldon, 2015, p.267; Creswell and Creswell, 2018, p.98) and the possibility of response bias (Malhotra *et al.*, 2012, p.97). Response bias could manifest in several different ways, such as in the form of acquiescence to the researcher’s prevailing view (Netemeyer *et al.*, 2011, p.10; Bryman, 2016, p.216) or respondent’s provision of “socially-acceptable” responses (Bryman, 2016, p.217).

The latter consideration is particularly pertinent to this research, as the previously-discussed “value action gap” (Devinney *et al.*, 2010, p.51; White, Hardisty and Habib, 2019, [online]) addresses. This social phenomenon describes how people may hold values of (for example) sustainable and responsible purchasing, but are not compelled to act on these in



their day-to-day lives. Therefore, participants may feel inclined to talk about *how* they want to behave but not *actually* behave like that when influenced by the views of the researcher or their networks. By maintaining an “impersonal” distance from the participants the researcher was able to minimise the impact of this on their responses as the research was presented in a “faceless” fashion.

Finally, “methodological self-criticism” relates to the researcher being critical of the design choices made and aware of the influence of their views, upbringing and background on decisions made (Bryman, 2016, p.388). Key areas of influence here relate to the researcher’s personal predispositions to use software tools (such as the prototype) for data collection, computer-based methods of analysis such as Nvivo (2018, [online]) and indeed the aforementioned reflective journal application “Day One” (2019, [online]). Reflective logs provided the necessary medium and platform to consider and raise personal awareness of these issues, in order to mitigate them. In addition, considerations of Nvivo (2018, [online]) as a medium for data analysis were discussed earlier in this chapter. The researcher has historically used both manual thematic analysis and software-based approaches, and on reflection found the latter to be more a more effective medium. This was because it allowed time to focus on the analysis, rather than the administration tasks of adding together themes, and provided a focus and systematic technique to the reduction process. It also enabled the possibility of integration and export of the data to other mediums if required, so was overall deemed to be a more appropriate approach.

In order to ensure that reflexive practice was embedded into the research, the practice continued throughout data collection, analysis and write-up. A further reflection is included in a logical location in chapter five to summarise the impact of the research on the researcher. The following final section of this chapter draws together all areas covered into a summary.

## **Chapter Summary**

This chapter has discussed all aspects of the research design executed for this thesis, from the underpinning philosophical position to the justification of specific parameters used in the design and execution, providing critical analysis on all elements.

The research was approached from the philosophical worldview of pragmatism. The research was executed using a mixed methods approach, with an exploratory sequential design that drew on the strengths of both qualitative and quantitative methods to mitigate weaknesses in each isolated method. The adoption of a mixed methods design was justified based on three key reasons: appropriateness to the objectives of the research, suitability to the research context and philosophical alignment to the pragmatism worldview. Considerations relating to any paradigmatic, philosophical, methodological, operational and practical concerns with the approach taken were addressed

The impact of the COVID-19 pandemic on the research design was explained alongside the steps taken to modify the research to take place in a socially distanced environment. Following an overview section on the pilot study, both qualitative and quantitative sections of the exploratory sequential design were explained and justified in detail. The research design consisted of an initial qualitative phase of twenty semi-structured interviews. This was followed by a subsequent quantitative phase which used an online prototype and survey instrument to test if themes identified in the qualitative phase generalised to a larger sample size. In the final substantive section, specific ethical considerations and their mitigations were discussed grouped under areas of consent, no harm, privacy and deception.

The next chapter of this thesis presents the results of the research.

## **CHAPTER FOUR - RESULTS**

### **Qualitative Phase: Results of Thematic Analysis**

The first section of this chapter presents the results of the analysis of data collected from the twenty semi-structured interviews. The chapter is concluded by a section discussing how the results influenced the subsequent design of the prototype used in the second phase of the research.

### **Key Barriers to Engagement and Supporting Themes Identified**

The themes identified from analysis of the data were grouped into categories to address research objective two. The first four groups “Public Opinion”, “Barriers”, “Antecedents” and “Mediators” influence how stakeholders engage in SAR. The use of concepts such as antecedents and outcomes as articulated in chapter two, is in line with both the approach adopted by many research papers in similar topic areas (Dessart, 2017, p.382) as well as the Decomposed Theory of Planned Behaviour (Taylor and Todd, 1995, p.162). The latter theory reflects the wide variety of antecedent influences on user behaviour for those adopting a technology system (Taylor and Todd, 1995, p.151), and is resonant with the themes discovered in this phase of the research.

Each category is explained in more detail in the following sections, and their relationships to each other are illustrated in a conceptual model shown in Figure Eight. Within each category in the model, the most prominent themes are identified and shown on the model, and any relationships between different themes across the categories highlighted with dashed lines. In some cases, themes appear in multiple categories, reflecting the duality of their influence on the process.

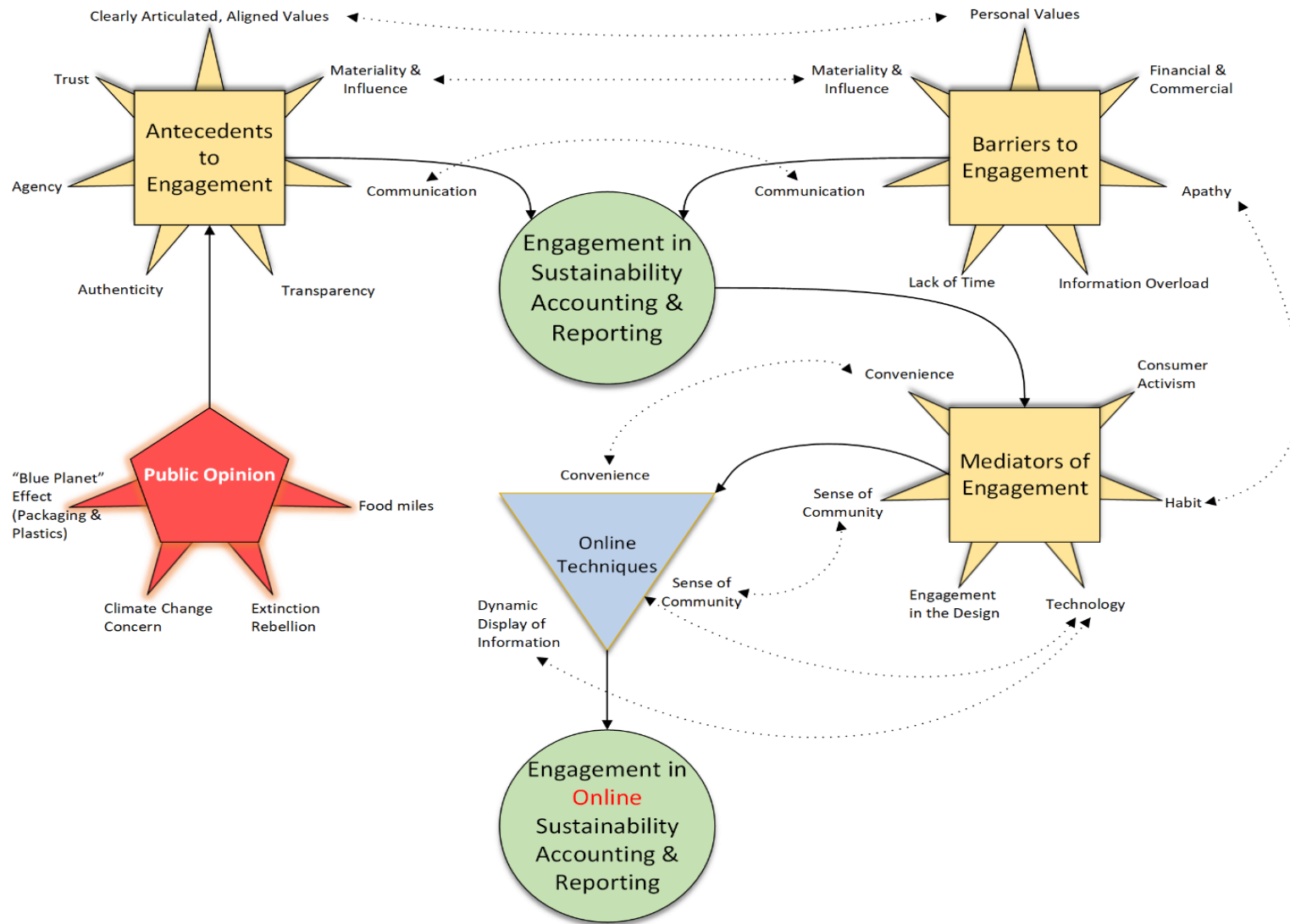


Figure Eight – Antecedents, barriers and mediating influences

## Antecedents to Engagement

Themes within this category are those which precede stakeholder engagement in Sustainability Accounting and Reporting (SAR). Such conditions positively influenced stakeholders to become engaged in SAR, and in many cases were heavily influenced by themes within the category of “Public Opinion”, addressed in a later section.

A total of seven clear antecedent themes were identified: “Clearly Articulated, Aligned Values”, “Transparency”, “Authenticity”, “Agency”, “Trust”, “Communication” and “Materiality and Influence”. In line with earlier commentary on duality of influence the theme of “Materiality and Influence” is addressed under “Barriers”, in a later section. Within these seven themes, the most prominent was “Clearly Articulated, Aligned Values”. Data coded under this theme related to how the mission and values of the organisation was explained and communicated to stakeholders, the alignment of these values and the subsequent influence on their propensity to engage with SAR data.

Producer stakeholders frequently cited the need for the mission and values of their organisation to align with those of their stakeholders for them to consider engaging with their SAR output. Consumer stakeholders often spoke of how their personal values on key issues such as the environment, animal testing and packaging motivated them to investigate an organisation’s performance or approach in that area. This is encapsulated by comments such as:

*“...[consumers] want to feel like they’re shopping from a business that aligns with their values, they want to feel like they’re shopping from a business that is doing their part, that is taking action on the things that matter to them, and they want to feel that they’ve taken that step to do that..”*

It was clear from the data that simply articulating the values was not enough to create an antecedent condition for engagement in SAR. Interviewees often cited the need for the values articulated to stakeholders to be transparent and perceived as authentic in order to be accepted as genuine. Themes relating to this were coded under “Transparency”, “Authenticity” and “Trust” of the values articulated. Clear examples of this were evident in responses such as:

*“..the companies that get it done best are the ones that communicate before they have got it perfect and just say, "Look, yes, we are trying. We are getting there.”*

Related but albeit less prominent themes pertaining to “Communication” were also identified, where participants articulated that the process of communicating itself creates engagement, and how such communication also affected engagement in the brand and its values. Therefore, it was intrinsically linked to stakeholder perception of an organisation. This is summarised by a participant describing what they perceived to be an exemplar of this approach:

*“...they are communicating to you all the way through their whole... everything they are doing, in every space and place, they are communicating about what they are doing.[...] you will probably feel a level of connection and commitment to that brand because all the time, [...] they are reinforcing how much they care, what they are doing or what journey they are on.”*

Several participants also noted the criticality of organisational values being tightly integrated into the daily operations of the organisation. These internal values (if effectively and appropriately communicated to stakeholders) form a critical part of the “nudging” necessary to prompt stakeholders to engage in sustainability information about products and services. The importance of communication to address the so-called “value-action gap” is highlighted by both Visser (2011, p.201) and Devinney *et al.* (2010). The emphasis on values resonates with the view of Zaichkowsky (1985, p.342), who describes “involvement” as being based on foundational values.

Stakeholders also appeared to be more likely to become involved in SAR if they felt they could make a difference. This is highlighted by themes coded under “Materiality and Influence” and “Agency” in the process and was prominent in comments such as:

*“..I think my belief is that people will engage if they think that they have some agency in the process..”*

*“..where we try to work is to increase people’s agency so that they have the right information, but it also comes to them where they are able to make a change...”*

When considering “Materiality and Influence”, it is important to be reminded that most themes identified as antecedent conditions were also a barrier to engagement in the process of SAR. For example, some stakeholders highlighted they were more likely to engage with SAR information for a material, valuable purchase than lower value items such as fast-moving consumer goods (FMCGs):

*“...higher priced items or kind of items that you buy irregularly, you might do more research on. But everyday items, you tend not to...”*

This suggested the materiality of a purchase was both a barrier, for FMCG-type purchases and an antecedent condition for purchases where prior research by stakeholders was likely. Such items referenced by interviewees included: cars, expensive household items, utilities contracts, pensions and mortgages.

The same duality was found in themes relating to “Trust”, “Values” and “Authenticity”. In these cases, barriers would exist where organisations were not trusted by stakeholders, or their values were dissonant, or perceived as inauthentic. Antecedent conditions would exist for the reverse scenario: trusted organisations with aligned values perceived as authentic. This duality is a common trend identified throughout the findings, illustrated on the model by dashed lines connecting related themes. It reflects the inherent complexity of the challenges discussed earlier in chapter two, within both sustainability (Visser, 2005, p.45; Freeman *et al.*, 2010, p.245) and engagement (Cheung *et al.*, 2015, p.248; Hung, 2017, p.59).

In summary, this section has discussed the six key themes which have been categorised as antecedent conditions for stakeholder engagement in SAR. The most prominent theme was “Clearly Articulated, Aligned Values”. In some cases, it was found that antecedent conditions exist in the reverse of perceived barriers such as “Materiality and Influence”. Themes relating to antecedent conditions were heavily influenced by key current topics of public opinion.

### **Public Opinion as an Influence on Antecedent Conditions**

Chapter one of this thesis identified the significant influence of public opinion on Sustainability Accounting and Reporting (SAR) citing multiple examples. Such shifts in

public perceptions, particularly in relation to the climate emergency, is likely to track the shift in the so-called “Overton Window” towards climate emergency issues (Williams, 2019, [online]). The Overton Window is a concept in political science that highlights the range within which ideas and concepts are socially acceptable and will likely get broad support if a politician were to campaign on them (Mackinac Center for Public Policy, 2019, [online]). The movements in the Overton Window are likely to influence and amplify public perception, generate news coverage and increase the permeation of the idea as an antecedent to engagement in SAR. This shift was noticeable as participants provided more detailed responses with respect to this topic in later interviews compared with those which took place in the pilot study.

It is likely that the momentum of such public opinion creates greater engagement in a concept through a sense of community. This concept will be revisited in a later section. The use of community membership as a concept for building brand engagement (Vernuccio *et al.*, 2015, p.714) or as a generator of intrinsic motivation (Dessart, 2017, p.379) were concepts noted in the literature review chapter. The below comment from an interviewee suggested that the more a community builds around an idea, or the Overton Window shifts, the more likely it is to influence engagement in SAR:

*“One of those is community. People like to be somewhere in the middle of a norm, they don’t like to be... Some people like to be on the leading edge, but most people do not like to be lagging behind. So, I think one of the things is to shift what is normal in everybody’s eyes, and that is happening.”*

Climate change and the climate emergency was by far the most prominent theme in the category of public opinion. Interviewees referenced themes such as product packaging, food miles, carbon footprints, single-use plastics prominently, with secondary themes around ethics, fair trade and responsible sourcing exerting a lesser but still noticeable influence on their behaviour.

Whilst to some extent the malleable agenda of public opinion is an obvious influence on consumer behaviour, there were cases where it was not a strong enough influence to become an antecedent for engagement. In these cases, the reality of consumer actions did not reflect their concerns and personal values, and this is where barriers (as opposed to



antecedents) to engagement become prominent as a consideration. For example, whilst many stakeholders identified the use of packaging as a topic of concern, not all identified it as an area where they would be motivated to engage with an organisation to provide feedback. This was evidenced by contrasting responses from interviewees:

*“I wouldn't buy an orange in a box, you know, [...], I don't put fruit and vegetables in plastic bags in the supermarkets, for example, because they come wrapped in skins!”*

*“I'm one of these people that will try and avoid plastic and will always take a water bottle or take a flask or whatever, wherever I go, [...], I recycle a lot, do things like that, but not necessarily would I look at a company when I'm buying from them specifically.”*

At the extremities of contradiction, some stakeholders valued the convenience of chosen services so much that it outweighed their clear understanding of their unethical behaviour and perceived poor environmental record:

*“It's definitely the convenience because I don't like their ethics, and the packaging is absolutely dreadful, I mean it's so overpacked.”*

In summary, the climate emergency was by far the most influential element of topical global public opinion on interviewees, but how they reacted to this in terms of engagement or disengagement was variable: the influence can either be a barrier or enabler to interaction.

### **Potential Barriers to Engagement in Sustainability Accounting and Reporting**

Three of the barriers to engagement in Sustainability Accounting and Reporting (SAR) highlighted in Figure Eight are linked to antecedent conditions in that they can act in either direction, a recurring theme within these findings. As such, themes relating to “Values” and “Communication” will not be discussed in depth in this section, as they are simply the opposite effects to those covered as antecedents in the corresponding section.

“Materiality and Influence” *will* be addressed in this section as stated earlier in the chapter.

It was evident there was a high degree of apathy towards the activity of engagement in SAR on the part of stakeholders. The underlying reasons for this apathy were in all cases related to one of the barriers themes discussed in the model in Figure Eight. This attitude was evident across a high number of respondents in all stakeholder types. Interviewees in some cases appeared conflicted, inasmuch as they perceived themselves to hold the values that they felt would drive engagement in sustainability topics, but for reasons they could not explain had not engaged in SAR. It is reasonable to assume that in these cases the barriers were subconscious but still related to one or more of the barrier themes.

In other cases, the act of responding to questions posed by the interviewed appeared to trigger interviewees to question their own responses:

*“Yes, I'd never thought about that, but this has actually made me think about it in terms of that”*

The most prominent of the underlying barrier themes driving such attitudes was “Materiality and Influence”. Themes in this area related to stakeholders not feeling that their choices were material or influential enough to warrant further engagement or investment of their time in SAR data. This is succinctly summarised by this particular response:

*“Yes, I suppose, higher priced items or kind of items that you buy irregularly, you might do more research on. But everyday items, you tend not to.”*

As was noted as an antecedent condition, some Consumer stakeholders appeared to use the value and materiality of a product service to determine if they are likely to engage with SAR data as a means of researching their decisions. Contrastingly, Producer stakeholders tended to focus on the areas of most impact regardless of type. This is most likely due to having more research tools and data such as materiality analysis available to them to consider. Visser (2011), incorporating what Anderson (2007, p.53) called the “long tail” of Web 2.0, suggests that collective power is likely to make the biggest positive impact on global sustainability (2011, p.207). If consumers were able to easily access the data that organisations have on sustainability impact, it is possible that materiality would no longer be a barrier, but rather an enabler of sustainable choices.

Price and product performance were also clear barriers to engagement, with many interviewees citing that they would not necessarily pay more for, or sacrifice perceived performance of a product or service, for its reported sustainability credentials. This was mediated only by extremes of poor performance. Other themes in this area were concerned with the commercial elements of business strategy, and how sustainability forms a part of an organisation's long-term plan, but only subject to financial viability:

*"I don't expect any of my start-ups [clients] to even think about responsibility or ethics until they've got lots of revenue coming in. It's just not essential, get the money coming in first, and everything else comes later. "*

This leads to stakeholders of all types often desiring to become more engaged or influential but being constrained financially or politically:

*"...Actually, what often happens is that people don't have it within either their budgets or their remits, which means they love it but they can't do it..."*

It was further referenced that boards of directors often have "detractors" who oppose expenditure on sustainability-related issues, or key figures of political influence in the organisation are not mentally invested in sustainability concepts.

Another investment or commodity that warrants discussion is the concept of "Lack of Time" as a barrier to engagement. Stakeholders of all types identified a lack of time as a significant barrier to engaging in SAR content. The underlying reasons cited for the lack of time were further grouped into subcategories relating to "Lack of Priority over Other Considerations", "Inconvenience" and "Complexity". Convenience, in particular, is a prevalent theme, highlighted clearly in this comment:

*"...the convenience is a big factor, how far people are willing to go out of their way to find a business that is zero waste, or to find a coffee shop that pays their staff minimum wage – you know, walk two blocks out of their way."*

In most cases it was possible to probe into the data with interviewees to identify what demands on their time prevented them engaging in SAR. Producer stakeholders regularly cited organisational barriers such as the structure of teams, lack of dedicated resources to

complete SAR activity alongside “day jobs” and perceived lack of payback from investment of time in SAR. Consumer stakeholders most frequently referred to the demands of family life, preferring to engage in activities that rewarded them in different ways (such as hobbies) and the sheer investment in time needed to research sustainability data. Considerations of lack of time may well be mitigated by technological tools that increase the convenience and the sense of community. This was a key theme carried forward to the design of the second phase of this research.

The use of technology to drive engagement does have implications, and some of the more negative aspects of social media and technology were noted as emergent themes in interviews conducted, coded under “Information Overload and Stress”. The “information” in this context encompasses all information and was not just restricted to SAR data. As an example of the challenge felt by interviewees, they often perceived there were already too many social media channels, applications and news feeds demanding their attention and time without “adding” to this challenge by engaging in SAR data. This problem is most clearly articulated by the following comments:

*“I think it’s all about having a balance between information and agency. If you just keep whacking out bits of information then, people are overloaded already, what could happen is they go, ‘Do you know, this is too hard’”*

*“Too much information. That’s always the thing. I think you can absolutely get swamped in the detail because, [...], everybody’s trying to do something a little bit different.”*

This perception in many cases drove responses such as disengagement, apathy and mistrust. Such perceptions of mistrust and confusion are commonly affected by perceived “greenwashing” techniques used by organisations (Laufer, 2003, p.255; Visser, 2011, p.91) as discussed in chapter two. It is also reflected by the findings of Bradford *et al.* (2017), who suggest that consumers more consistently associated SAR with “image management” than real accounts of impact and credible data (2017, p.86).

Techniques to address such barriers and increase engagement in both offline and online SAR, referred to as “Mediators”, form the subject of the next section of this chapter.

## Mediators and Enablers of Engagement in Sustainability Accounting and Reporting

The thematic category of “Mediators” relates to concepts that influence levels of stakeholder engagement in Sustainability Accounting and Reporting (SAR), once antecedent conditions have been met and barriers overcome. The approach of using antecedents, barriers and mediators is a common approach adopted in research papers (Fang, 2017, p.575; Landers *et al.*, 2018, p.319; Laaksonen, Falco, Salminen, Aula and Ravaja, 2019, p.9).

Six themes were prevalent in this area, in descending order of occurrence: “Convenience”, “Technology”, “Engagement in the Design”, “Consumer Activism”, “Habit”, and “Sense of Community”. Themes relating to “Convenience” as a mediating influence tended to fall into three categories: “physical device usage”, “product design and performance” and “pricing”. Themes relating to “physical device usage” included how stakeholders used devices such as smartphones, tablets or laptops to make their interaction with services convenient. “Product design and performance” themes highlighted how well-designed websites, hybrid services such as “click and collect” and online chat facilities were convenience-related factors likely to increase their engagement in concepts. “Pricing” themes were those where costs such as delivery, payment plans or bulk delivery options influenced levels of engagement.

A further outcome of the influence of convenience was to reduce stress and mitigate the negative influence of perceived barriers relating to “Lack of Time”, “Financial and Commercial” and “Information Overload”. This was evidenced by some interviewees suggesting they were prepared to pay more for convenient services, for “releasing” time for them to “spend” elsewhere or to filter or sort information on their behalf. Examples identifying the influence of “Convenience” included:

*“It’s just stress free, really. I can do it while I’m cooking tea at the same time, and you don’t have to leave the house, or spend ages on the phone.”*

*“Although I probably could have found one cheaper if I’d have looked, to me that just felt like it was a good use of time.”*

The last comment was of interest because it highlighted a tension between convenience and some of the barriers or concepts identified elsewhere in this section. In these cases, a

stakeholder could either refuse to become engaged or compromise the conflicted value. There was limited but noticeable evidence of both outcomes, with responses such as the below:

*“It’s definitely the convenience because I don’t like their ethics, the packaging is absolutely dreadful, I mean it’s so overpacked.”*

The outcome of such conflicts was an interesting element of the data when considering themes related to “Technology”, which are of special relevance to this thesis. These themes related to cases where technology-based solutions were being specifically designed to increase engagement in concepts such as SAR online and were of influence when designing the prototype solution used in the subsequent phase of the research. Examples mentioned related to: the use of barcodes (and their associated data such as place of manufacture or country of origin), online teaching facilities, such as the “Sulitest” (Sulitest.org, 2016, [online]) or mobile apps which harness the additional features of smartphones to combine, tailor or promote services on behalf of users, such as “CoGo” (2018, [online]) or “WikiRate” (2015, [online]). The potential of technology in this area was succinctly summarised by one interviewee, who suggested:

*“Everything’s connected, everything is hooked up, cookies to drive your media, drive your life, drive what you want to buy, what you want to sell, everything. So, I think ultimately digesting your sustainability information in the same way will come.”*

Broadly, themes in “Technology” contributed to the mitigation of barriers in the same way as “Convenience”, with one notable exception. Technology can potentially mitigate both “Apathy” and “Communication” barriers using behavioural influence techniques and framing of messages displayed in an appropriate fashion to attempt to change stakeholder behaviour.

Whilst the majority of data on themes relating to behavioural influence were from Producer stakeholders, there was still a level of interest from Consumer stakeholders towards techniques such as rewards and loyalty points. This was tempered by a level of cynicism towards the underlying motives. Ultimately, the data indicated that price or value was still the paramount consideration for consumers. As such, any successful reward scheme regardless of intervening method would probably result in an extrinsic reward or “benefit”

of some sort. There are multiple ethical considerations to the use of behavioural influence technology as noted in chapters one and three. Such considerations were paramount for the prototype used in this thesis and need to be considered for ongoing practical applications.

A further key theme was: “Engagement in the Design”. Data categorised under this theme related to the involvement of stakeholders in the design of an initiative to improve its chances of success and was predominantly appropriate for Producer stakeholders. Example techniques included: collaboration, continuous improvement, and cross functional teams. A common theme was the failure of the SAR concept to be well marketed or understood within both organisations and with external stakeholders. The perception from the interviewees was that SAR was treated as a “necessary evil”, or administrative task of which the output was the report itself. This was as opposed to the report being the means to affect changes in process, behaviour or involvement that may lead to positive change in sustainability. This is notable in this comment:

*“Marketing is really good at marketing and not good at sustainability. Sustainability is really good at sustainability and not good at marketing.”*

Specific suggestions for techniques for improving this were made by several interviewees, drawing on their personal experiences of designing SAR systems or managing processes with organisations:

*“I just think that every business should have a 'Let's get stuff done better' business unit, which has everything in that unit – so marketing, sustainability, innovation, R&D, collaboration, partnerships, whatever you need.”*

This supports the application and influence of “Web 2.0” (Anderson, 2007, p.53; Visser, 2011, p.207) and draws on techniques common within “agile” ways of working such as iterative design, prototyping, crowdsourcing (Maas *et al.*, 2016, p.240) and cross-functional working (Boag, 2018, [online]). Effective, yet more traditional “offline” approaches to engaging stakeholders were also cited under this category, many of which are already provided by organisations such as Responsible 100 (R100). An example being the “roundtable” events run by R100, as discussed in chapter one:

*“[roundtables are] a very efficient way of getting someone within My Company, who’s got responsibility for certain policies, [...] and getting them in front of people that also worry about that topic too.”*

Self-initiated engagement from stakeholders was also a prominent theme coded under “Consumer Activism” and “Habit”. “Consumer Activism” related to values-based activism within stakeholders leading them to become vicariously engaged in SAR data to research the performance of organisations or products against their individually held values. Examples of such values provided by interviewees included: veganism, animal cruelty, ethical production and carbon footprints. As such, concepts under this theme were closely influenced by themes under “Public Opinion” discussed earlier in this section. Issues of public opinion and activism can quickly build momentum and yield significant influence over organisations, as evidenced by the “Blue Planet” effect (BBC News, 2018a, [online]) or “Black Lives Matter” (Maqbool, 2020, [online]). Stakeholder values can equally be a barrier, as noted in the model in Figure Eight. There were also several connections to “Information Overload and Stress” as a barrier, cited by stakeholders who were striving to reduce their online or social media time, subsequently being less inclined to engage online in SAR data.

“Habit” was also a concept closely linked to other themes in the data, exhibiting both a “Mediator” and “Barrier” influence on engagement. As such, it was strongly linked to the barrier theme of “Apathy” in Figure Eight. Data coded under this theme related to how habitual patterns of stakeholder behaviour affected engagement in SAR. As a barrier theme, “Habit” highlighted how stakeholder’s patterns or behaviour such as geography and brand loyalty meant they did not consider alternatives or were not exposed to different options.

In some cases, stakeholders were unable to identify why certain habits affected their engagement in sustainability concepts, echoing the themes identified earlier in this chapter under “Apathy”, and justifying the link to this “Barrier” theme. In other cases, “effort” was suggested as the likely reason why engagement was low in sustainability concepts, therefore showing a potential link to “Time” themes as a barrier. For example:

*“It makes me sound really lazy, but it’s extra effort, it’s another thing to have to do, [...], I could probably recycle a lot more than I do, that I take to landfill, the tip. I*



*could probably switch the lights off more often and just turning off electric things all together. I could use less paper. I waste paper probably.”*

However, data coded under “Habit” could also exert a positive mediating influence on engagement. Many gamification and social media platforms rely on habit to make them “sticky” for their users (Hammedi *et al.*, 2017, p.656), and as such, if an engagement solution were to achieve the same objective it could certainly be a powerful enabling force in engagement in SAR.

Another prevalent theme in the data was “Sense of Community”, containing data related to references to community either locally, physically or online (virtually). Considering this alongside the data coded under the theme of “Habit”, those who design social media and gamification tools often strive to achieve a sense of community around their products and services (Vernuccio *et al.*, 2015, p.714; Dessart, 2017, p.379). Local community as a factor in technology acceptance and understanding of online behaviour is well documented (Tsai, Cheng and Chen, 2011, p.1094) and a common approach adopted to build and maintain engagement and involvement in online products and services. Producer stakeholders were keen to highlight what they considered to be the “power” of communities:

*“I think it’s making real the movement, the purpose, and community aspects of it in people’s everyday experience on the app, so seeing how many other people you’re doing this together with”*

Consumer stakeholders were equally keen to highlight the value they place on both local and virtual communities:

*“I’d much rather feel like I’m spending my money locally than going to a big company”*

*“I still like shopping in shops, and I like to support our local shops, as I know they’ll go away if we don’t support them.”*

Albeit (again) to an extent tempered by overriding barriers of “Convenience” and “Lack of Time”:

*“I would much rather be out enjoying the outdoors rather than stuck in a car having to go... even though I feel guilty about the high street disappearing, the whole having to go and pay for parking, walk around, queueing.”*

The impact of the Coronavirus (COVID-19) pandemic should be considered here. The lockdowns instituted by many European countries in early 2020 (Karabag, 2020, p.2) may have exerted an overly positive influence on perceptions of local community activities and participation during the crisis (Dixon, 2020, [online]). A small percentage of the twenty interviews were conducted during this period, hence an element of recency bias may have exerted influence here.

In summary, mediating factors which positively influence the level of engagement in SAR (both online and offline) are of interest to this research and formed the foundation upon which the prototype was designed. In the section, six key mediators were discussed: “Convenience”, “Technology”, “Engagement in the Design”, “Consumer Activism”, “Habit”, and “Sense of Community”. The most prominent theme within this category was “Convenience”.

## **Section Summary and Factors Influencing the Subsequent Phase of Research**

### **Summary of Themes Identified**

This chapter introduced a conceptual model which grouped themes from the interview data collected into “Antecedents”, “Barriers” and “Mediators” of Engagement in Sustainability Accounting and Reporting (SAR). The influence of “Public Opinion” and the “Online Techniques” on these categories was identified, with further linkages identified where themes exhibited behaviours across multiple categories. For example, data coded under the theme of “Communication” was both an “Antecedent” and a “Barrier”. Table Five below summarises the occurrences of themes identified in the conceptual model. A full summary of themes can be found in the Appendices.

Within themes deemed to be “Antecedents” to engagement in SAR, the most prominent was “Clearly Articulated, Aligned Values”. Themes relating to “Antecedents” were heavily influenced by key current topics of public opinion. In data collected for this thesis, the

climate emergency was the most influential element of public opinion cited by interviewees.

The key “Barriers” to engagement were summarised under seven key headings as discussed, the most significant of which was: “Materiality and Influence”. Such “Barriers” could, in theory, be mitigated to an extent using concepts categorised as “Mediators” in the model. Six key mediators were discussed, the most prominent of which was “Convenience”.

ID	Theme	Category	Occurrences In	
			Total	Interviews
1	Materiality and Influence	Antecedent, Barrier	70	16
2	Convenience	Mediator	57	14
3	Technology	Mediator	54	15
4	Climate Change	Public Opinion	53	13
5	Financial and Commercial	Barrier	52	16
6	Apathy	Barrier	50	17
7	Lack of Time	Barrier	38	13
8	Communication	Barrier	35	13
9	Engagement in the Design	Mediator	27	8
10	Consumer Activism	Mediator	24	13
11	Clearly Articulated, Aligned Values / Personal Values	Antecedent, Barrier	24	6
12	Information Overload	Barrier	16	7
13	Transparency	Antecedent	14	6
14	Habit	Mediator	14	6
15	Authenticity	Antecedent	14	5
16	Sense of Community	Mediator	13	8
17	Agency	Antecedent	11	6
18	Trust	Antecedent	9	7
19	Food Miles	Public Opinion	8	4
20	Communication	Antecedent	4	3

Table Five – Summary of all data coding labels

These mediating factors formed the foundation upon which the prototype in the second phase of the research was designed. Building on the themes summarised in Table Five, the following section of this chapter explains the influence of these on the design of the subsequent phase of research conducted.

### Key Factors in the Design of the Prototype

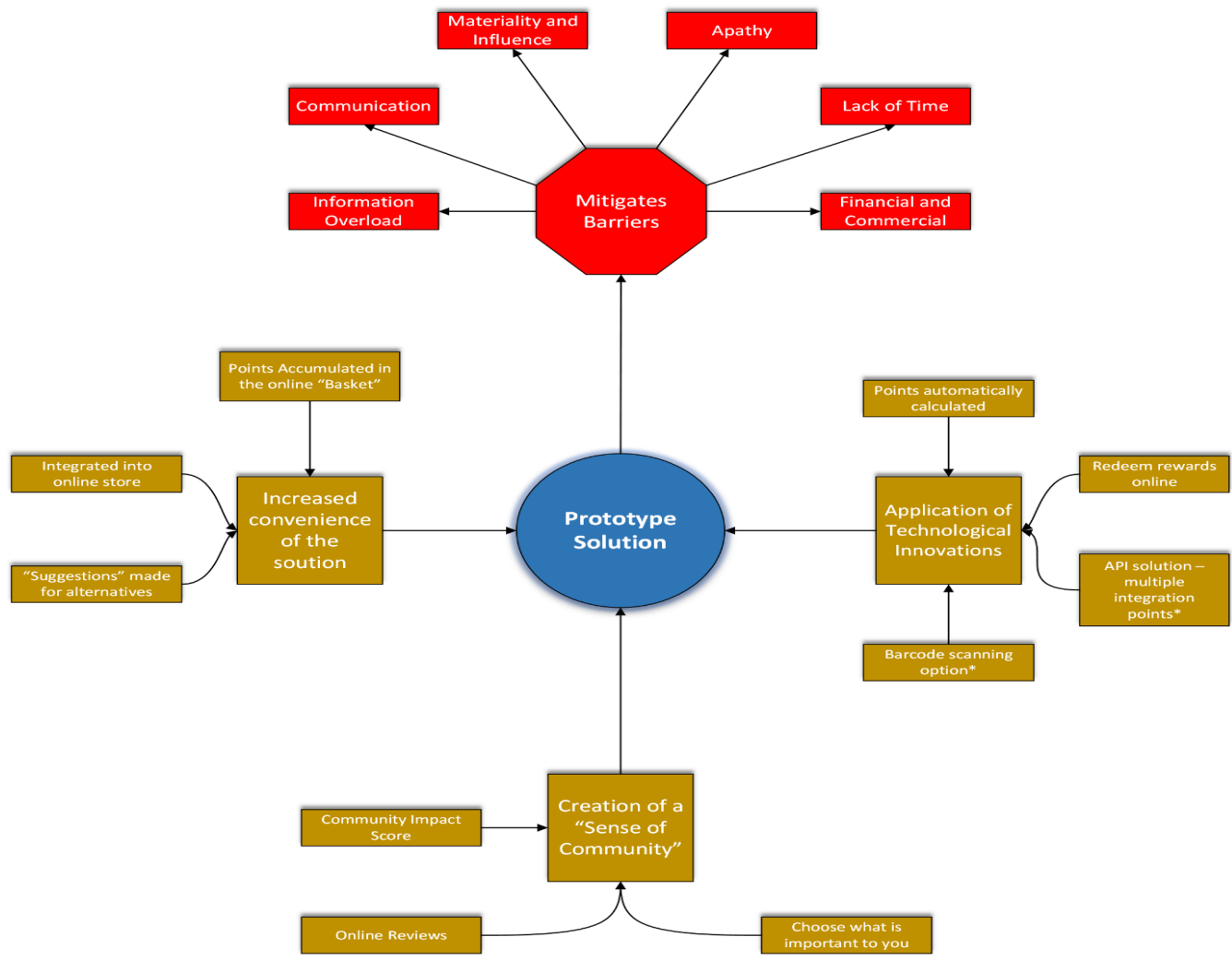
Table Six below summarises the relationships between “Mediator” and “Barrier” themes to engagement in Sustainability Accounting and Reporting (SAR). Concepts deemed as key

influences on the prototype design are highlighted in blue. The rationale for these choices will be discussed in the remainder of the section.

ID	Mediating Influence	Related Barrier(s)	Comments
1	Convenience Technology	Lack of Time	"Release" of time to "spend" elsewhere and engage in other activities.
2	Convenience	Financial and Commercial	Willingness to pay premium prices for convenient services or perceived "Payback" commodities such as fuel, parking or time.
3	Technology	Financial and Commercial	Technological solutions which use reward techniques may help increase engagement and mitigate financial or commercial concerns. Adding "fun" or competitive elements to rewards may also increase engagement.
4	Convenience Technology	Information Overload	Preferences for services which filter, aggregate or manage information on behalf of stakeholder (or replace other services).
5	Convenience	Personal Values	To what extent were stakeholders willing to compromise personal values for convenience?
6	Technology	Communication Apathy	Solutions which use behavioural influence technology can "nudge" stakeholders toward engagement and mitigate apathy. Improved communication and message "framing" may also assist in increasing levels of engagement.
7	Engagement in the Design	Apathy Communication Personal Values Materiality and Influence	Involving stakeholders in the design process of any solutions is likely to reduce apathy and improve communication about SAR concepts. Appropriate involvement may also shift perceptions and values, and evidence agency in the process potentially improving engagement.
8	Habit	Apathy Lack of Time	Unwillingness to break patterns of habit override the desire to become engaged in sustainability topics. Changing habits and routines is "too much effort".
9	Habit	Lack of Time	Habit could (if used to engage in a technology or gamification solution) prove a useful force in ongoing interest in SAR.
10	Consumer Activism	Apathy	Researching values-based beliefs before engaging with products or services vicariously increases engagement with SAR. This is because it is the medium for holding the necessary information to underpin consumer research.
11	Consumer Activism	Information Overload and Stress	Personal values toward "disconnection" from social media may cause this barrier to be removed as people disengage entirely from connecting with organisations.
12	Sense of Community	Apathy Materiality and Influence	A sense of community is cited as a key factor in technology acceptance. Grouping people into a community builds agency and shows progress through collective input into problem solving. "Web 2.0" collective design principles may also create agency and share problems across groups who build solutions together.

Table Six – Relationships between mediating influences and barriers

Designing and testing a prototype in accordance with the research design discussed in chapter three could only reliably test some of the mediating influences shown in Table Six. By initially eliminating certain candidate relationships for testing via a prototype, it was possible to determine and justify the most appropriate relationships to be reliably tested. These are shown in Figure Nine below and explained in further detail in the following paragraphs.



\* Not able to be tested as part of the prototype

Figure Nine – Mediating influences and barriers adopted

Item two in Table Six relating to “Convenience” could not be addressed because no substitute options for real-world scenarios could be made as part of the prototyping exercise. Items five, ten and eleven relating to personal values could only be tested in a limited way as participants were not screened or pre-selected based on values held, thus significantly limiting the value of any test of that relationship. Some exploratory investigation of the impact of personal values on the prototype was possible, through collecting data on “Important Issues”. However, this was not deemed to be a strong enough test of the relationship, purely useful supporting data upon which to inform future designs. Item seven concerning “Engagement in the Design” was discounted due to the research being independent of any organisational context, making it impossible to engage a specific group of stakeholders in the process. Concepts categorised under items eight and nine in Table Five relating to “Habit” were not possible as part of a one-off prototype solution.

Whilst it was not possible to test the above relationships in a fixed duration prototype, there is strong evidence provided in chapter two that positive mediating influences may be achieved using prototyping. Highlights of such research can be found in Hammedi *et al.* (2017) who discussed evidence of habit-forming based on use of gamification techniques (2017, p.656), Dessart (2017) who found interactive social media builds brand engagement (Dessart, 2017, p.388) and especially Nobre and Ferreira (2017) who reported that gamification had a positive impact on motivation, engagement and loyalty as part of content co-creation online (2017, p.355).

Accordingly, the prototype was specifically (but not exclusively) designed to address six “Barrier” themes relating to relationship items one, three, four, six and twelve. These were: “Lack of Time”, “Financial and Commercial”, “Information Overload”, “Communication”, “Apathy” and “Materiality and Influence”.

The “Mediator” themes which were used to influence this engagement were: “Convenience”, “Technology” and “Sense of Community”. This broadly reflects the importance of “Convenience” and “Technology” as the second and third most frequently coded in the summary of themes shown in Table Six. “Sense of Community” was adopted to augment these based on the relationships discussed above and the broad support within the literature for the use of this technique to build engagement with stakeholders on social



media platforms and “Web 2.0” approaches (Anderson, 2007, p.53; Visser, 2011, p.207; Vernuccio *et al.*, 2015, p.714).

Three further factors that were not immediately obvious from analysis of relationships and themes alone within the interview data were also identified as suitable tools or key components of the prototype: use of barcodes and appropriate reward design. Barcode scanning is valuable outside of online environments, for example in shops, or for scanning products at home to access more data about them. Applications such as Giki (Giki Social Enterprise Ltd., 2020, [online]) utilise barcode scanning towards promoting sustainable consumption choices, “MyFitnessPal” (Under Armour, Inc., 2018, [online]) and “Out of Milk” (Bonial International GmbH, 2012, [online]) already utilise barcode scanning in different contexts. Whilst it was not possible to incorporate functional barcode scanning in the prototype due to social distancing restrictions and practical considerations, a “mocked-up” barcode scanning facility served the same purpose for data gathering.

Understanding appropriate reward design was also a critical consideration. The results of the interviews suggested that extrinsic rewards were by far the most engaging for stakeholders, but elements of intrinsic rewards were also referenced. For example, collecting points toward “experiential” rewards which could not be purchased. There exists a tension between mitigating barriers with financial incentives and building underlying values, behaviours or predispositions in stakeholders that are sustainable over the long term. This topic will be revisited in the following chapter. It was deemed unsuitable to offer actual rewards as part of the prototype, due to both practical considerations and concerns about potential sampling bias (Bryman, 2016, p.49), despite wide consensus on increased participation rates (Oppenheim, 1992, p.104; Malhotra *et al.*, 2012, p.546). Instead, a “mocked-up” reward feature served the same purpose for data gathering.

## **Quantitative Phase: Summary of Results**

The second section of this results chapter summarises the results of the analysis conducted on the survey data collected as part of the second phase of this research, the aims of which were two-fold. Firstly, the survey was designed to test if the barrier themes identified from the interview phase generalised to a larger sample. Secondly, the prototype itself was tested to see if it were acceptable as a proof of concept for a tool to contribute to mitigating these barriers. Proving the concept of the tool through this rigorous two-stage analysis of both qualitative and quantitative data underpins the novel contribution made by this research. The following initial sections of this chapter provide background and a functional overview of the prototype to clarify its role and contribution to the second phase of the research design. The design was finalised following the collection and analysis of data from the first phase of the research, based on the key themes identified and discussed in the first part of this chapter.

### **Responsible Rewards: Background and Functional Overview**

As was shown in Table Six and Figure Nine the key themes identified from the first phase of the exploratory sequential design were tested using a prototype solution named “Responsible Rewards”. This section provides a high-level overview of the key purpose of that prototype by identifying the elements of gamification and interactive social media used to test these themes.

The basic premise of “Responsible Rewards” was to display scores for products based on an independent set of criteria, informed by the scoring mechanism provided by “Responsible 100” (Responsible 100, 2020, [online]), as discussed in chapter one. The score was presented onscreen alongside the products in a conveniently positioned, easily digestible format, to highlight the number of points awarded to the user for the purchase of that product. This unified, simple scoring system aimed to address critiques of Sustainability Accounting and Reporting (SAR) related to a lack of standardisation, as discussed in chapter two.

Users of the system were able to configure their own personal preferences for product sustainability attributes from a selection of pre-defined criteria including, for example: “Food Miles”, “Carbon Footprint” and “Living Wage”. These impacts would be aligned to

the Responsible 100 criteria and updated accordingly in line with any developments to this standard. This choice of preferred so-called “Impacts” enabled “Responsible Rewards” to offer two features integral to the purpose of the design. Firstly, to provide context-sensitive, data-informed suggestions to users for alternative products which would better suit their preferences or would earn them more points in those categories. Secondly, to enable users to receive real-time progress feedback on how they are contributing to overall impacts on the “Responsible Rewards” scheme in those areas. The points accumulated could be redeemed for a selection of rewards, carefully chosen to avoid any conflict with the underlying premise of the system: to incentivise and reward responsible purchasing, tuned to the personal preferences of the stakeholders.

The prototype version of “Responsible Rewards” used in this research design was presented embedded into the context of a “dummy” online supermarket website. It is envisaged that if further developed “Responsible Rewards” would be managed by an organisation incorporated for that purpose. This organisation would be run independently, with a cross-platform technology proposition to underpin the delivery of the system. This platform would enable users to earn rewards for their physical and online purchases across multiple retailers and sectors, whilst still viewing reward and impact data, and redeeming their points for rewards centrally. This follows precedents set by conventional rewards systems such as “Nectar” (2018, [online]) who offer points at a wide variety of physical and online locations (Nectar Loyalty Ltd, 2013, [online]). In order to encourage manufacturers and retailers to participate in the scheme, any unrated products were flagged by a “Warning Sign” accordingly, with an option allowing users of the system to request their future participation.

In order to avoid the design pitfalls articulated in chapter two it was necessary to ensure that this prototype was not simply a blunt application of points to an eCommerce environment. Key features, including those mentioned above, were therefore integrated into the prototype to address this, alongside elements of interactive social media, in line with the objectives of this research. Figure Ten below highlights the location of these key features on an example wireframe. The following section describes these features in further detail and clarifies the role and influence of interactive social media on the prototype design.

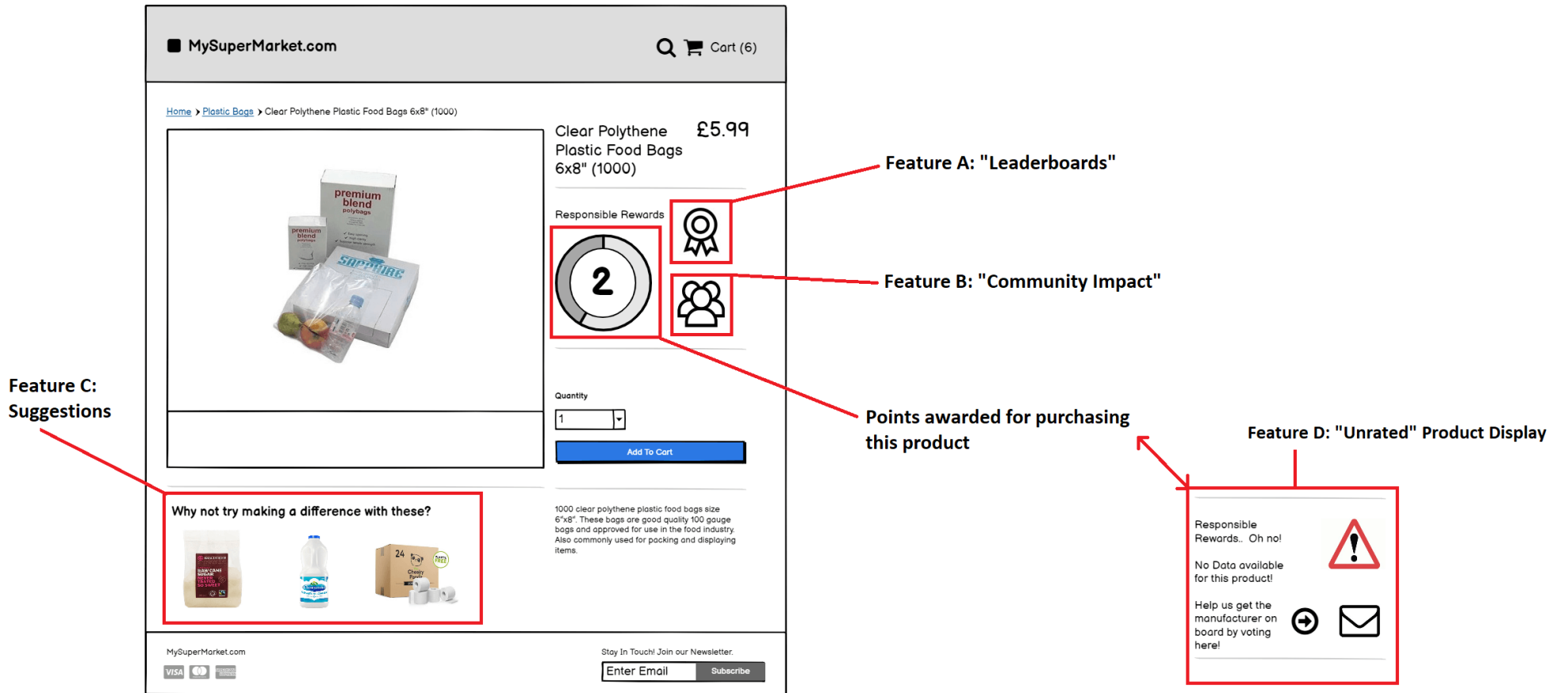


Figure Ten – Example screenshot from prototype

## Online Prototype: The Role and Influence of Interactive Social Media

The online prototype used in the second phase of the exploratory sequential design drew on elements of both gamification and interactive social media as necessitated by the research objectives. Interactive social media is cited as important in building both stakeholder and brand engagement (Manetti and Bellucci, 2016, p.986; Dessart, 2017, p.388), and has become a key tenet of how businesses interact with their stakeholders (Swani *et al.*, 2017, p.77). Accordingly, it is appropriate to explore the role and influence of the social media elements of the prototype in more detail prior to presenting the results of the data gathered.

The key elements of interactive social media featured in the prototype were: community impact “scores”, interactive reviews, and commentary on products. How these elements featured in the prototype is highlighted in Figure Ten above. There were three key reasons for the selection and adoption of these types of features, all of which are common elements of interactive social media applications. Firstly, they enabled the use of content co-creation as a means toward increasing engagement in a concept (Leclercq *et al.*, 2018, p.94). Secondly, the features could be effectively demonstrated to participants in static or wireframe form without the collection of any further unnecessary sensitive data. Finally, they formed a platform for generating the necessary discussions and stakeholder input that the “Responsible Rewards” solution strived to create. The role of these social media features is discussed in more detail in the following paragraphs.

The community impact “scores” feature was designed with the intention of showing potential customers the cumulative impact of the “community” of customers who had purchased this product, and the contributions their purchases had made when considered collectively. The example wireframe illustrating this screen in more detail is shown in Figure Eleven below. The scores were also an arithmetic means to create a “league table” of responsible products, thus also contributing towards the competitive aspects of a gamification solution (Robson *et al.*, 2015, p.411). Such elements of this prototype were designed to focus on product features and impacts, rather than solely on price or volume of consumption. This was in order to avoid tensions between the objectives of the scheme and the need to ensure overall consumption levels were not unintentionally increased as a result. Product-level scoring was addressed by “Feature A: Leaderboards”, highlighted in

Figure Ten. This showed the user the relative position of the chosen product amongst potential alternatives, ordered by dimensions such as: relative price, product impact and overall community impact. This feature drew upon elements of gamification and social media which related to competition (Robson *et al.*, 2015, p.411) and community (Goodman *et al.*, 2015, p.205; Dessart, 2017, p.379). The screen layout presented is shown in more detail in Figure Eleven below.

The interactive commentary feature allowed stakeholders to post a review and comment on any aspect of the products. This feature was intended to enable a direct means of contact between stakeholders and “Responsible Rewards” to stimulate discussions, make suggestions for future features and begin to build a sense of community around the sustainability aspects of products. A sense of community is a key feature of both social media (Dessart, 2017, p.377; Lyu and Kim, 2020, p.121; Lee and Hsieh, 2021, p.1) and gamification (Goodman *et al.*, 2015, p.205), central to building engagement with stakeholders (Nobre and Ferreira, 2017, p.355) and a critical first step in building the desired motivation within stakeholders (Dessart, 2017, p.379). The adoption of features which encouraged a sense of community was also a key theme identified in the results from the interview phase, as addressed in the first section of this chapter. The example wireframe illustrating this approach is shown in Figure Twelve below.

In summary, the prototype which underpinned the second phase of this exploratory sequential design included a number of features which leveraged both gamification and interactive social media. The overall purpose of these features was to increase stakeholder’s engagement in the concepts surrounding Sustainability Accounting and Reporting (SAR), create a sense of community around the products, cause the users to pause and reflect on their choices, and consider possible alternatives more aligned to their stated preferences. The features were built into the prototype design holistically and from its inception, with the aim of embodying the desired concepts of “gameful design” (Walz and Deterding, 2014, p.9) and “gamification from below” (Woodcock and Johnson, 2018, p.543) as discussed in more detail in chapter two.

The creation of the “Responsible Rewards” prototype was not intended to be the sole outcome of this research, but rather an interactive medium to enable the creation of knowledge and theory development. Equally, it created a concept which could be

developed as part of a future contribution to practice. It is therefore envisaged that in future iterations of the prototype additional features would be added to further deepen the use and leverage of interactive social media and gamification based on the learnings from this research.

The prototype itself was critical to the second phase of the research. It enabled those who participated in the User Acceptance Testing (UAT) phase to both see and interact with a real application of the concepts they learned about in the video presentation. Without such an incarnation of these features, it would have been challenging (if not impossible) for participants to imagine the potential outcomes and see how these might influence their behaviour. In turn this would have impacted the quality of the data collected and the effectiveness of the contributions of this thesis. The results of the analysis of data collected using this prototype are discussed in detail in the following sections of this chapter.

# Responsible Rewards: Making an Impact Together

Products Like: Clear Polythene Plastic Food Bags 6x8"

[Close](#)

Products (10)

Manufacturers (7)

Position	Manufacturer	Product	Average Price	Score	Average £ / Point	Total Community Impact
1	Bees Knees	Wax Coated Sheets Organic (Reusable) - 24	£5.98	18	£0.33	1784
2	Bees Knees	Wax Coated Sheets (Reusable) - 24	£4.47	17	£0.26	1695
3	Recyclables	Biodegradable Paper Food Bags (50)	£3.56	14	£0.25	1354
4	Recyclables	Recycled Plastic Food Bags (50)	£2.97	11	£0.27	1249
5	Clingers	Clingable Recycled Food Bags (32)	£1.98	9	£0.22	1102
6	Tradecraft	Food Bags Recycled Plastic (100)	£2.44	7	£0.35	1040
7	Caterpack	Economy Food Bags Recycled Plastic (250)	£3.32	6	£0.55	987
8	Essentials	Food Bags Basic Plastic (500)	£2.41	5	£0.48	898
9	Essentials	Food Bags Plastic (500)	£1.96	3	£0.65	799
10	Plastic Bags	Clear Polythene Plastic Food Bags 6x8 (1000)	£5.97	2	£2.99	749

Figure Eleven – Example screenshot



Like  Review or Comment on this Product

## Add New Comment

Type your comment here.

Post as...

### Showing 2 comments

Sort By Popular Now Subscribe by Email Subscribe by RSS

Real-time updating is **enabled**. [\(Paused\)](#)

[Joe Bloggs](#) 2 hours ago

I tried this and it was nice, but not sure about the ethical rating. I've heard they import a lot of materials that are not ethically sourced? Could you look into this?

[Flag](#) Jim likes this Like Reply

[Jane Doe \(Responsible Rewards\)](#) 1 hour ago

Thank you for getting in touch, we'll do that and get right back to you. We'll post the results of our resarch on here and adjust the scoring if needed.

Thank you again!

[Flag](#) Kyle and 9 others like this Like Reply

Close

Figure Twelve – Example screenshot

## Summary of Results

In summary: the themes identified in the interview phase **did** generalise to a larger sample in 75% of cases (N=21). Additionally, the prototype demonstrated **was** deemed an acceptable proof of concept by 90.91% (N=40) of the users who participated in the survey, with a further 61.4% (N=27) considering reward systems in general to be appropriate method of engagement. Accordingly, this section of the research design successfully addressed research objective three. Table Seven summarises the 56 survey questions.

Purpose of Questions	Data type: Quantitative	Data type: Qualitative	Total Questions
Testing the generalisation of themes identified	28	0	28
Determining user acceptance of the prototype	5	3	8
Questions relating to attitudes or values of participants	13	0	13
Questions relating to antecedent: public opinion	1	0	1
Qualifying questions for the main survey	3	0	3
Optional personal information for reference	2	1	3

Table Seven – summary breakdown of the purpose of each question in the survey

The first three categories in the table provide a structure to explore the results in further detail across subsequent sections of this chapter. SAR data was referred to throughout the prototype as “Impact Data” to provide a more accessible, natural approach and mitigate any potential language barriers to participant engagement in the prototype (Bourdieu, 1991, p.23).

## Breakdown of Results from Quantitative Phase

Table Eight below shows a breakdown of the 28 responses in this category, grouped by the specific barriers tested and connecting them to the mitigating influences of the online prototype. The mitigating influences, barriers and IDs relate to those documented in Table Six and Figure Nine earlier in the chapter and will be discussed throughout the remainder of this section. Grouping around themes tested is a more reliable way to draw generalisations from the data than focussing on responses to specific statements tested (Oppenheim, 1992, p.197; Kostoulas, 2014, [online]).

ID	Mediating Influence	Related Barrier(s)	Results			
			Applicable Questions	Number Generalised?	Number Inconclusive	Number not Generalised
1	Convenience, Technology	Lack of Time	4	3	1	0
3	Technology	Financial and Commercial	2	2	0	0
4	Convenience, Technology	Information Overload	6	6	0	0
6	Technology	Communication	7	5	2	0
6,12	Technology, Sense of Community	Apathy	3	3	0	0
12	Sense of Community	Materiality and Influence	6	2	0	4
<b>Totals</b>			<b>28</b>	<b>21</b>	<b>3</b>	<b>4</b>
<b>%</b>			<b>100</b>	<b>75</b>	<b>11</b>	<b>14</b>

Table Eight – Summary of results: testing the generalisation of themes identified

The results of attempts to mitigate barriers relating to “Financial and Commercial” and “Information Overload” were tested using eight statements and appeared to generalise well to the larger sample, although findings in themes of “Information Overload” showed a stronger tendency towards generalisation than those in “Financial and Commercial”. A full breakdown can be found in Table Nine.

#	Statement	Barrier	Score for Generalisation	Median Score Received	Outcome
10	I would pay more for a product in order for it be kinder to people or the planet	Financial and Commercial	<= 3	3	Generalise
33	The rewards provided by RR are likely to make me more interested in the Impact Data	Financial and Commercial	>= 5	6	Generalise
20	I feel overloaded with the amount of electronic information I have to process daily on social media, websites and email	Information Overload	>= 5	5	Generalise
21	I often find the amount of Impact Data presented on websites makes it difficult for me to put into context	Information Overload	>= 5	5	Generalise
41	The way RR presented the Impact Data required little effort to understand and consider	Information Overload	>= 5	5.5	Generalise
42	I did NOT find the way RR presented the Impact Data to be overwhelming	Information Overload	>= 5	6	Generalise
43	The way RR presented the information was interesting and engaging	Information Overload	>= 5	6	Generalise
44	A solution such as RR would be effective in filtering the information down to what is important to me	Information Overload	>= 5	6	Generalise

Table Nine – Breakdown of results

The findings in relation to themes of “Information Overload” appeared to confirm the findings of both the pilot study and interview phase, in that participants felt overloaded with the amount of data they receive through various channels, including social media. The tendency to generalisation was stronger in this theme than in “Financial and Commercial” with median responses tending more towards “Agree” and “Strongly Agree”. The four questions which tested the prototype in terms of its ability to manage and display information presented equally positive findings for its effectiveness and general acceptance as a solution.

The findings relating to the “Financial and Commercial” barriers appeared to validate findings of earlier stages of this research, in that participants were generally **not** prepared to pay more for products and services solely for them to be more sustainable. They also showed that rewards may be effective in increasing engagement in this data for this sample

of participants. The findings relating to price were further confirmed by a question which asked participants to rank four different factors in order of importance when making buying decisions. Product performance was the most popular factor with 65.91% participants suggesting this was the most important factor, followed by price at 20.45%. This is detailed in Figure Thirteen below.

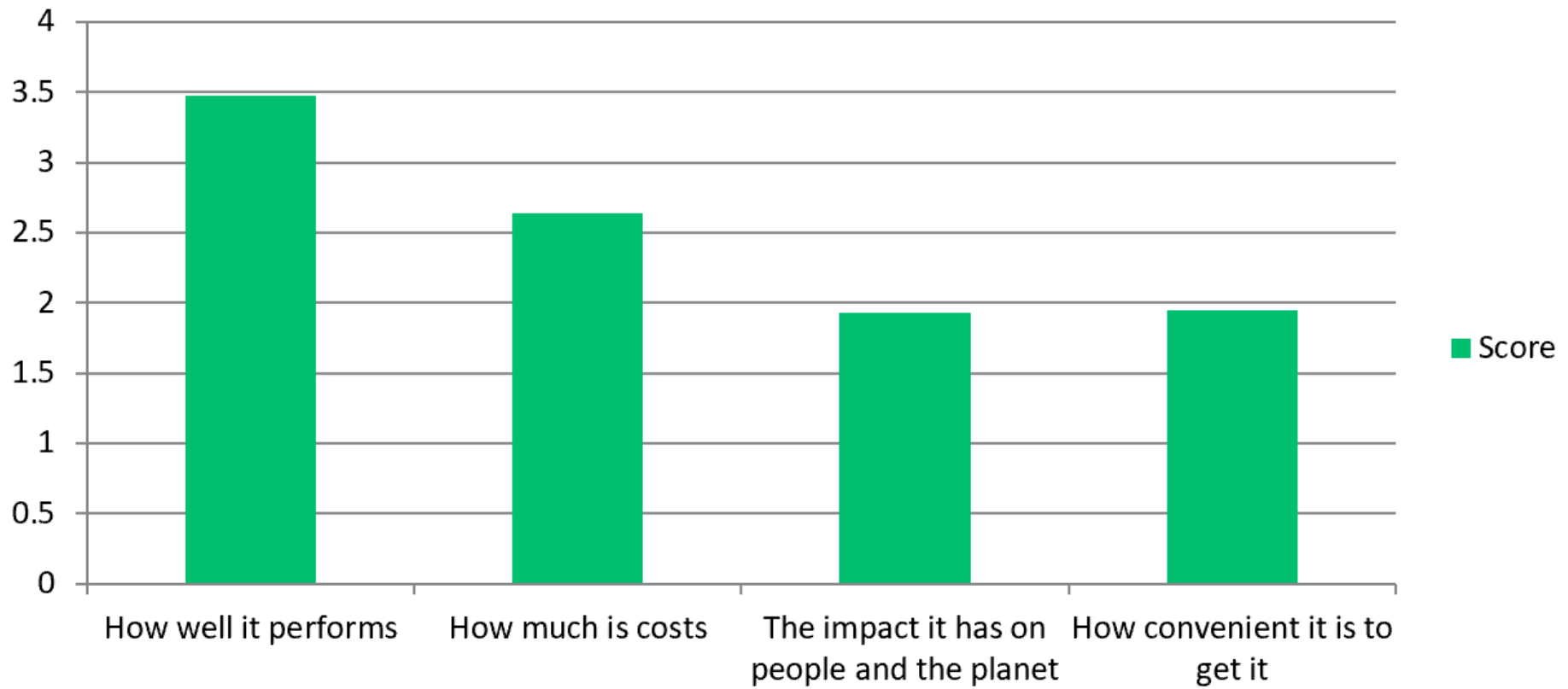


Figure Thirteen – importance of key factors to participants

Two further questions were posed related to the types of rewards participants preferred, from a list containing a mixture of five different types of rewards, three extrinsic and two intrinsic (Ryan and Deci, 2000, p.55). Extrinsic rewards such as vouchers and discounts were most popular with 72.7% of placing such rewards in first and second place in their preferences. As gamification systems tend to primarily, but not exclusively, focus on extrinsic rewards (Froehlich, 2014, p.584), this is a useful finding. However, results appeared to confirm that intrinsic rewards relating to the products purchase were also of interest to participants. For example, a tour of a brewery could be offered as a reward by a sustainable beverage manufacturer participating in the scheme. By offering such rewards manufacturers can build brand loyalty, reward their customers, and incentivise responsible purchasing. This is an example of a “Win<sup>6</sup>” solution (Mackey and Sisodia, 2013, p.34) and resonant with similar approaches adopted by some such companies already (Brewdog PLC, 2020, p.6).

Themes tested around price and product performance compared to impact of the product reinforced earlier findings in that product performance was a key factor. The expected order based on findings from the first interview phase was not entirely matched as interview participants alluded to price being more prominent than performance, and this order was reversed in the survey. There were further encouraging findings in that the “Suggestions” feature of the prototype proved effective in encouraging participants to consider more sustainable alternatives – even if the alternatives were more expensive.

There exists an evident tension between product performance, price and sustainability. In general, participants tended to rank product performance as their most important consideration in purchasing decisions. This was closely followed by both price and sustainability, which seemed to be mutually indistinguishable in terms of importance in this set of results. However, participants did not generally seem to accept paying more for a product to increase its sustainability. Addressing this tension is a key aspect which will be critical to the long-term success of any gamification solutions.

The results relating to the barrier themes of “Communication” and “Lack of Time” are more subjective, as some scores fit into the “Inconclusive” category. Statements relating to the “Lack of Time” barrier show that three of the four do generalise to a larger sample, but one is deemed inconclusive. Despite this, the data appeared to support the themes from the

interviews in that there were demands on participant time which were prioritised over reviewing and sourcing Sustainability Accounting and Reporting (SAR) data. The results also suggested that the prototype might mitigate concerns relating to this lack of time. A supplementary question asked participants to rank the other demands on their time, a full breakdown of which can be in Figure Fourteen found below.



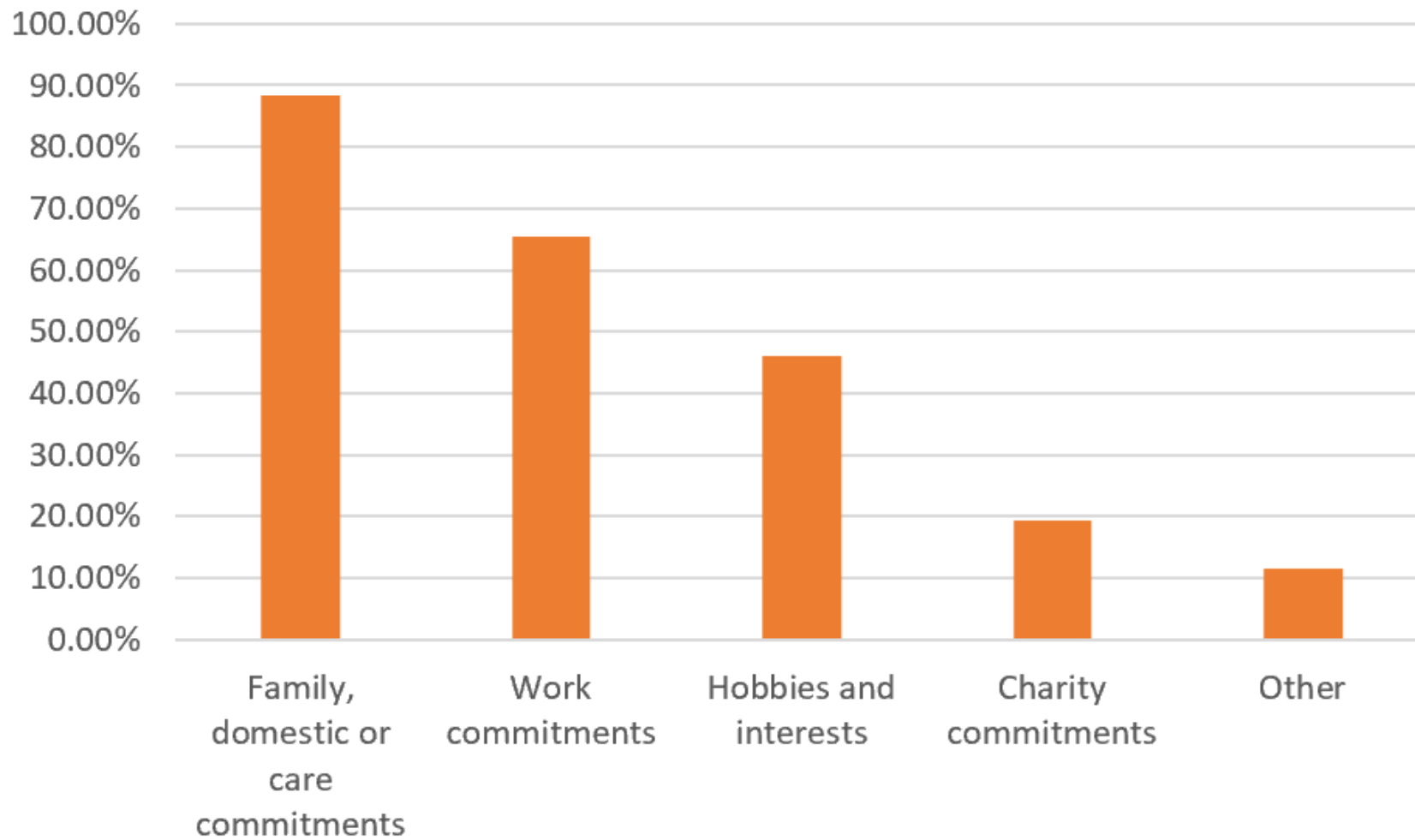


Figure Fourteen – Participant priorities

Summarising the barrier themes relating to “Communication”, these were as subjective in general as those related to “Lack of Time”. Five themes appeared to generalise to the larger sample and two were inconclusive. The two which were inconclusive related to presentation and context of SAR data. Participants neither agreed nor disagreed with the two statements offered, suggesting that the presentation of the data was not a key influence on how easy it is to understand or relate to the data. The other five statements all appeared to generalise to the larger sample. This suggested that techniques such as storytelling within the data or improving accessibility of the information aided understanding of the data itself. Participants felt the prototype was easy to use and understand, which contributed towards its overall acceptance.

#	Statement	Barrier	Score for Generalisation	Median Score Received	Outcome
13	I do not have time to look into the Impact Data of products I buy or use	Lack of Time	>=5	4	Inconclusive
14	There are demands on my time I consider more important than looking at Impact Data on products I buy or use	Lack of Time	>=5	5	Generalise
39	Responsible Rewards made it quick to locate the Impact Data about products I looked at.	Lack of Time	>=5	6	Generalise
40	I feel I would have time to review Impact Data in the way Responsible Rewards presented it on the website	Lack of Time	>=5	5.5	Generalise
16	I find Impact Data difficult to understand because of the way it is presented	Communication	>=5	4	Inconclusive
17	In general, I find the way Impact Data is usually presented difficult to relate to	Communication	>=5	4	Inconclusive
18	I am more likely to react to Impact Data if there is an easy flow of information or a story to follow	Communication	>=5	6	Generalise
19	Unless Impact Data is at my fingertips it is hard to get involved in	Communication	>=5	6	Generalise
29	I found the example website easy to use when I interacted with it	Communication	>=5	6	Generalise
30	I found it was easy to understand the information presented on the example website	Communication	>=5	6	Generalise
36	RR made me think about things I hadn't previously considered when shopping for goods such as these	Communication	>=5	5	Generalise

Table Ten – Breakdown of results: themes which more subjective generalisation

Finally, the six barrier themes relating to “Materiality and Influence” provided findings which were generally less conclusive and able to generalise to the larger sample. These are summarised in Table Eleven below.

#	Statement	Barrier	Score for Generalisation	Median Score Received	Outcome
5	My buying choices alone do not make a difference to either people or the planet	Materiality and Influence	>=5	3	Did Not Generalise
6	I cannot influence how a business behaves through the choices I make when buying its products	Materiality and Influence	>=5	3	Did Not Generalise
7	I only consider looking at the impact of a product on people and the planet if I feel it is a significant purchase, as opposed to an everyday purchase such as milk, tea or biscuits.	Materiality and Influence	>=5	3	Did Not Generalise
8	A smaller, cheaper product by nature does not present a significant impact on people or the planet as a more expensive one.	Materiality and Influence	>=5	2	Did Not Generalise
31	"Responsible Rewards" (RR) enabled me to better see how I could make a difference as part of a wider group of people in a community	Materiality and Influence	>=5	6	Generalise
32	I am more interested in Impact Data because I can see other people on RR are getting involved in it	Materiality and Influence	>=5	6	Generalise

Table Eleven – Breakdown of results: less conclusive themes

Only two of the six themes tested appeared to generalise to a larger sample. These themes provided useful feedback for the acceptance of the prototype and underlined other research findings on the positive impacts of the community elements of social media for organisations (Vernuccio *et al.*, 2015, p.714). It also suggested that the intrinsic motivations which can underpin community membership (Dessart, 2017, p.379) would be a key design consideration for future iterations of this prototype.

However, participants appeared to reject the four themes relating to the relative materiality of their purchasing decisions. Whilst this may be positive news as it indicated a

high level of consumer engagement in SAR data within participants, it should be treated with caution. The opening question of the survey aimed to establish the general level of engagement to provide a baseline - to which a median score of six was received. It is reasonable to assume that by virtue of investing time in the video, the prototype and the survey, that participants were likely to be in the upper percentiles of engagement in the topic. Hence, this generalisation may not apply to a larger sample of more apathetic participants.

There were three further statements relating to the barrier theme of “Apathy” which remain to be discussed. These will be addressed in the following section which relates to overall user acceptance of the prototype, as the topics are mutually dependent.

### **Determining User Acceptance of the Prototype and Addressing Apathy**

The results of the survey indicated that the participants accepted the prototype as a proof of concept to contribute towards the mitigation of barriers to engagement in Sustainability Accounting and Reporting (SAR).

This conclusion was based on five questions, the first two of which were designed to validate if the remote approach for the research had been effective, and both received a median score of six, or “Agree”. These questions were followed by three more direct questions. The first asked users if they would participate in the prototype if it were made available in a production version, to which 90.91% (N=40) participants answered “Yes”. A final question was added to temper any potential recency bias in participants and to distinguish between their acceptance of and their view of the effectiveness of the solution. This question asked participants if they felt there were preferable options than reward systems that could be employed towards the same objectives. In response to this, 38.64% (N=17) felt there might better options available. Hence, acceptance is reasonably deemed from: the high majority of participants who confirmed they **would** use the system in a production context, the majority of the participants, 61.36% (N=27) who confirmed that reward systems could be effective and the results of the preceding “qualification” questions.

To understand further the additional perceptions provided by participants, it was appropriate to consider the feedback from the four participants who said they **would not** participate in the scheme with the data collected relating to the barrier theme of “Apathy”, as shown in Table Twelve below.

#	Statement	Barrier	Score for Generalisation	Median Score Received	Outcome
11	I find it easier to stick to my regular products and services as I know I am happy with them rather than consider alternatives which might be better for people or the planet	Apathy	>= 5	5	Generalise
37	Since using the website, I would now be more likely to choose a product with a higher score than my habitual or regular choice.	Apathy	>= 5	5	Generalise
38	After using RR I am more likely to care about Impact Data in all of my shopping choices going forward	Apathy	>= 5	5	Generalise

Table Twelve – Breakdown of results: “Apathy”

The results relating to the barrier theme of “Apathy” show that participants were inclined to stick to their habitual products, but that the prototype had impacted them in some way to potentially behave differently in future. Of the four participants who said they would **not** sign up to the scheme: two were related to “Lack of Time”, in line with earlier findings on this related barrier, one suggested they were not inclined to search out product information and the final participant was not in favour of reward schemes in general.

Ultimately, it is to be expected that some proportion of participants will reject a solution due to misalignment of personal values and opinions and the numbers experienced here are not a great concern for these findings. The sample size adopted in this research is not large enough to draw any statistical inference, so it is not appropriate to say if a larger sample would still produce the same results in terms of disengagement for the same reasons. For any prototype to be successful in a production environment, careful marketing, training resources, information and live support need to be both available and easily accessible. This allows additional context to be provided and could lead to a dialogue which might change people’s perceptions or views in a positive way. This was not possible in a research climate heavily impacted by the COVID-19 pandemic and was addressed in chapters three and five.

In summary, the prototype was considered to have passed User Acceptance Testing (UAT) in this instance, with a good degree of acceptance in a high number of participants. Significant feedback relating to “Lack of Time” appears to confirm the existence of that barrier as identified in the interviews. There most significant area for consideration and discussion related to personal values and attitudes. This topic is addressed in the next section of this chapter, where the qualitative supporting data collected as part of the survey will be reviewed and considered alongside any statements tested relating to public opinion and personal values barrier themes.

### **Questions Relating to Public Opinion, Attitudes and Values of Participants**

Figure Eight suggested that “Personal Values” were both an antecedent and a barrier to engagement in Sustainability Accounting and Reporting (SAR) data. It was therefore appropriate to test these findings, and it was concluded that they appeared to generalise to the larger sample. Table Thirteen summarises responses to statements relating to both public opinion and personal values, the latter also being an antecedent to engagement in SAR, in Figure Eight.

#	Statement	Score for Generalisation	Median Score Received	Outcome
12	News stories and world events influence my values especially in the areas of impact on people and the planet	>= 5	5.5	Generalise
22	I want to shop with a business that shares the same values as me	>= 5	6	Generalise
23	It is important to me that a business is honest and authentic about its impacts on people and the planet	>= 5	7	Generalise
24	I need to trust a business to shop with them	>= 5	6	Generalise
25	I would stop shopping with a business if they acted contrary to my beliefs and values	>= 5	6	Generalise
26	I wouldn't engage with Impact Data if I felt it wasn't fully transparent	>= 5	6	Generalise
45	Responsible Reward Scores would influence my values in the areas of impact on people and the planet	>= 5	6	Generalise
46	The example comments I read by other Responsible Reward users are likely to influence what I consider important in terms of impact on people and the planet	>= 5	5	Generalise
47	Reviews and comments by other Responsible Reward users would influence my perception of a business or product on the website	>= 5	5	Generalise

Table Thirteen – Breakdown of results: themes relating to personal values

Findings reported on “Public Opinion”, “Honesty”, “Authenticity”, “Trust” and “Shared Values” as antecedents or influences on engagement appeared to generalise to the larger sample. It is interesting to note that the statement relating to “Authenticity” (23) was the highest score received in the entire survey. Key additional findings suggest that shoppers would disengage from a brand if their trust was violated, and that the online community elements of the prototype have the potential to change personal values, perceptions and attitudes towards business and products. This potentially mitigates some of the key issues discussed in the previous section.

Two final open questions in the survey yielded a total of 39 additional statements suitable for coding, which was conducted using the same approach as detailed in chapter three. Whilst it is acknowledged that the volume of data is not large enough for valuable thematic analysis, it did provide useful context for the discussions contained in chapter five. A summary is displayed below.

ID	Theme	Category / Group	Occurrences
1	Suggestions (including design ideas)	User Acceptance Feedback	34
2	Feedback (Positive & Negative)	User Acceptance Feedback	13
3	Scoring / Verification / Data	Data / Information	13
4	Macro environment	Externalities	7
5	Engaging / Story / Narrative	Engagement	7
6	Rewards	Extrinsic / Intrinsic Rewards	6
7	News, Public Opinion and Reputation	Externalities	5
8	Extrinsic Rewards	Extrinsic / Intrinsic Rewards	5
9	Education	Mediator	4
10	Environmental	The Planet	3
11	Time	Barriers	2
12	Charity	Extrinsic / Intrinsic Rewards	2
13	Complexities & Tensions	Externalities	2
14	Critiques	Negative Feedback	1

Table Fourteen – Summary of thematic analysis

Participants were keen to provide feedback and suggestions, both positive and negative. The two themes grouped under “User Acceptance Feedback” comprised 36% of the total themes coded, and concerned all aspects of the prototype. Suggestions ranged from location and colouring of controls, different scoring criteria and ideas for new features such as notifications. This is evidence of a high level of engagement in the exercise of user acceptance testing, and a positive indication for future production versions.

The next most significant theme concerned feedback on how scores were calculated and verified to ensure the system was neutral and credible. For example, participants were concerned that manufacturers could not “game” the scores or scoring criteria, that all data was independently verified using a standard, unbiased approach. These concerns resonated with three antecedent conditions to engagement derived as themes from the interview phase: “Trust”, “Authenticity” and “Transparency”. The type and nature of rewards received was also an emergent theme, coded a combined total of eleven times. Participants tended to prefer extrinsic rewards such as discount or gift vouchers. Two participants suggested that an option for charitable donations by the retailer would also be an appropriate reward. The qualitative data reflected a general tendency towards extrinsic rather than intrinsic reward types (Ryan and Deci, 2000, p.55).



The below comment was made by a participant, highlighting an interesting observation on the purpose of the prototype:

*“Mostly, the “Reduce, Reuse, Recycle” mantra means “buy less”... but to get more Responsible Rewards I have to “buy more”!”*

The prototype was designed to increase stakeholder engagement in SAR data, not directly increase consumption of goods and services. However, the extrinsic motivation towards gaining rewards could result in increased consumption which is a potentially negative side effect. This topic warranted further conversation and was addressed in chapter five.

Themes relating to “Macro Environment”, “Government”, “News, Public Opinion and Reputation” occurred a combined total of twelve times, resonating with the theme “Public Opinion” illustrated in Figure Nine. At least three participants referred to a preference for national governments taking a more active role in controlling responsible consumption through legislation. The topic of broader and more representative SAR for multiple stakeholders is a historic challenge which many believe unlikely to succeed on its own as a method of engagement (Freeman *et al.*, 2010, p.141). However, this approach could form a part of a multi-level initiative supported by engagement technologies such as those applied here.

Participants stated in their supporting comments that they felt understanding the “story” behind products, their scores and the supporting data was important to them. One participant suggested that data could be presented differently according to differing personality types, if this data were available. Many said they found the narrative elements an engaging aspect of the prototype, and both this and the personalisation of elements of the user experience warrant focus in any future production iterations of the design. In the same way as this mixed methods design and the prototype created was tailored to a specific research question (Creswell and Plano Clark, 2011, p.7), any production version of the prototype would benefit from elements of personalisation for its user base, a common technique adopted in user interface design in certain areas of software development (Danckwerts, Meißner and Krampe, 2019, p.114).

Finally, themes relating to the barrier theme of “Lack of Time” as shown in Table Ten were prevalent in this supplementary data. As reported in an earlier section, these users felt that a lack of time for involvement in reviewing product sustainability scores would prevent them from signing up to a production version of the prototype. This reinforces the view that effort must be invested in any future design to ensure it remains both convenient and unintrusive in terms of the necessary time investment required by users.

### **Section Summary – Quantitative Phase**

The second half of the results chapter summarised the data collected and analysed as part of the second phase of the exploratory sequential design. A collated summary of the individual results presented in this chapter can be found in the appendices.

The two aims of this phase were: first, to test if the barrier themes identified in the first phase generalised to a larger sample of 44 participants, and second to determine user acceptance of the prototype designed to contribute towards mitigating these barrier themes. Addressing the first aim, the themes identified in the first phase **did** generalise to a larger sample in 75% of cases. The second aim was achieved with 90% of users confirming acceptance of the solution and 61% confirming perceived suitability of the general concept of rewards as effective means of engagement. The prototype was also found by participants to contribute towards mitigating the barrier theme of “Apathy”.

There was an evident tension found between product performance, price and sustainability rating. In general, participants tended to rank product performance as their most important consideration. The rewards received for any “responsible” purchasing were in general accepted as an effective means of increasing engagement. Whilst participants favoured extrinsic rewards in the prototype, there was support for intrinsic, product-linked “experience” rewards which opened possibilities for synergistic stakeholder outcomes. Participants placed a high emphasis on trust, authenticity, and data reliability as antecedents to their engagement in the prototype and Sustainability Accounting and Reporting (SAR) data in general. “Lack of time” as a barrier to engagement, whilst not conclusively found to be a generalisable theme, was a recurrent reason given for stakeholders not engaging in SAR data or the prototype.

A total of 39 additional statements from participants were analysed, coded, and reviewed to draw additional conclusions summarised in this chapter. These provided evidence of high engagement in the user acceptance testing exercise and drew attention to key topics for further exploration. These formed the foundation for the next chapter of this thesis.

## **CHAPTER FIVE - DISCUSSION AND REFLECTION**

### **Overview of Chapter**

This penultimate chapter starts by exploring five key discussion areas highlighted from the results summarised in the previous chapter. It then explores the limitations of the research design and makes recommendations towards increasing engagement in Sustainability Accounting and Reporting (SAR), alongside future directions for research. Finally, to underline the impact made by this thesis, a section reflecting on the contributions to both knowledge and practice closes the chapter.

### **Key Discussion Points**

The issues underlying stakeholder engagement in Sustainability Accounting and Reporting (SAR) are complex, multi-faceted, so-called “wicked problems” (Beinecke, 2009, p.2). This forms the basis of the first key discussion point in this chapter.

### **Tensions, Complexity and Engagement – Searching for a Path Forwards**

There is a complex tension between an organisation’s financial, social and environmental objectives. There are multiple arguments and conflicting viewpoints in this discussion, and it is not the purpose of this research to entirely resolve this tension. However, this tension is evident even in presenting a prototype solution such as that demonstrated in this research.

The multiple ways of assessing the impact of a product is one example of such a complexity. A product with a lesser social impact produced by an organisation paying a higher living wage may utilise more plastic material in its production, therefore having a greater wider environmental impact at a macro level. Whilst the prototype solution did offer users the option to choose what issues were highest on their personal agenda, ultimately the complex interconnectedness of sustainability issues leads to impossible trade-offs (Horisch *et al.*, 2014, p.331).

Participants in some cases explicitly highlighted these perceived contradictions, and one common example of a tension was that of the use of extrinsic rewards. By rewarding

behaviour related to purchasing volumes, levels of consumption may be increased, exacerbating associated social and environmental impacts. Even if an organisation manages these impacts well, should incentivising behaviours that do not involve increased consumption be considered instead? The “circular economy” (Visser, 2015, p.112) where every part of a product can be re-used or recycled with zero waste could hold the answer to this, and rewards offered could be integrated into circular processes. There are already multiple examples of bottle deposit schemes or innovative recycling schemes (BBC News, 2019c, [online], 2020d, [online]), proposed as solutions to public outcry about single-use plastic products (BBC News, 2020c, [online]) that provide precedent here.

Many participants were by nature very engaged in the topic, evidenced through their responses and through a particular question concerning the impact of their purchasing on people and the planet. Whilst this question may be open to unconscious confirmation bias, it is a useful baseline which produced a median result of six: “Agree”. A full production version of the prototype used herein would target not these “engaged” consumers, but those who are apathetic, or have a “value-action” gap between their responsible purchasing intentions and subsequent actions (Davis *et al.*, 1989, p.984; Devinney *et al.*, 2010, p.51; White *et al.*, 2019, [online]). The paradox here is that obtaining responses from those types of consumers would be difficult, if not impossible. Accordingly, the research had to rely on those engaged consumers willing to commit significant time and effort to participate in an interview or acceptance testing of the prototype. This thesis asserts that real value will be realised when the prototype can be tested on a wider basis with the “disengaged” consumers, rather than the engaged percentiles who participated in this research. This signposts an eventual route through to substantial progress in consumer engagement in SAR.

Extrinsic rewards of various types for collecting points were the clear preference of users of the prototype in this research. Froehlich (2014) suggests that this use of extrinsic rewards for so-called “green gamification” is a short term and “brittle” approach and that longer term, intrinsic motivation should be what drives users to interact with such a solution (2014, p.584). Put another way: people need to care because they care, and not because they are paid to care. The shortcoming associated with rewards are a significant critique of so-called operant conditions (Skinner, 1953), equally evident in parallel literature on behaviour (Ockwell-Smith, 2017, p.77). However, this thesis asserts that this initial extrinsic

“hook” is a necessary tool to build subsequent long engagement in the SAR domain, and it is unrealistic to assume consumers are immune to such external influences (Chen and Dibb, 2010, p.325). This is evidenced by the power of combining social media and public opinion (Bruns *et al.*, 2013, p.873; BBC News, 2018a, [online]) and platforms like CoGo (2018, [online]) using the principles of nudge theory (Halpern, 2015, p.57). This, however, should not distract would-be designers from focusing on the detail and quality of their gamification design beyond that initial “hook” (Adamou, 2019, p.33).

A “snowball effect” over time can instigate a groundswell of opinion creating the necessary intrinsic motivation and long lasting, sustainable change desired. Subscription platforms have long used such ubiquitous “free 30-day trial” approaches (Datta, Foubert and van Heerde, 2015, p.217), in some cases facing challenges after the initial intrinsic “hook” (2015, p.225). However, in the case of SAR data, the gravity of the subject matter and the “amplification” effect of the social media and public opinion is significant enough to mitigate this challenge. Put simply, this thesis asserts that harnessing public opinion as both an antecedent and a mediator through using gamification with extrinsic rewards as a “hook” will create momentum in SAR, attracting news coverage and public discourse. In spite of the potential impact of the spectre of fake news (BBC News, 2018b, [online]), this approach creates a force towards closing the “value-action” gap that has dogged this area (White *et al.*, 2019, [online]), and could lead to the creation of shared value (Porter and Kramer, 2011, p.76) and the desired synergistic outcomes (Mackey and Sisodia, 2013, p.34) discussed in chapter four. The concept is illustrated below.

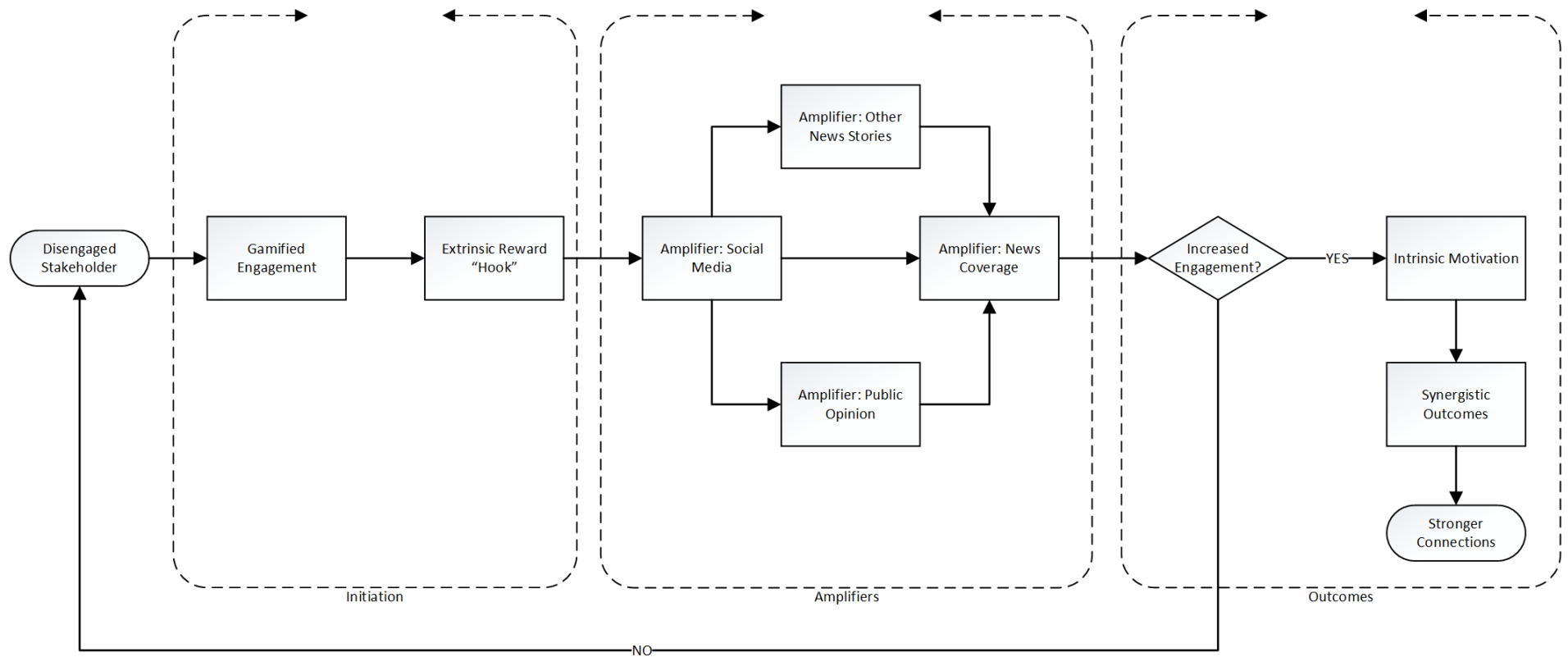


Figure Fifteen – Modelling how gamification might contribute engagement

This thesis asserts that by combining these factors a powerful method of initiating, raising and amplifying awareness of responsible purchasing is created. This represents the start of a long process towards creating or increasing the desired engagement in SAR. Equally, generalisable value outside the context of SAR can be found in this model too. Gamification techniques resulting in extrinsic rewards can create the all-important initial “hook” of engagement in tasks which may previously have been perceived as “boring”, “everyday” or the cause of disengagement. The effectiveness of a scheme or approach, and whether it causes the “amplification” to develop extrinsic to intrinsic motivation will vary from scheme to scheme. There are, however, some ethical considerations and drawbacks that must first be addressed if this approach were to be driven forward.

### **Behavioural Influence, Manipulation or Nudging?**

Two fundamental principles of the concept of the prototype were to reward responsible behaviour and make suggestions for alternatives more aligned to stakeholder’s values and preferences in key areas of “people, profit and the planet” (Elkington, 1999, p.73). Ultimately, this is a form of behavioural influence, even if well-intentioned.

As discussed in earlier chapters there are multiple ethical considerations with any such approach. Three of the most relevant to this research are those raised by Hung (2017), Woodcock and Johnson (2018) and Trittin *et al.* (2019). Hung (2017) discussed the risk of exploitation and erosion of trust (2017, p.60). Woodcock and Johnson (2018) divided implementation of gamification into the negatively-intentioned, manipulative “gamification from above”, and the more well-intentioned, subversive player-driven “gamification from below” (2018, p.543). Trittin *et al.* (2019) critiqued gamification for being reductionist, and over-simplifying complex problems (2019, p.142). All such critiques could be considered applicable to this research and provide a framework for discussion in this section.

Zuboff (2015) is rightly concerned about the use of data to pursue revenue and achieve “market control” (2015, p.75), however, this is clearly not the intention of “Responsible Rewards”. The primary purpose is to address underlying barriers to engagement in Sustainability Accounting and Reporting (SAR). The secondary purpose is to amplify this by making the process fun, rewarding and competitive, drawing on the principles of gamification. As such, the prototype is closer to a communication tool or education



implementation of gamification than one designed to manipulate purchasing behaviour. It is therefore more aligned to “gamification from below” than “gamification from above” (Woodcock and Johnson, 2018, p.543) and intended only to present information and “nudge” consumers towards alternative options (Visser, 2011, p.201; Halpern, 2015, p.57). This process does necessitate both behavioural influence and the reduction of the complex problems and tensions discussed in the previous section into a more manageable form. These are the topics of concern for both Trittin *et al.* (2019) and other critics of behavioural influencing and “nudge theory” who warn of its impact on liberty and freedom of choice (Sætra, 2019, p.1). This thesis found that such complexities are a perceived barrier to consumer engagement in SAR and asserts that reducing these complexities to a score is both necessary and justifiable to achieve the initial “hook” discussed in the previous section.

Addressing concerns related to impact on liberty and choice: this thesis asserts that *intention* is the critical factor when considering such problems. The position set out herein is that significant action is needed to address issues of stakeholder engagement in SAR, and this is the intention of this application of gamification. Improved stakeholder engagement in SAR should ultimately lead to more sustainable business practices and improved outcomes for all stakeholders. The prototype simply provides clear communication and nudges that some believe consumers need to make better informed decisions (Visser, 2011, p.201) and is in no way intended to adversely impact liberty or freedom of consumer choice. Incentives are applied rather than penalties, despite the perceived success of initiatives using punitive techniques in reducing proliferation of single-use plastic (BBC News, 2020c, [online]). Chapter two concluded there was little choice but to acknowledge the climate emergency and seek more sustainable courses of action. Using techniques such as those adopted by the prototype are justifiable on this basis alone, despite the persuasive critiques discussed in this section.

However, this defence neither deflects scrutiny nor justifies behaviour contrary to this argument, as noted by Hung’s (2017) critiques surrounding issues of trust and exploitation. This thesis found trust to be a key antecedent to engagement. Therefore, any production version of the prototype (and organisation set up to deliver and manage it) would have to embody an exemplar model of trust, transparency, and impartiality akin to that it promotes. This is effectively explained using the example of ethical data usage.

“Responsible Rewards” should exceed the bare minimum requirements set out in all appropriate guidelines and in particular the General Data Protection Regulation (GDPR). The “purpose limitation” placed on data processed under the GDPR (I.C.O, 2018b, [online]) is a key element for consideration. For example, the prototype has features which suggested tailored recommendations for products with higher scores more aligned with stakeholder preferences. The data used for determining these recommendations should only be used for this purpose, and not, for example, for targeted marketing based on this data, as critiqued by Zuboff (2019) in her concept of “surveillance capitalism” (2019, p.11). A production version of “Responsible Rewards” should have clear and well-articulated information security policies, rigorous data controls, strong security, and clear agreements with partners as to data control and responsibility. Compliance initiatives such as ISO 2700-1 (International Organization for Standardization, 2013, [online]) provide a framework for market and consumer confidence in these areas.

Whilst responsible data use can help reduce the likelihood of cynical marketing or surveillance capitalism (Zuboff, 2019, p.11), in reality practical problems could still occur until critical mass and choice of available products on the platform becomes wider. For example, if there was only one manufacturer of dishwasher tablets involved in “Responsible Rewards” suggestions for their products would be the only available option in this category!

There is clearly much to do if any organisation were to consider making a production version of the prototype used in this research. Some preliminary discussion on such practical applications forms the subject of the next section of this chapter.

### **Considerations for Practical Application of the Prototype**

As this thesis was submitted for the award of a professional doctorate it is appropriate to discuss the potential practical implications of creating a production version of the prototype used. This discussion is informed by the author’s professional experiences, literature review and contributions from participants. This section addresses Research objective four and informs the contribution to practice. There are three key themes explored: financial and structural, technological, and social.

Addressing financial considerations, it is apparent a considerable investment would be needed to make “Responsible Rewards” a reality. Whilst it is not possible to quantify this figure without a comprehensive business case (an objective outside of the scope of this research), evidence provided by similar projects points to significant orders of magnitude (Basul, 2020, [online]). Whilst significant, when considered alongside the gravity of the problem it contributes to solving and compared to the scale of government aid invested in the wake of the COVID-19 pandemic (BBC News, 2020e, [online]), an element of perspective is gained. Aside from private investment or borrowing, there are many ways such investment could be raised. One such appropriate approach may be a joint venture with participating manufacturers and retailers. This is both an effective way to spread cost and achieve synergistic outcomes for all stakeholders (Mackey and Sisodia, 2013, p.34).

Discussions on financial implications inevitably lead to considerations relating to the company structure and mission of any organisation incorporated to deliver “Responsible Rewards”. It is important for the success of any such initiative to have a clear mission and objective, articulated to all stakeholders and to be clear about its intentions with respect to profit. This should flow into the fundamental structure and articles of association of the company. As such, structuring such an organisation as a social business, ideally a B-Corp (Mackey and Sisodia, 2013, p.313; B Labs, 2018, [online]) may be an appropriate approach. The question of profit is key, and it seems inappropriate for such an organisation to directly profit from activities that incentivise responsible purchasing, for obvious reasons. Therefore, any operational profits should either be reinvested in improving the effectiveness of the platform, or donated to charity, as suggested by survey participants. It was clear from participant feedback that care should be taken to address the appropriateness of rewards and to ensure that the values underlying the prototype did not encourage behaviour counter-intuitive to its core mission.

Practically, the biggest challenge for any production prototype will be addressing the barriers to “Producer” stakeholder engagement and participation, as determined by this thesis. In addition, many such organisations may already have their own sustainability initiatives, missions and values to consider, and will also already be involved in reward systems such as “Nectar” (Nectar Loyalty Ltd, 2018, [online]). Multiple rewards schemes would likely confuse customers and introduce unnecessary complexity and may even be an insurmountable barrier to implementation of “Responsible Rewards”. One potential

solution to both this and the investment challenge would be to combine such schemes in a synergistic way. For example, providing “Nectar” points as rewards through “Responsible Rewards” would be a way of achieving penetration to a wide number of outlets and users, whilst reducing some of the technological barriers to implementation.

Such technological barriers to implementation include how “Responsible Rewards” might be distributed and integrated into physical and online stores. Addressing online platforms first, the proliferation of internet technology and languages mean that integrating a “Responsible Rewards” prototype in the way envisaged in the proof of concept will be challenging. A “RESTful” application programming interface (API) written in an established language such as JSON (Ionescu, 2015, p.68) is an appropriate way to achieve this. Such APIs provide a standard, simple text-based interface which is understood by many programmers thereby encouraging adoption (Ionescu, 2015, p.69) and lowering associated costs through market forces. Effective integration documentation would also be essential, with coding examples. Sharing such examples, code, knowledge and intellectual property in an “open” way would also resonate with the mission and structure of any organisation set up to create the platform, and is in line with successful approaches taken by organisations such as Tesla (BBC News, 2014b, [online]; Musk, 2014, [online]), Volvo (Volvo Car Corporation, 2019, [online]) and many others (Leggett, 2014, [online]).

Adopting “Responsible Rewards” in the physical retail environment would be more challenging and costly, which is why seeking synergies with an existing reward platform may be an appropriate approach. A suitable method for distributing “Responsible Rewards” physically would be to use a mobile phone application. Whilst this might add to the cost of implementation, it would likely reduce costs associated with hardware manufacture and distribution. It would also enable the use of the camera on the smart device for barcode scanning as a means of viewing scores and Sustainability Accounting and Reporting (SAR) data in a convenient and engaging way.

Further technological challenges can be found in volumes of SAR data that would need to be categorised, loaded and scored for each product featured on “Responsible Rewards”. This would bring into scope all such challenges associated with proliferation of standards discussed in chapter two. However, the system could be implemented incrementally, with products that have no score applied yet highlighted as such. This would create incentives

for manufacturers to become involved and mitigate any negative stakeholder perceptions associated with their lack of presence. An example of such a “missing” score was included in the prototype used in this research. Whilst none of these technological considerations are insurmountable, they underline the size the associated implementation project, which is a barrier in itself!

Once the technology is in place, there are associated social considerations to address which impact how stakeholders may interact with the platform. The variability that putting a system into the hands of users creates is an interesting final area of discussion to explore.

### **Withstanding the Test of End Users: General Discussion**

Whilst the mitigation of barriers identified by this research should help increase stakeholder engagement in SAR, further effort will be required to better understand behaviour of users once engaged and active on the platform. Walz and Deterding (2014) suggest several such unintended consequences including potential “gaming” of the system and ethical considerations around whether the context entices users to disclose more information than they usually would (2014, p.6). Whilst both ethical and security considerations have been discussed already, unintended social consequences warrant discussion. Any production version of the prototype should undergo rigorous User Acceptance Testing (UAT), through a larger scale version of that conducted in this research. This would highlight unintended consequences and issues, many of which are impossible to find when working with a prototype. All new platforms face challenges to credibility and need to build confidence, UAT processes serve to address this and highlight problems developers and designers of solutions do not recognise due to their “closeness” to their products.

Ruminating on the social considerations of gamifying Sustainability Accounting and Reporting (SAR) raises questions of the future direction of the technology. Some go as far as to say that organisations in the future will proactively monitor stakeholder “health” (Visser, 2005, p.183) in the same way as individual fitness tracking applications do today (Fitbit Inc., 2016, [online]). Invasive approaches such as this may lead to users disengaging from the system due to the behavioural manipulation, or surveillance concerns discussed in previous sections. As a counterpoint, there was appetite amongst participants to this

research for national governments to take a *more* active role in controlling responsible consumption through legislation, a point reinforced by the literature (Froehlich, 2014, p.584). The multiple possible outcomes from a wider test of “Responsible Rewards”, reflects the inherent complexity in sustainability issues. It is very challenging to model complex systems than include people as part of the behaviour (Key, 1999, p.317), so the only appropriate solution is to undergo wider testing. It is therefore recommended to set up UAT with wider group interactions enabling the two-way discussion, feedback and suggestions on engagement (O'Brien and Toms, 2008, p.938) that was not permitted under the COVID-19 restrictions affecting this research.

Whilst discussing wider collaboration, it is appropriate to consider if gamifying a system and forcing users to consider these issues in isolation (on their personal devices) contributes to the problems of social isolation faced in society, or excludes those without access to technology from important conversations. Addressing problems in isolation rather than seeking engagement with other stakeholders is likely to be less effective than enabling groups to build consensus and solving problems together. Ultimately, the answers to these questions too lie in further research. However, this thesis asserts that the power of social media and technology lies in its ability to create engagement, discourse and collective thought, in this case on the challenges we face as a society around sustainable business. Whilst gamification techniques or the “Responsible Rewards” platform itself might not be agreeable or accessible to every stakeholder, it certainly creates discussion and hopefully momentum. This is powerful and can lead to ideas sourced from “the crowd” as to what business and society should be expected to do (Maas *et al.*, 2016, p.240). Questions of the unintended social consequences are important and deserve attention throughout any future practical implication of “Responsible Rewards” but are not soluble solely by this thesis. It is expected that any organisation incorporated to manage the platform would have strong ethical and social principles, ideally validated by a “charter” to address its multiple responsibilities in these areas.

In the experience of the author, both critics and proponents of solutions such as “Responsible Rewards” tend to think about their effectiveness in binary terms. Peters (2012) refers to this as “dichotomous thinking” (2012, p.311), or put simply: they either “work” or “don’t work”. This thesis asserts that in sustainability, as in many contexts, there are multiple “shades of grey”. Paraphrasing or drawing further inspiration from Peters

(2012), this thesis asserts that progress on sustainability issues, no matter how big or small, is positive (2012, p.281). Such progress may be achieved through the amplifiers of social media, public opinion and news coverage summarised in Figure Fifteen, supported by multiple examples provided throughout these chapters.

Inevitably, practical and social implications surface as part of the barriers to delivery of tools such as “Responsible Rewards”. These are by nature barriers to engagement in the subject matter of SAR and are relevant to acknowledge. The unique practical contribution of this research was to prove the concept that such a prototype could mitigate some such barriers. This practical contribution was alongside a contribution to knowledge discussed in chapter two, which is appropriate to reflect on as part of this discussion chapter.

### **Revisiting the Proposed Revision to Stakeholder Theory**

Chapter two presented a novel conceptual model in Figure Five. This model positioned concepts of Stakeholder Theory (ST) against measures of both scale and interaction imposed by the chosen medium of stakeholder interaction.

The value of the results discussed in the previous chapter are strengthened by the development of the model shown in Figure Fifteen. The model showed how concepts of gamification may contribute to building long term intrinsically motivated engagement in stakeholders, through initial short term extrinsic “hooks”. This built on themes identified in earlier research by multiple authors (Froehlich, 2014, p.583; Robson *et al.*, 2016, p.30; Dessart, 2017, p.379; Swanson, 2020, [online]). The analysis of results and the creation the models led to their consideration alongside the concepts of cognitive, behavioural, and affective engagement noted in chapter two. This became appropriate as a theoretical lens to consider how user’s interactions with the system may change over time, as implied by these models. Figure Sixteen illustrates this by expanding on the high volume, highly interactive quadrant of the model presented in Figure Five as an example. Gamification would be appropriately positioned in this quadrant of the model.

The results obtained from this research suggest that concept of viewing ST through the lens of the medium of engagement is valid and warrants further investigation in future research. The remaining paragraphs in this section discuss the model in further detail.

## Revisiting a View on Stakeholder Theory

Conceptualising relationships between motivation, stakeholder engagement and high volume, highly interactive mediums of engagement (expands on upper right quadrant of Figure Five and works in conjunction with Figure Nine)

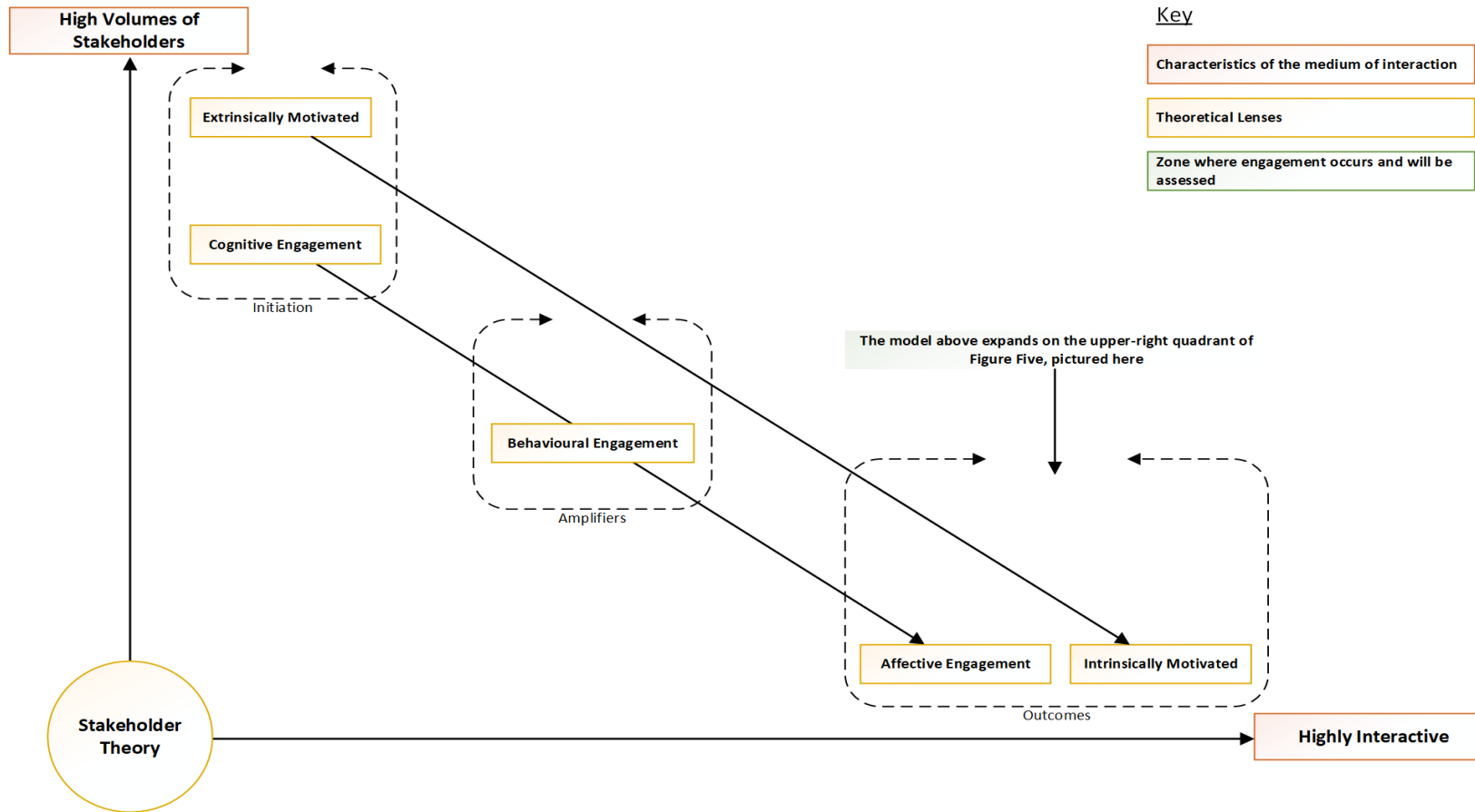


Figure Sixteen – Revisiting the revision to Stakeholder Theory



Each “zone” from Figure Fifteen is overlaid onto the chosen quadrant of the initial conceptual model from Figure Five. In the zone named “Initiation”, there are high volumes of stakeholders with low levels of interaction with Sustainability Accounting and Reporting (SAR) data, reflecting both the findings of the literature review and the initial data gathered in the semi-structured interviews. Following the application of an intervention using gamification, stakeholders are extrinsically motivated by the points and rewards provided to increase their engagement in SAR (Robson *et al.*, 2016, p.30). At this point, their engagement is most likely to be “cognitive engagement”, where they become focussed on the prototype and absorbed in the task of using it (Dessart, 2017, p.377). This represents the beginning of their engagement with the solution, and is similarly represented in other models (Adamou, 2019, p.105) in differing contexts.

If stakeholder engagement persists, it is expected that this level of interaction will increase over time. The findings of this research led this thesis to theorise that this will be amplified by the concepts shown in Figure Fifteen. This effect occurs in the zone named “Amplifiers”. The downward trend plotted between “Initiation” and “Amplifiers” suggests that some users will continue to interact and use the system, subsequently increasing their levels of engagement in SAR, whilst others will not. This was driven by the survey finding that 39% of users considered gamification an ineffective solution and are expected not to persist in using it, reflecting the “brittle” nature of extrinsic rewards as a sole cause of long term behavioural change (Froehlich, 2014, p.584). Whilst it was neither possible nor intended to determine an accurate percentage of disengaged users, it is reasonable to assume this based on the survey data.

For those who *do* remain engaged, the “Amplifiers” identified in Figure Fifteen should start to influence the stakeholder’s motivation type towards intrinsic, and the engagement towards “Affective engagement”, where enthusiasm and enjoyment begin to build towards the prototype (Dessart, 2017, p.377). This trend is continued to the “Outcomes” zone, where a lower volume of stakeholders reaches so-called “Behavioural Engagement”. This lower volume is anticipated based on an as-yet unquantifiable decrease in users over time in line with previous assumptions. This decrease may be caused by the initial novelty of the solution wearing off (Nobre and Ferreira, 2017, p.357), boredom or other situational factors, such as for example, changing their weekly shop to another platform. At this stage the motivation is anticipated to be of an intrinsic type, where the “active manifestations”,

learning and behaviour change are assimilated into changed behaviour, and stakeholders are likely to share and endorse the behaviour to their peers (Dessart, 2017, p.377).

This expanded model builds provides a framework for future consideration of how technological interventions into so-called “wicked problems” (Beinecke, 2009, p.2) might affect user motivation and engagement over time. This underpins the contribution to knowledge made by this research.

### **Limitations of the Research**

Whilst methodological limitations, critiques, assumptions, and key issues have been highlighted at the relevant points, this section draws together some key limitations alongside further considerations for discussion.

This research was based on a mixed methods exploratory sequential design, combining both qualitative and quantitative approaches as justified in chapter three. It has been stated extensively throughout that one objective of the design was to test if the themes identified in the first phase generalised to a larger sample. The size of this sample of 44 participants was not large enough to perform any statistical tests of internal reliability or validity, hence further generalisation beyond that stated herein was not possible. The objective of this research was not to make complex inferences from the data to create a novel contribution. The identification of barriers to engagement in Sustainability Accounting and Reporting (SAR) data and the creation of a proof of concept that passes user acceptance testing was the novel contribution made. Whilst questions relating to age, income and gender were included in the survey, it was not the intention of this research to test any themes identified against these measures. As such no further analysis was conducted on this data because of this sampling limitation.

As discussed in chapter four, participants to the survey identified as having a high level of engagement in the impact of their purchasing choices. Such high levels of engagement are unlikely to be representative in the general population to the same proportions. This reflects anecdotal conversations with participants about their perceptions of levels of engagement in sustainability issues in the wider population. It is likely that the pareto principle applies here, in that a small percentage of the population is highly engaged in sustainability issues, but the larger percentage exhibits limited engagement. Whilst neither

of these assumptions can be proven, the potential bias of the sample towards individuals highly engaged in sustainability issues is a potential limitation of this research.

The use of purposeful sampling in both phases of the research could exacerbate this potential limitation. For example, samples could be unintentionally biased by the perspectives of participants from similar types of organisations, in similar sectors. The act of a participant sharing the link to the survey on social media could entice followers from similar worldviews or perspectives to participate. This approach could be mitigated by conducting a larger scale version of the second phase of the research design, adopting appropriate statistical tests of validity and reliability.

The prototype was tested in the context of a “dummy” online supermarket website. The intention of future production versions of the prototype would be to present this in wider eCommerce settings, mobile phone apps or hand-held scanners in retail establishments. The results presented herein were tested in the micro-environment of a “dummy” supermarket with limited product lines, and without wider features such as payment processing or fully functional shopping “carts”. As such, the influence of these added user interface complexities, or those of wider macro-environments or physical devices means that the findings are unlikely to be representative of those contexts.

A critical assumption of this research was that, through the application of new approaches and technology, that engagement in a complex, problematic social issue such as SAR can be increased. This increase in engagement is assumed to have a future positive impact on sustainability through the provision of relevant, accurate and easily understandable information to stakeholders. This assumption, whilst also made in other notable pieces of research (Lamberton, 2005, p.24), it still unproven until tested in a production environment. The long-term nature of sustainability issues and the significant timeframes needed for interventions to yield results contributes to this limitation. Research gaps also suggest that the long term results of gamification are unknown (Hamari *et al.*, 2014, p.3028), further complicating this issue.

As chapter two highlighted, gamification is still a relatively novel domain both in practice and research (Nobre and Ferreira, 2017, p.359). This paucity of literature is itself a limiting factor, meaning that in some cases review and comparison of gamification research from

parallel domains was used as a basis to inform concepts in the thesis. Whilst this has been clearly stated at the relevant points, it may lead to constraints when attempting to generalise beyond scope of this research project.

Finally, there are limitations imposed by conducting part of the research during the COVID-19 pandemic, as explained in chapter three. Whilst extensive effort was made to ensure the research was able to be conducted remotely, “in person” workshops may have yielded different results due to the presence of the researcher in the room with participants. The psychological and social effects of the pandemic on society may also have caused participants to think or respond differently compared to normal conditions, especially concerning issues related to sustainability. For example, responses could have been influenced by either a heightened sense of responsibility to the local community (Dixon, 2020, [online]), or a renewed emphasis on and engagement with the local environment, as people spend more time outdoors during lockdown conditions (Kasriel, 2020, [online]).

The necessary use of video as opposed to an in-person presentation may have caused disengagement in participants. The nature of the medium of video and the lack of opportunity for interaction meant that the researcher had to take extra care to explain the finer details of the project. Consequently, the video was around twenty minutes in length. This length of video demands significant effort and attention to watch, limiting the pool of participants willing to invest the necessary time and effort in it. This perhaps explains in part the high median level of engagement noted in participants. The level of detail used may have caused disengagement in participants. Equally, the distractions caused by either the device the participant was using to watch it, or the environment they chose to watch it in could also have distorted the message. Whilst participants were asked to confirm they had watched the video, it is likely despite all attempts to mitigate this that some either skipped parts of it, or unknowingly misunderstood elements of it, which may have influenced the results.

### **Suggestions for Future Research**

Future research in the area of this thesis is supported by demand from the research community to pursue projects towards solving “wicked problems” (Molina-Azorin and Fetters, 2019, p.275). Accordingly, there are six key areas where further research would be

of benefit, which will be explored in this section. This is not an exhaustive list, as the context provided by the following paragraphs will show.

Firstly, whilst some may have historically had concerns about Sustainability Accounting and Reporting (SAR) on the internet (Gray and Bebbington, 2001, p.256) the results of this research warrant further more detailed investigations. An expanded, longitudinal study (Oppenheim, 1992, p.33) based on this project would be of interest. A study large enough to test or infer any statistical significance from the results would be preferable.

Additionally, a research project that tests the prototype in multiple contexts, physical applications or domains would address the limitation discussed in the previous section. For example, a physical application on a mobile or with a barcode scanner could be tested in a larger scale, longitudinal study alongside an online supermarket website to determine if engagement or behavioural results differ between the platforms.

Secondly, the question of future user behaviour following increased engagement in SAR is one of interest. Whilst progress on mitigating some of the barriers to engagement identified by this research is apparent, further effort will be needed to better understand behaviour of users during and after the “Amplifiers” stage of the models presented herein. The objective of researching this would be to ensure long term effectiveness of the intervention and to guard against any unintended consequences. Walz and Deterding (2014) suggest several such consequences including ethical considerations, negative externalities and whether the purpose of the gamification is successfully met by the solution (2014, p.6). The long-term nature of sustainability issues as discussed in the previous section also has influence here, and successful measurement of this will be a challenge (Waddock and Graves, 1997, p.304; Keeble *et al.*, 2003, p.150).

Thirdly, during the interview phases, especially those conducted with Producers of SAR, participants placed significant value on the collaborative “Roundtable” concept adopted by Responsible 100. Thus, research into the influence of this collaborative process on designing prototype solutions for raising engagement in SAR would merit further investigation. This thesis envisages a further mixed methods study combining focus groups (Braun and Clarke, 2013, p.107), netnography (Kozinets, 2015, p.79) and further user acceptance testing (UAT) may achieve this. This could be accommodated by a multiphase design (Creswell and Plano Clark, 2011, p.72), in which iterations of differing designs are

conducted sequentially towards an overall “programme” objective (Creswell and Plano Clark, 2011, p.100).

Fourthly, research underpinned by different theoretical lenses is an area where significant further contribution to knowledge can be made following on from this research. This thesis addressed the relationships between gamification, stakeholder theory (Freeman *et al.*, 2010, p.9) and self-determination theory (Deci and Ryan, 1985, p.35). Future research projects could address, for example, gamification’s potential relationships with the theory of reasoned action (Ajzen and Fishbein, 1980, p.6), the theory of planned behaviour (Taylor and Todd, 1995, p.151) or equity theory (Adams, 1965, p.273). Whilst not appropriate for this project, significant value could be realised by exploring these theoretical areas in a suitable context.

There are three quadrants in the original model in Figure Five which provide guidelines for future areas of investigation. Whilst these remaining quadrants were outside the scope of this project, papers authored across multiple domains included in the literature review suggest plenty of opportunities for future research. These domains include tourism, healthcare, politics and education to name a few (Ahmadi, 2020, p.315). The most promising of these are likely to be the tourism or education domains. Tourism is especially of interest given the sustainability synergies, the scale of the opportunity for improvement, the potential impact to be made, suitability as a news story (for “Amplification”) and the existing technology in the value chain where the prototype could be integrated. Such opportunities include online airport pages, airline check-in and activity booking near resorts. A gamification application would work similarly to “Responsible Rewards” by modifying the preferences categories to match key aspects of sustainable tourism, and adopting appropriate rewards to lessen impacts whilst both travelling and at the destination (Yen *et al.*, 2019, p.144). This echoes earlier findings presented in chapter two (Coombes and Jones, 2016, p.64). Similarly, there are diverse opportunities for future research into the application of gamification in the education domain. Whilst applications of gamification are already more prevalent here (Robson *et al.*, 2015, p.412; Armstrong and Landers, 2017, p.514), many believe that the future of learning technologies is likely to include a continuing “blend” with gamification techniques (Swanson, 2020, [online]).

Finally, gamification's application as a research tool in itself should not be ignored. Adamou (2019) advocates the use of gamification as a research tool (2019, p.94), both in more overt applications to engage participants in surveys (2019, p.313), or as a tool to generate data (2019, p.149). The latter instance is an area where more creative applications such as using immersive games to model sustainability engagement could yield real value. For example, it is feasible that an artificial reality concept such as "The Sims" (Electronic Arts Inc., 2017, [online]), where players create their own "towns", could have some application in the design of sustainable cities, or gather data whilst players engage with it and are educated on sustainability issues through play. Whole research projects could be based on this concept, in line with existing precedents identified by multiple authors (Adamou, 2019, p.173; Bonora, Martelli and Marchi, 2019, p.10; Yen *et al.*, 2019, p.148).

Clearly, there are many ways a significant contribution can be made from future research projects, built on the foundational contribution of this thesis. It is therefore appropriate to revisit the contributions proposed in chapter one and reflect on them in the context of the findings presented in chapters four and five.

### **Reflecting on the Contribution to Knowledge and Practice**

As is demanded by a professional doctorate, this research contributed to both knowledge and practice. It both addressed a research gap and lack of literature on gamification (Robson *et al.*, 2016, p.36), and created knowledge about a practical application of gamification. This contributed to potential solutions to both a specific organisational problem, and a wider issue in stakeholder engagement in Sustainability Accounting and Reporting (SAR). The details of these contributions and related theoretical implications were discussed in detail in earlier chapters.

The research conducted in this thesis made a novel contribution to knowledge by exploring the use of gamification toward stakeholder engagement in the reporting of SAR data, closing a knowledge gap in this area (Dunfee, 2006, p.323). It also proposed a revision to stakeholder theory to cater for the influence of the chosen medium of interaction and the eventual motivation of the stakeholder. The contribution to practice created new practical knowledge in the areas of gamification and the understanding of stakeholder behaviour

online. It also considered how new approaches may improve the effectiveness of SAR data and provided input into future research directions.

When reflecting on the intended contributions, there were areas where additional value was able to be created by this thesis. The contribution to knowledge was exceeded by additional revisions to the original conceptual framework presented in chapter two. This was because the findings provided extra insight into the motivational elements of the stakeholders who engaged with the prototype. A significant contribution to filling the research gap identified has been made.

The contribution to practice created suggestions for future applications of technology for Responsible 100 (R100) to consider towards increasing stakeholder engagement in their SAR data. By building on the themes and concepts articulated by participants, further practical options were considered in the previous section of this chapter which add value beyond R100, into wider organisational applications and consumer environments. Thus, a significant contribution to practice was delivered and research objective four was satisfied.

### **Reflection: The Influence of the Research Process on the Researcher**

Having completed analysis, discussion and reflection on the data and outcomes of the research it is appropriate to consider the researcher and how they have been influenced by the process of completing this thesis. This section addresses the influence of the research on the researcher and reflects on the personal change and learning outcomes from the professional doctorate process, prior to the concluding chapter of this thesis. The content on which it is based was again supported by entries in an online journal application “Day One” (Bloom Built Inc., 2019, [online]), used to record key events, associated emotions and reflections during this period of the research. There were three key reflections derived from this to highlight as part of this concluding reflection.

Firstly, the most noticeable personal element for the researcher was the development and recognition of the ability over time to be more comfortable with the uncertainty of the research “journey”. This is in stark contrast to the approach usually employed in professional practice of organisations: linear planning, monitoring and feedback. This resulted in the development of a useful skill transferable to the workplace for the researcher. This reflection was especially highlighted by the influence of the COVID-19



pandemic on the research, and how the design was modified and strengthened in response to the enforced social-distancing measures, as detailed in chapter three.

Secondly, the development of the skills of reflexive practice were also a key transferrable benefit to the organisational context along the lines of that described by Gardner (2014) in her concept of “the emotional life of organisations” (2014, p.83). This approach of using reflective skills to observe, interpret and hopefully understand the behaviour of others, and the multitude of influences that affect this behaviour, at a more critical and detailed level (Gardner, 2014, p.83), is one which the researcher can benefit in the future. In the context of this research, this skill assisted the researcher in interpreting the research data and themes, as well as contributing to understanding stakeholder motivations more effectively in a professional context.

Thirdly, the creation of the conceptual models based on the research data to codify the knowledge contribution in a transferable way was one which the researcher enjoyed and has benefitted from. In the context of this research, the models are a key part of the contribution to knowledge and permit the reinterpretation of a seminal theory. The skill of assimilating the knowledge and being able to present it in a form that shares the learnings will be a key benefit to the researcher in future.

In summary, the researcher has benefitted from the process of research by developing an ability to cope with uncertainty, refining a stronger capability in dealing with abstract concepts and the ability to deal with challenges in an unstructured way.

## CHAPTER SIX - CONCLUSIONS

This thesis has presented the background, context, literature review, methodology and results of research that investigated perceived barriers to stakeholder engagement in Sustainability Accounting and Reporting (SAR). As part of a professional doctorate programme, this research made a significant and novel contribution to both knowledge and practice. This was achieved by both addressing a research gap, and contributing towards solutions to real-world problems experienced by organisations (Banerjee and Morley, 2013, p.182).

This thesis established multiple research gaps in the domains of SAR, gamification, and stakeholder engagement online. These formed the basis of a contribution to knowledge that was reinforced by a review of academic and practitioner literature, discussed across chapters one and two. Subsequent themes were identified, leading to the creation of a novel conceptual model to underpin the research, presented in Figure Five. Stakeholder theory (ST) emerged as a pivotal theory on which to underpin the research, and a revision on this seminal theory was suggested as part of the novel contribution. The revision considered parameters relating to the medium of interaction between the stakeholders: numbers of stakeholders and the frequency of their interactions. This thesis asserted that these factors were fundamental to how we interact with organisations in an increasingly online operating environment.

This thesis concluded that, despite the grand vision and objectives of SAR initiatives, the concept was broadly failing to engage stakeholders and create the necessary traction towards solving sustainability's "wicked problems" (Beinecke, 2009, p.2). These problems are significant and the case was made that there was no viable alternative to addressing them.

Citing examples from news and recent world events, this thesis asserted that the combined power of social media, technology, social movements and public opinion could create increased momentum around SAR. Supported by the literature reviewed and the research gaps identified, the concept of applying techniques from the gamification domain was proposed as a potential solution. Accordingly, a suitable research design was created to investigate and test this, discussed in detail in chapter three.

This design, underpinned by the philosophical worldview of pragmatism, was a mixed methods approach. It utilised an exploratory sequential design, based on the completion of a pilot study. This design drew on the strengths of both qualitative and quantitative methods to mitigate weaknesses in each isolated method. It was justified as appropriate to the objectives of the research, appropriate to the research context and philosophically aligned to pragmatism. The COVID-19 pandemic occurred during the execution of the design, leading to modifications to support participant safety and the necessities of social distancing. Ethical implications of the research design were explained in detail and the limitations of the research addressed in chapter five.

Data was collected through a qualitative phase of twenty semi-structured interviews and analysed using coding and thematic analysis. A set of barrier themes were identified and used to design the second phase. This phase consisted of remotely instigated user acceptance testing based around a video and interactive website. This culminated in a survey asking questions based on the participant's interactions with the online prototype. The purpose of this was twofold. Firstly, to determine if the prototype would be "accepted" by users as a suitable method of increasing their engagement in SAR, and secondly to test if the themes identified in the interview phase generalised to a larger sample size.

The results were analysed and presented in chapter four. Themes identified were grouped into "Antecedents", "Barriers" and "Mediators" of Engagement in SAR. The influence of "Public Opinion" and the "Online Techniques" was identified as a significant novel finding, and a conceptual model was presented in Figure Nine to illustrate this. A total of 44 participants took part in the second phase of the research. The prototype was deemed "accepted" by more than 90% of these participants, with 61% confirming perceived suitability of the concept of rewards as an effective means of engagement in SAR. The themes identified in the first phase generalised to a larger sample in 75% of cases. Subsequent discussion, analysis and synthesis of these results was presented in chapter five to theorise beyond the data and make recommendations for future research. Such recommendations underpin the contribution to knowledge. These combine with the practical contribution made through identification of barriers to stakeholder engagement and tangible solutions to mitigate such barriers.

The interplay between the extrinsic rewards provided by the gamification prototype and the longer-term intrinsic motivations desired for persisting engagement in a complex subject such as SAR proved to be a key concept. A novel conceptualisation was modelled on how so-called “Amplifiers” of public opinion and news coverage (identified from the interviews and delivered via interactive social media), influenced motivations and user engagement over time. This thesis asserted that by combining all the elements presented in Figures Eleven and Twelve a powerful, novel method of initiating, raising and amplifying awareness of responsible purchasing is created. This created generalisable value outside the context of SAR by influencing engagement in tasks which may previously have been perceived as “boring”, “everyday” or the cause of disengagement in an important process.

Chapter five and the main body of the thesis was concluded with a section on recommendations for future research. All of these were underpinned by the foundational work of this thesis and the novel contributions to both knowledge and practice made.

### **Assessing the Original Purpose of this Research and Closing Thoughts**

The research question posed was:

*“What are the perceptions of producers and consumers on the use of interactive social media in processes for Sustainability Accounting and Reporting, and what are the perceived barriers to engagement, or possible techniques to increase engagement in the processes of SAR”.*

The perceptions and barriers of stakeholders were clearly identified, tested and proven to generalise in a high percentage of cases to a larger sample. This was achieved using an exploratory sequential mixed methods research design comprising of interviews and user acceptance testing of an interactive gamification prototype. This prototype used elements of gamification to test if these increased perceived engagement in Sustainability Accounting and Reporting, which in the majority of cases, participants confirmed it had. On the basis of these results it is reasonable to consider the research question successfully addressed.

Four separate research objectives were derived from this question. Research objective one was addressed by a review of literature resulting in the creation of an underpinning conceptual framework on which to structure the research. Research objectives two and

three were successfully completed by the execution of an exploratory sequential mixed methods research design. The data collected allowed extensive discussion, recommendations, and conclusions to be presented in chapter five, subsequently achieving research objective four. Accordingly, all the research objectives have been achieved.

The novel contribution of this research and the directions for future research identified suggest that several future projects could now be pursued. The question remains, however, as to why a design such as that tested in the “Responsible Rewards” prototype has not yet been implemented in a production version? Whilst no definitive answer can be offered based on this research alone, a hypothesis can be offered. It is likely to be caused by a combination of the barriers to engagement identified herein and the practical barriers to application discussed in chapter five. The most likely of these barriers are those related to financial and technical considerations, namely: the significant investment required and the technological challenges relating to wider distribution and adoption of such a technology.

This thesis asserts that the ongoing climate emergency necessitates urgent action in increasing the engagement of stakeholders in sustainability issues and concepts of responsible business. Techniques such as those used in this research are both worthwhile, valuable and positive. Whilst they may not comprise a complete solution to the complex sustainability challenges we face as a society, they represent both progress and the creation of knowledge, value and understanding of stakeholder behaviour which can also be realised in other domains and contexts.

## REFERENCES

AccountAbility (2018) AA1000 Accountability Principles 2018, New York: AccountAbility.

Ackerman, R. W. (1973) How Companies Respond to Social Demands, *Harvard Business Review*, 51, (4), 88–98.

Adamou, B. (2019) Games and Gamification in Market Research: Increasing Consumer Engagement in Research for Business Success, New York, *Kogan Page*.

Adams, J. (1965) Inequity in Social Exchange, **In:** L. Berkowitz (Ed.), *Advances in Experimental Social Psychology*, 267–299, New York.

Ahmad, A., Whitworth, B., Zeshan, F., Bertino, E. & Friedman, R. (2017) Extending Social Networks with Delegation, *Computers & Security*, 70, (2017), 546–564.

Ahmadi, M. M. (2020) Managing the New Gamified World: How Gamification Changes Businesses, *International Journal of Management, Accounting and Economics*, 7, (7), 305–325.

Ajzen, I. & Fishbein, M. (1980) Understanding Attitudes and Predicting Social Behavior, London, *Prentice-Hall*.

Amazon Mechanical Turk (2007) How it Works [Online], Available from: <https://www.mturk.com/how-it-works> [Accessed: 07.11.18].

Amazon.com (2014) Amazon's Top Customer Reviewers [Online]: Amazon.com, Available from: <https://www.amazon.co.uk/review/top-reviewers> [Accessed: 01.01.18].

Amis, J. M., Munir, K., Lawrence, T., Hirsch, P. & McGahan, A. (2018) Inequality, Institutions and Organizations, *Organization Studies*, 39, (9), 1131–1152.

Anderson, C. (2007) The Long Tail: How Endless Choice is Creating Unlimited Demand, London, *Business Books*.

- Apple Inc. (2016) A Bold Way to Look at Your Health [Online], Available from: <https://www.apple.com/uk/ios/health/> [Accessed: 05.11.17].
- Appleton, J. J., Christenson, S. L., Kim, D. & Reschly, A. L. (2006) Measuring Cognitive and Psychological Engagement: Validation of the Student Engagement Instrument, *Journal of School Psychology*, 44, (5), 427–445.
- Armstrong, M. B. & Landers, R. N. (2017) An Evaluation of Gamified Training: Using Narrative to Improve Reactions and Learning, *Simulation & Gaming*, 48, (4), 513–538.
- Ashworth, L. & Free, C. (2006) Marketing Dataveillance and Digital Privacy: Using Theories of Justice to Understand Consumers' Online Privacy Concerns, *Journal of Business Ethics*, 67, (2), 107–123.
- Aupperle, K. E., Carroll, A. B. & Hatfield, J. D. (1985) An Empirical Examination of the Relationship Between Corporate Social Responsibility and Profitability, *Academy of Management Journal*, 28, (2), 446–463.
- B Labs (2018) About B Corps | Certified B Corporation [Online], Available from: <https://bcorporation.net/about-b-corps> [Accessed: 24.09.19].
- Babich, N. (2017) Everything You Need to Know About Wireframes And Prototypes [Online], Available from: <https://theblog.adobe.com/everything-you-need-to-know-about-wireframes-and-prototypes/> [Accessed: 03.01.20].
- Bacon, M. (2012) Pragmatism: An Introduction, Cambridge, *Polity*.
- Baert, P. (2005) Philosophy of the Social Sciences: Towards Pragmatism, Cambridge, *Polity Press*.
- Bailey, P., Pritchard, G. & Kernohan, H. (2015) Gamification in Market Research: Increasing Enjoyment, Participant Engagement and Richness of Data, but what of Data Validity?, *International Journal of Market Research*, 57, (1), 17.

- Baker, M. & Schaltegger, S. (2015) Pragmatism and New Directions in Social and Environmental Accountability Research, *Accounting, Auditing & Accountability Journal*, 28, (2), 263–294.
- Ballou, B., Casey, R. J., Grenier, J. H. & Heitger, D. L. (2012) Exploring the Strategic Integration of Sustainability Initiatives: Opportunities for Accounting Research, *Accounting Horizons*, 26, (2), 265–288.
- Balsamiq Studios LLC (2008) Company | Balsamiq [Online], Available from: <https://balsamiq.com/company/> [Accessed: 03.01.20].
- Balsamiq Studios LLC (2018) Balsamiq Wireframes | Balsamiq [Online], Available from: <https://balsamiq.com/wireframes/> [Accessed: 03.01.20].
- Banerjee, S. & Morley, C. (2013) Professional Doctorates in Management: Toward a Practice-Based Approach to Doctoral Education, *Academy of Management Learning & Education*, 12, (2), 173–193.
- Barnes, T. J. (2008) American Pragmatism: Towards a Geographical Introduction, *Geoforum*, 39, (4), 1542–1554.
- Basul, A. (2020) CoGo Raises £4m Investment [Online], Available from: <https://www.uktech.news/news/cogo-raises-4m-impact-investment-to-become-the-essential-app-for-green-revolution-20200819> [Accessed: 02.12.20].
- Baudrillard, J. (2014) *The Consumer Society: Myths & Structures*, London, Sage Publications.
- Baxter, R. J., Holderness, D. K. & Wood, D. A. (2016) Applying Basic Gamification Techniques to IT Compliance Training: Evidence from the Lab and Field, *Journal of Information Systems*, 30, (3), 119–133.
- BBC News (2014a) BP Found 'Grossly Negligent' in 2010 Gulf Oil Spill [Online], Available from: <https://www.bbc.co.uk/news/business-29069184> [Accessed: 21.10.18].



BBC News (2014b) Tesla Confirms Plans to Open up Electric Car Patents [Online], Available from: <https://www.bbc.co.uk/news/business-27824698> [Accessed: 03.12.20].

BBC News (2018a) Companies Sign up to Pledge to cut Plastic Pollution [Online], Available from: <http://www.bbc.co.uk/news/business-43901328> [Accessed: 15.05.18].

BBC News (2018b) Fake News 'Crowding Out' Real News, MPs Say [Online], Available from: <https://www.bbc.co.uk/news/technology-44995490> [Accessed: 18.10.18].

BBC News (2019a) Air Pollution 'Triggers Hundreds More Heart Attacks and Strokes' [Online], Available from: <https://www.bbc.co.uk/news/health-50119981> [Accessed: 21.10.19].

BBC News (2019b) Amazon "Flooded by Fake Five-Star Reviews" - "Which?" Report [Online], Available from: <https://www.bbc.co.uk/news/business-47941181> [Accessed: 18.04.19].

BBC News (2019c) Bottle Deposit Scheme: MSPs Suggest a "Variable Rate" [Online], Available from: <https://www.bbc.co.uk/news/uk-scotland-50718598> [Accessed: 20.11.20].

BBC News (2019d) Extinction Rebellion Protesters Dragged from Tube Train Roof [Online], Available from: <https://www.bbc.co.uk/news/uk-england-london-50079716> [Accessed: 17.10.19].

BBC News (2019e) Facebook Urged to Shut Groups Seeking Fake Amazon Reviews [Online], Available from: <https://www.bbc.co.uk/news/technology-49235986> [Accessed: 06.08.19].

BBC News (2019f) Fashion Industry 'Needs to be More Transparent' [Online], Available from: <https://www.bbc.co.uk/news/newsbeat-48037382> [Accessed: 24.04.19].

BBC News (2019g) Gender Pay Gap Grows at Hundreds of Big Firms [Online], Available from: <https://www.bbc.co.uk/news/business-47252848> [Accessed: 05.09.19].

BBC News (2019h) Greta Thunberg: 16-year-old climate activist inspired international youth movement [Online], Available from: <https://www.bbc.co.uk/newsround/47467038> [Accessed: 30.08.19].

BBC News (2019i) Greta Thunberg: Why are Young Climate Activists Facing so much Hate? [Online], Available from: <https://www.bbc.co.uk/news/world-49291464> [Accessed: 30.08.19].

BBC News (2020a) Coronavirus Confirmed as Pandemic by World Health Organization [Online], Available from: <https://www.bbc.co.uk/news/world-51839944> [Accessed: 14.05.20].

BBC News (2020b) Coronavirus: UK Brings in Strict Curbs on Life to Fight Virus [Online], Available from: <https://www.bbc.co.uk/news/uk-52014472> [Accessed: 14.05.20].

BBC News (2020c) Lego to Ditch Plastic Bags after Children Call for Change [Online], Available from: <https://www.bbc.co.uk/news/business-54169686> [Accessed: 20.11.20].

BBC News (2020d) Plastic Pollution: Crabbing Recycling Scheme Aims to Cut Waste [Online], Available from: <https://www.bbc.co.uk/news/uk-england-cornwall-54129622> [Accessed: 20.11.20].

BBC News (2020e) UK Borrowing Soars in August as COVID Costs Mount [Online], Available from: <https://www.bbc.co.uk/news/business-54289160> [Accessed: 02.12.20].

Bebbington, J. & Gray, R. (2001) An Account of Sustainability: Failure, Success and a Reconceptualization, *Critical Perspectives on Accounting*, 12, (5), 557–587.

Bebbington, J. & Larrinaga, C. (2014) Accounting and Sustainable Development: An Exploration, *Accounting, Organizations and Society*, 39, (6), 395–413.

Beinecke, R. H. (2009) Leadership for Wicked Problems, *The Innovation Journal: The Public Sector Innovation Journal*, 14, (1), 1–17.

- Benn, S., Abratt, R. & O’Leary, B. (2016) Defining and Identifying Stakeholders: Views from Management and Stakeholders, *South African Journal of Business Management*, 47, (2), 1–11.
- Bennett, N. & Lemoine, G. J. (2014) What a Difference a Word Makes: Understanding Threats to Performance in a VUCA World, *Business Horizons*, 57, (3), 311–317.
- Beresford, T. (2011) How Mechanical Turk is Gamified [Online], Available from: <http://gamificationofwork.com/2011/08/how-mechanical-turk-is-gamified/> [Accessed: 26.11.18].
- Berger, V. (2019) Social Norm-based Gamification to Promote Eco-friendly Food Choice, *Journal of Consumer Marketing*, 36, (5), 666–676.
- Bergeron, D. A. & Gaboury, I. (2020) Challenges Related to the Analytical Process in Realist Evaluation and Latest Developments on the use of NVivo from a Realist Perspective, *International Journal of Social Research Methodology*, 23, (3), 355–365.
- Betancourt, T. S., Meyers-Ohki, S. E., Stevenson, A., Ingabire, C., Kanyanganzi, F., Munyana, M., Mushashi, C., Teta, S., Fayida, I., Cyamatara, F. R., Stulac, S. & Beardslee, W. R. (2011) Using Mixed-Methods Research to Adapt and Evaluate a Family Strengthening Intervention in Rwanda, *African journal of traumatic stress*, 2, (1), 32–45.
- Blackwell, A. F., Burnett, M. M. & Jones, S. P. (2004) Champagne Prototyping: A Research Technique for Early Evaluation of Complex End-User Programming Systems, *Proceedings of the IEEE Symposium on Visual Languages and Human-Centric Computing*, 47–54.
- Blakeley, K. & Higgs, M. (2014) Responsible Leadership Development – Crucible Experiences and Power Relationships In A Global professional services firm, *Human Resource Development International*, 17, (5), 560–576.

- Blazevic, V., Wiertz, C., Cotte, J., Ruyter, K. de & Keeling, D. I. (2014) GOSIP in Cyberspace: Conceptualization and Scale Development for General Online Social Interaction Propensity, *Journal of Interactive Marketing*, 28, (2), 87–100.
- Blessing, L. & Chakrabarti, A. (2009) *DRM, a Design Research Methodology*, London, Springer.
- Bloom Built Inc. (2019) Features - Day One [Online], Available from: <https://dayoneapp.com/features/> [Accessed: 11.05.20].
- Boag, P. (2018) Prototyping: Why Bother and Where to Start? A Definitive Introduction [Online], Available from: <https://boagworld.com/usability/prototyping/> [Accessed: 17.08.18].
- Bocken, N., Allwood, J. M., Willey, A. R. & King, J. (2011) Development of an Eco-Ideation Tool to Identify Stepwise Greenhouse Gas Emissions Reduction Options for Consumer Goods, *Journal of Cleaner Production*, 19, (12), 1279–1287.
- Bogost, I. (2011) Gamification is Bullshit: My Position Statement at the Wharton Gamification Symposium [Online], Available from: [http://bogost.com/writing/blog/gamification\\_is\\_bullshit/](http://bogost.com/writing/blog/gamification_is_bullshit/) [Accessed: 11.06.19].
- Bogost, I. (2014) Why Gamification is Bullshit, In: S. P. Walz & S. Deterding (Eds.), *The Gameful World: Approaches, Issues, Applications*, 65–81, Cambridge: MIT Press.
- Boiral, O. (2013) Sustainability Reports as Simulacra? A Counter-Account of A and A+ GRI Reports, *Accounting, Auditing & Accountability Journal*, 26, (7), 1036–1071.
- Bolton, R. & Saxena-Iyer, S. (2009) Interactive Services: A Framework, Synthesis and Research Directions, *Journal of Interactive Marketing*, 23, (1), 91–104.
- Bonial International GmbH (2012) About Us - Out of Milk [Online]: Bonial International GmbH, Available from: <https://www.outofmilk.com/About.aspx> [Accessed: 05.08.20].

- Bonora, L., Martelli, F. & Marchi, V. (2019) DIGITgame: Gamification as Amazing way to Learn STEM Concepts Developing Sustainable Cities Idea in the Citizen of the Future, *Journal of Strategic Innovation and Sustainability*, 14, (4), 10–19.
- Bourdieu, P. (1991) Language and Symbolic Power, Cambridge, *Harvard University Press*.
- Bouvier, P., Lavoué, E. & Sehaba, K. (2014) Defining Engagement and Characterizing Engaged-Behaviors in Digital Gaming, *Simulation & Gaming*, 45, 4-5, 1–17.
- Bowen, H. R. (1953) Social Responsibilities of the Businessman, Iowa, *University of Iowa Press*.
- Box, D. & Croker, S. (2018) Fake Five-star Reviews Being Bought and Sold Online [Online], Available from: <http://www.bbc.co.uk/news/technology-43907695> [Accessed: 30.04.18].
- Bozkurt, A. & Durak, G. (2018) A Systematic Review of Gamification Research, *International Journal of Game-Based Learning*, 8, (3), 15–33.
- Bradford, M., Earp, J. B., Showalter, D. S. & Williams, P. F. (2017) Corporate Sustainability Reporting and Stakeholder Concerns: Is There a Disconnect?, *Accounting Horizons*, 31, (1), 83–102.
- Braun, V. & Clarke, V. (2013) Successful Qualitative Research: A Practical Guide for Beginners, London, *Sage Publications*.
- Braun, V. & Clarke, V. (2016) (Mis)conceptualising Themes, Thematic Analysis, and Other Problems with Fugard and Potts' (2015) Sample-Size Tool for Thematic Analysis, *International Journal of Social Research Methodology*, 19, (6), 739–743.
- Brewdog PLC (2020) Make Earth Great Again, Aberdeen: Brewdog PLC.
- Brockett, A. & Rezaee, Z. (2013) Corporate Sustainability: Integrating Performance and Reporting, New Jersey, *Wiley*.

- Brodie, R. J., Hollebeek, L. D., Jurić, B. & Ilić, A. (2011) Customer Engagement, *Journal of Service Research*, 14, (3), 252–271.
- Bruns, A., Highfield, T. & Burgess, J. (2013) The Arab Spring and Social Media Audiences, *American Behavioral Scientist*, 57, (7), 871–898.
- Bryman, A. (2016) *Social Research Methods* (5<sup>th</sup> Ed.), Oxford, *Oxford University Press*.
- Bryman, A. & Bell, E. (2015) *Business Research Methods* (4<sup>th</sup> Ed.), Oxford, *Oxford University Press*.
- Buhr, N. (2011) Histories of and Rationales for Sustainability Reporting, **In:** J. Unerman, J. Bebbington & B. O'Dwyer (Eds.), *Sustainability Accounting and Accountability*, 57–69, New York: Taylor & Francis.
- Buhr, N., Gray, R. H. & Milne, M. J. (2011) Histories, Rationales, Voluntary Standards and Future Prospects for Sustainability Reporting, **In:** J. Unerman, J. Bebbington & B. O'Dwyer (Eds.), *Sustainability Accounting and Accountability*, 51–71, New York: Taylor & Francis.
- Burke, B. (2014) *Gamify: How Gamification Motivates People to do Extraordinary Things*, Abingdon, *Bibliomotion*.
- Burke, J. J. & Clark, C. E. (2016) The Business Case for Integrated Reporting: Insights from Leading Practitioners, Regulators, and Academics, *Business Horizons*, 59, (3), 273–283.
- Burr, V. (2015) *Social Constructionism* (3<sup>rd</sup> Ed.), Hove, *Routledge*.
- Burritt, R. L. & Schaltegger, S. (2010) Sustainability Accounting and Reporting: Fad or Trend?, *Accounting, Auditing & Accountability Journal*, 23, (7), 829–846.
- Buycott (2015) FAQ [Online], Available from: <https://www.buycott.com/faq> [Accessed: 17.04.17].

- Capstick, S. B. & Pidgeon, N. F. (2014) What is Climate Change Scepticism? Examination of the Concept Using a Mixed Methods Study of the UK Public, *Global Environmental Change*, 24, (2014), 389–401.
- Cardador, M. T., Northcraft, G. B. & Whicker, J. (2017) A Theory of Work Gamification: Something Old, Something New, Something Borrowed, Something Cool?, *Human Resource Management Review*, 27, (2), 353–365.
- Caudill, E. M. & Murphy, P. E. (2000) Consumer Online Privacy: Legal and Ethical Issues, *Journal of Public Policy & Marketing*, 19, (1), 7–19.
- Chan, T., Zheng, X., Cheung, C., Lee, M. & Lee, Z. (2014) Antecedents and Consequences of Customer Engagement in Online Brand Communities, *Journal of Marketing Analytics*, 2, (2), 81–97.
- Chartered Association of Business Schools (2015) Ethics Guide 2015: Advice and Guidance, London: Chartered Association of Business Schools.
- Chatman, E. A. (1996) The Impoverished Life-World of Outsiders, *Journal of the American Society for Information Science and Technology*, 47, (3), 193–206.
- Cheek, J. (2000) The Marketization of Research: Implications for Qualitative Inquiry, In: N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of Qualitative Research*, (2nd Ed.), 322–340, London: Sage Publications.
- Chen, J. & Dibb, S. (2010) Consumer Trust in the Online Retail Context: Exploring the Antecedents and Consequences, *Psychology & Marketing*, 27, (4), 323–346.
- Cheng, M., Green, G., Conradie, P., Konishi, N. & Romi, A. (2014) The International Integrated Reporting Framework: Key Issues and Future Research Opportunities, *Journal of International Financial Management & Accounting*, 25, (1), 90–119.

- Cheung, C., Shen, X. L., Lee, Z. & Chan, T. (2015) Promoting Sales of Online Games Through Customer Engagement, *Electronic Commerce Research and Applications*, 14, (4), 241–250.
- Chiarini, A. & Vagnoni, E. (2017) Differences in Implementing Corporate Social Responsibility through SA8000 and ISO26000 Standards: Research from European Manufacturing, *Journal of Manufacturing Technology Management*, 28, (4), 395.
- Churet, C. & Eccles, R. G. (2014) Integrated Reporting, Quality of Management, and Financial Performance, *Journal of Applied Corporate Finance*, 26, (1), 56–64.
- Clancy, H. (2014) Looks Like That Whole 'Gamification' Thing is Over [Online], Available from: <http://fortune.com/2014/06/06/looks-like-that-whole-gamification-thing-is-over/> [Accessed: 17.06.19].
- Clay, R. A. (2020) Conducting Research During the COVID-19 Pandemic: Advice from Psychological Researchers on Protecting Participants, Animals and Research Plans [Online], Available from: <https://www.apa.org/news/apa/2020/03/conducting-research-covid-19> [Accessed: 14.05.20].
- CoGo (2018) About us — CoGo - ethical living made easy [Online]: CoGo, Available from: <https://cogo.co/uk/about-us> [Accessed: 03.08.20].
- CoGo Connecting Good (2018) How CoGo Works [Online], Available from: <https://cogo.co/uk/how-it-works> [Accessed: 24.04.19].
- Colman, A. M., Norris, C. E. & Preston, C. C. (1997) Comparing Rating Scales of Different Lengths: Equivalence of Scores from 5-Point and 7-Point Scales, *Psychological Reports*, 80, (1), 355–362.
- Coombes, E. & Jones, A. (2016) Gamification of Active Travel to School: A Pilot Evaluation of the Beat the Street Physical Activity Intervention, *Health & place*, 39, (2016), 62–69.



- Coombs, W. T. & Holladay, S. J. (2015) Two-Minute Drill: Video Games and Social Media to Advance CSR, **In:** A. Adi, G. Grigore & D. Crowther (Eds.), *Corporate Social Responsibility in the Digital Age*, 127–142, Bingley: Emerald Group Publishing.
- Cragg, W. & Greenbaum, A. (2002) Reasoning about Responsibilities: Mining Company Managers on What Stakeholders are Owed, *Journal of Business Ethics*, 39, (3), 319–335.
- Crane, A., Palazzo, G., Spence, L. J. & Matten, D. (2014) Contesting the Value of “Creating Shared Value”, *California Management Review*, 56, (2), 130-153.
- Creswell, J. W. & Creswell, J. D. (2018) Research Design: Qualitative, Quantitative, and Mixed Methods Approaches (5<sup>th</sup> Ed.), London, *Sage Publications; SAGE*.
- Creswell, J. W. & Plano Clark, V. L. (2011) Designing and Conducting Mixed Methods Research (2<sup>nd</sup> Ed.), London, *Sage Publications*.
- Dal Sasso, T., Mocci, A., Lanza, M. & Mastrodicasa, E. (2017) How to Gamify Software Engineering, *Proceedings of the 24th IEEE International Conference on Software Analysis, Evolution, and Reengineering*, 261–271.
- Danckwerts, S., Meißner, L. & Krampe, C. (2019) Examining User Experience of Conversational Agents in Hedonic Digital Services - Antecedents and the Role of Psychological Ownership, *Journal of Service Management Research*, 3, (3), 111–125.
- Datta, H., Foubert, B. & van Heerde, H. J. (2015) The Challenge of Retaining Customers Acquired with Free Trials, *Journal of Marketing Research*, 52, (2), 217–234.
- Daub, C. H. & Karlsson, Y. (2006) Corporate Sustainability Reporting: Evidence from the First Swiss Benchmark Survey, **In:** S. Schaltegger, M. Bennett & R. Burritt (Eds.), *Sustainability Accounting and Reporting*, 557–580, Dordrecht: Springer.

- Davis, F. D., Bagozzi, R. P. & Warshaw, P. R. (1989) User Acceptance of Computer Technology: A Comparison of Two Theoretical Models, *Management Science*, 35, (8), 982–1003.
- Deakin, H. & Wakefield, K. (2014) Skype Interviewing: Reflections of Two PhD Researchers, *Qualitative Research*, 14, (5), 603–616.
- Deci, E. L. & Ryan, R. M. (1985) Intrinsic Motivation and Self-Determination in Human Behaviour, New York, *Plenum*.
- Deci, E. L. & Ryan, R. M. (2000) The "What" and "Why" of Goal Pursuits: Human Needs and the Self-Determination of Behavior, *Psychological Inquiry*, 11, (4), 227–268.
- Deng, X., Joshi, K. D. & Galliers, R. D. (2016) The Duality Of Empowerment and Marginalization in Microtask Crowdsourcing: Giving Voice to the Less Powerful Through Value Sensitive Design, *MIS Quarterly*, 40, (2), 279-A19.
- Denzin, N. K. & Lincoln, Y. S. (2013) The Discipline and Practice of Qualitative Research, **In:** N. K. Denzin & Y. S. Lincoln (Eds.), *The Landscape of Qualitative Research*, (4th Ed.), 1–43, London: Sage Publications.
- Dessart, L. (2017) Social Media Engagement: A model of Antecedents and Relational Outcomes, *Journal of Marketing Management*, 54, (2), 375–399.
- Deterding, S. (2019) Gamification in Management: Between Choice Architecture and Humanistic Design, *Journal of Management Inquiry*, 28, (2), 131–136.
- Deterding, S., Dixon, D., Khaled, R. & Nacke, L. (2011) From Game Design Elements to Gamefulness: Defining Gamification, *Proceedings of the 15th International Academic MindTrek Conference*, 9–15.
- Devinney, T. M., Auger, P. & Eckhardt, G. M. (2010) The Myth of the Ethical Consumer, Cambridge, *Cambridge University Press*.

- Dewey, J. (1995) Does Reality Possess Practical Character, **In:** R. B. Goodman (Ed.), *Pragmatism: A Contemporary Reader*, 79–93, London: Routledge.
- Dhaliwal, D. S., Radhakrishnan, S., Tsang, A. & Yang, Y. G. (2012) Nonfinancial Disclosure and Analyst Forecast Accuracy: International Evidence on Corporate Social Responsibility Disclosure, *The Accounting Review*, 87, (3), 723–759.
- Dixon, H. (2020) Community spirit makes comeback amid anxieties of coronavirus lockdown Britain, survey shows [Online]: Daily Telegraph, Available from: <https://www.telegraph.co.uk/news/2020/04/16/community-spirit-makes-comeback-amid-anxieties-lockdown-britain/> [Accessed: 04.08.20].
- Donaldson, T. & Dunfee, T. W. (1995) Integrative Social Contracts Theory, *Economics and Philosophy*, 11, (01), 85.
- Donaldson, T. & Dunfee, T. W. (1999) Ties That Bind: A Social Contracts Approach to Business Ethics, Boston, *Harvard Business Review Press*.
- Donaldson, T. & Preston, L. E. (1995) The Stakeholder Theory of the Corporation: Concepts, Evidence and Implications, *Academy of Management Review*, 20, (1), 65–91.
- Douglas, M. (2000) Integrative Social Contracts Theory: Hype over Hypernorms, *Journal of Business Ethics*, 26, (2), 101–110.
- Drimlike Ltd (2015) Gamify your Marketing Strategy! [Online], Available from: <https://www.drimlike.com/en/gamification/> [Accessed: 06.06.19].
- Dunfee, T. W. (2006) A Critical Perspective of Integrative Social Contracts Theory: Recurring Criticisms and Next Generation Research Topics, *Journal of Business Ethics*, 68, (3), 303–328.
- Easton, M. (2020) Coronavirus: Social Media "Spreading Virus Conspiracy Theories" [Online], Available from: <https://www.bbc.co.uk/news/uk-53085640> [Accessed: 17.12.20].

- Eccles, R. G., Ioannou, I. & Serafeim, G. (2014) The Impact of Corporate Sustainability on Organizational Processes and Performance, *Management Science*, 60, (11), 2835–2857.
- Eccles, R. G., Krzus, M. P., Rogers, J. & Serafeim, G. (2012) The Need for Sector-Specific Materiality and Sustainability Reporting Standards, *Journal of Applied Corporate Finance*, 24, (2), 65–71.
- Eccles, R. G., Krzus, M. P. & Watson, L. A. (2012) Integrated Reporting Requires Integrated Assurance, In: J. Oringel (Ed.), *Effective Auditing for Corporates: Key Developments in Practice and Procedures*, 161–178, London: Bloomsbury Publishing.
- Egan, M. (2019) Sense-Making Resource Efficiency Through “Sustainability” Reports, *Journal of Business Ethics*, 154, (3), 797–812.
- Electronic Arts Inc. (2017) The Sims: Freeplay [Online], Available from: <https://www.ea.com/en-gb/games/the-sims/the-sims-freeplay> [Accessed: 14.12.20].
- Elkington, J. B. (1999) *Cannibals with Forks: Triple Bottom Line of 21st Century Business*, Oxford, Capstone.
- ESRC (2015) *ESRC Framework for Research Ethics*, Swindon: The Economic and Social Research Council.
- ESRC (2016) *Our Core Principles* [Online]: The Economic and Social Research Council, Available from: <https://esrc.ukri.org/funding/guidance-for-applicants/research-ethics/our-core-principles/> [Accessed: 05.05.20].
- Extinction Rebellion (2018) *About Us / Our Story* [Online], Available from: <https://rebellion.earth/the-truth/about-us/> [Accessed: 19.06.19].
- Fakis, A., Hilliam, R., Stoneley, H. & Townend, M. (2014) Quantitative Analysis of Qualitative Information from Interviews: A Systematic Literature Review, *Journal of Mixed Methods Research*, 8, (2), 139–161.

- Fang, J., Zhao, Z., Wen, C. & Wang, R. (2017) Design and Performance Attributes Driving Mobile Travel Application Engagement, *International Journal of Information Management*, 37, (4), 269–283.
- Fang, Y. H. (2017) Exploring Task-Service Fit and Usefulness on Branded Applications Continuance, *Journal of Services Marketing*, 31, (6), 574–588.
- Feilzer, M. Y. (2010) Doing Mixed Methods Research Pragmatically: Implications for the Rediscovery of Pragmatism as a Research Paradigm, *Journal of Mixed Methods Research*, 4, (1), 6–16.
- Fernback, J. (2007) Beyond the Diluted Community Concept: A Symbolic Interactionist Perspective on Online Social Relations, *New Media & Society*, 9, (1), 49–69.
- Fink, L. (2020) A Fundamental Reshaping of Finance [Online], Available from: <https://www.blackrock.com/corporate/investor-relations/larry-fink-ceo-letter> [Accessed: 12.03.20].
- Finstad, K. A. (2010) Response Interpolation and Scale Sensitivity: Evidence Against 5-Point Scales, *Journal of Usability Studies*, 5, (3), 104–110.
- Fitbit Inc. (2016) Fitbit Official Site for Activity Trackers & More [Online], Available from: <https://www.fitbit.com/uk> [Accessed: 05.11.17].
- Flower, J. (2015) The International Integrated Reporting Council: A Story of Failure, *Critical Perspectives on Accounting*, 27, (2015), 1–17.
- Foddy, W. H. (1993) Constructing Questions for Interviews and Questionnaires: Theory and Practice in Social Research, Cambridge, *Cambridge University Press*.
- Fonseca, A., Macdonald, A., Dandy, E. & Valenti, P. (2011) The State of Sustainability Reporting at Canadian Universities, *International Journal of Sustainability in Higher Education*, 12, (1), 22–40.

- Fonseca, A., McAllister, M. L. & Fitzpatrick, P. (2014) Sustainability Reporting Among Mining Corporations: A Constructive Critique of the GRI Approach, *Journal of Cleaner Production*, 84, (1), 70–83.
- Foxman, E. R. & Kilcoyne, P. (1993) Information Technology, Marketing Practice, and Consumer Privacy: Ethical Issues, *Journal of Public Policy & Marketing*, 12, (1), 106–119.
- Freeman, R. E. (2010) *Strategic Management: A Stakeholder Approach*, Cambridge, Cambridge University Press.
- Freeman, R. E., Harrison, J. S., Wicks, A. C., Parmar, B. L. & Colle, S. d. (2010) *Stakeholder Theory: The State of the Art*, Cambridge, Cambridge University Press.
- French, J. & Raven, B. (1958) Legitimate Power, Coercive Power and Observability in Social Influence, *Sociometry*, 21, (2), 83–97.
- Friedman, M. (1970) The Social Responsibility of Business is to Increase Its Profits, *New York Times Magazine*, 122–124.
- Froehlich, J. E. (2014) Gamifying Green: Gamification and Environmental Sustainability, In: S. P. Walz & S. Deterding (Eds.), *The Gameful World: Approaches, Issues, Applications*, 563–596, Cambridge: MIT Press.
- García, F., Pedreira, O., Piattini, M., Cerdeira-Pena, A. & Penabad, M. (2017) A Framework for Gamification in Software Engineering, *Journal of Systems and Software*, 132, (1), 21–40.
- Giddens, A. (1984) *The Constitution of Society*, Los Angeles, University of California Press.
- Giki Social Enterprise Ltd. (2020) Giki - Making it Easy to Live Sustainably [Online], Available from: <https://giki.earth/> [Accessed: 05.08.20].

- Giladi, P. (2015) A Critique of Rorty's Conception of Pragmatism, *European Journal of Pragmatism and American Philosophy*, VII, (2), 1–16.
- Gillham, B. (2008) *Developing a Questionnaire* (2<sup>nd</sup> Ed.), London, *Continuum*.
- Global Reporting Initiative (2013) *GRI-Assurance: The External Assurance of Sustainability Reporting*, Amsterdam,
- Global Reporting Initiative (2018) *GRI Standards Glossary*, Amsterdam,
- Glogowska, M. (2011) Paradigms, Pragmatism and Possibilities: Mixed-Methods Research in Speech and Language Therapy, *International journal of language & communication disorders*, 46, (3), 251–260.
- GoodGuide (2020) GoodGuide is Taking a Break [Online], Available from: <https://goodguide.com/> [Accessed: 01.10.20].
- Goodman, M., Carlson, D., Kyles, L. & Goodman, N. (2015) What Gamification Tells us about Web Communication, *Media Watch*, 6, (2), 200.
- Goodman, R. B. (1995) *Pragmatism: A Contemporary Reader*, London, *Routledge*.
- Goudarzi, S. (2020) Lessons from Past Outbreaks Could Help Fight the Coronavirus Pandemic [Online], Available from: <https://www.scientificamerican.com/article/lessons-from-past-outbreaks-could-help-fight-the-coronavirus-pandemic1/> [Accessed: 14/05/202].
- Gray, D., Brown, S. & Macanuso, J. (2010) *Gamestorming: A Playbook for Innovators, Rulebreakers, and Changemakers*, Cambridge, *O'Reilly*.
- Gray, R. H. (1994) Corporate Reporting for Sustainable Development: Accounting for Sustainability in 2000 AD, *Environmental Values*, 3, (1), 17–45.

- Gray, R. H. (2006) Social, Environmental and Sustainability Reporting and Organisational Value Creation?, *Accounting, Auditing & Accountability Journal*, 19, (6), 793–819.
- Gray, R. H. (2010) Is Accounting for Sustainability Actually Accounting for Sustainability...and How Would we Know?: An Exploration of Narratives of Organisations and the Planet, *Accounting, Organizations and Society*, 35, (1), 47–62.
- Gray, R. H. & Bebbington, J. (2001) *Accounting for the environment* (2<sup>nd</sup> Ed.), London, *Sage Publications*.
- Gray, R. H., Dey, C., Owen, D., Evans, E. & Zadek, S. (1997) Struggling with the Praxis of Social Accounting: Stakeholders, Accountability, Audits and Procedures, *Accounting, Auditing and Accountability Journal*, 10, (3), 325–364.
- Gray, R. H. & Milner, M. (2004) Towards Reporting on the Triple Bottom Line: Mirage, Methods and Myths, In: A. Henriques & J. Richardson (Eds.), *The Triple Bottom Line, Does it all Add Up? Assessing the Sustainability of Business and CSR*, 70–80, London: Earthscan.
- Greco, G., Sciulli, N. & D'Onza, G. (2015) The Influence of Stakeholder Engagement on Sustainability Reporting: Evidence from Italian Local Councils, *Public Management Review*, 17, (4), 465–488.
- Growth Engineering (2016a) Countdown to Gamification (History of Gamification Part 1) [Online], Available from: <https://www.growthengineering.co.uk/countdown-to-gamification-history-of-gamification-pt-1/> [Accessed: 16.05.19].
- Growth Engineering (2016b) The Gamification Explosion (History of Gamification Part 3) [Online], Available from: <https://www.growthengineering.co.uk/the-gamification-explosion-history-of-gamification-pt-3/> [Accessed: 04.06.19].
- Grushina, S. V. (2017) Collaboration by Design: Stakeholder Engagement in GRI Sustainability Reporting Guidelines, *Organization & Environment*, 30, (4), 366–385.



- Guba, E. G. (1990) The Alternative Paradigm Dialog, **In:** E. G. Guba (Ed.), *The Paradigm Dialog*, 17–30, London: Sage Publications.
- Guthrie, L. (2016) Mapping the Sustainability Landscape: Lost in the Right Direction, London: The Association of Chartered Certified Accountants.
- Habermas, J. (1987) Knowledge and human interests, Cambridge, *Polity Press*.
- Halpern, D. (2015) Inside the Nudge Unit: How Small Changes Can Make a Big Difference, London, *Penguin Random House*.
- Hamari, J. & Koivisto, J. (2015) Why Do People use Gamification Services?, *International Journal of Information Management*, 35, (4), 419–431.
- Hamari, J., Koivisto, J. & Sarsa, H. (2014) Does Gamification Work? A Literature Review of Empirical Studies on Gamification, *2014 47th Hawaii International Conference on System Science*, 3025–3034.
- Hambling, B. & van Goethem, P. (2013) User Acceptance Testing: A Step-by-Step Guide, London, *BCS Learning and Development*.
- Hammedi, W., Leclercq, T. & van Riel, A. (2017) The Use of Gamification Mechanics to Increase Employee and User Engagement in Participative Healthcare Services, *Journal of Service Management*, 28, (4), 640–661.
- Harcourt, W. (2014) The Future of Capitalism: A Consideration of Alternatives, *Cambridge Journal of Economics*, 38, (6), 1307–1328.
- Harmeling, C. M., Moffett, J., Arnold, M. J. & Carlson, B. D. (2017) Toward a Theory of Customer Engagement Marketing, *Journal of the Academy of Marketing Science*, 45, (3), 312–335.

- Hayamizu, T. (1997) Between Intrinsic and Extrinsic Motivation: Examinations of Reasons for Academic Study Based on the Theory of Internalization, *Japanese Psychological Research*, 39, (2), 98–108.
- Hays, D. G., Wood, C., Dahl, H. & Kirk-Jenkins, A. (2016) Methodological Rigor in Journal of Counseling & Development Qualitative Research Articles: A 15-Year Review, *Journal of Counseling & Development*, 94, (2), 172–183.
- Hazzi, O. & Maldaon, I. (2015) A Pilot Study: Vital Methodological Issues, *Business: Theory and Practice*, 16, (1), 53–62.
- Herremans, I. M. & Nazari, J. A. (2016) Sustainability Reporting Driving Forces and Management Control Systems, *Journal of Management Accounting Research*, 28, (2), 103–124.
- Herremans, I. M., Nazari, J. A. & Mahmoudian, F. (2016) Stakeholder Relationships, Engagement, and Sustainability Reporting, *Journal of Business Ethics*, 138, (3), 417–435.
- Herzig, C. & Schaltegger, S. (2006) Corporate Sustainability Reporting. An Overview, In: S. Schaltegger, M. Bennett & R. Burritt (Eds.), *Sustainability Accounting and Reporting*, 301–324, Dordrecht: Springer.
- Hill, C. & Jones, T. M. (1992) Stakeholder-Agency Theory, *Journal of Management Studies*, 29, (2), 131–154.
- Hoffmann, C. P. & Lutz, c. (2015) The Impact of Online Media on Stakeholder Engagement and the Governance of Corporations, *Journal of Public Affairs*, 15, (2), 163–174.
- Hollebeek, L., Glynn, M. S. & Brodie, R. J. (2014) Consumer Brand Engagement in Social Media, *Journal of Interactive Marketing*, 28, (2), 149–165.

- Horisch, J., Freeman, R. E. & Schaltegger, S. (2014) Applying Stakeholder Theory in Sustainability Management: Links, Similarities, Dissimilarities, and a Conceptual Framework, *Organization & Environment*, 27, (4), 328–346.
- Howe, J. (2008) Crowdsourcing: Why the Power of the Crowd is Driving the Future of Business, New York, *Crown Business*.
- Hubbard, G. (2009) Measuring Organizational Performance: Beyond the Triple Bottom Line, *Business Strategy and the Environment*, 18, (3), 177–191.
- Hung, A. (2017) A Critique and Defense of Gamification, *Journal of Interactive Online Learning*, 15, (1), 57-72.
- Huotari, K. & Hamari, J. (2012) Defining Gamification - A Service Marketing Perspective, *Proceedings of the 16th International Academic MindTrek Conference*, 17-22.
- Huotari, K. & Hamari, J. (2017) A Definition for Gamification: Anchoring Gamification in the Service Marketing Literature, *Electronic Markets*, 27, (1), 21–31.
- I.C.O (2018a) Guide to the General Data Protection Regulation (GDPR), London: The Information Commissioners.
- I.C.O (2018b) Principle (b): Purpose Limitation [Online], Available from: <https://ico.org.uk/for-organisations/guide-to-data-protection/guide-to-the-general-data-protection-regulation-gdpr/principles/purpose-limitation/> [Accessed: 01.12.20].
- IIRC (2015) The IIRC [Online], Available from: <https://integratedreporting.org/the-iirc-2/> [Accessed: 16.07.19].
- Intelligent Health Ltd. (2016) Best Foot Forward for Reading as Beat the Street Returns! [Online], Available from: <http://www.intelligenthealth.co.uk/best-foot-forward-for-reading-as-beat-the-street-returns/> [Accessed: 31.05.19].

- International Auditing and Assurance Standards Board (2013) International Standard on Assurance Engagements: ISAE 3000 (Revised), Assurance Engagements Other than Audits or Reviews of Historical Financial Information, New York,
- International Organization for Standardization (2013) ISO/IEC 27001 Information Security Management [Online], Available from: <https://www.iso.org/isoiec-27001-information-security.html> [Accessed: 02.12.20].
- International Organization for Standardization (2018) ISO 14000 [Online], Available from: <https://www.iso.org/iso-14001-environmental-management.html> [Accessed: 09.12.18].
- Internet Society (2016) Internet Society Global Internet Report 2016, Geneva: Internet Society.
- Internet Society (2017) Internet Society Global Internet Report 2017, Geneva: Internet Society.
- InVisionApp Inc. (2003) About | InVision App [Online], Available from: <https://www.invisionapp.com/about> [Accessed: 03.01.20].
- InVisionApp Inc. (2018) InVision | Product Tour [Online], Available from: <https://www.invisionapp.com/> [Accessed: 03.01.20].
- Ionescu, A. (2015) Standard Interfaces for Open Source Infrastructure as a Service Platforms, *Informatica Economica*, 19, 4/2015, 68–80.
- ISTQB (18/11/2019) Standard Glossary of Terms used in Software Testing: Version 3.3, Brussels, International Software Testing Qualifications Board.
- Jaakkola, E. & Alexander, M. (2014) The Role of Customer Engagement Behavior in Value Co-Creation, *Journal of Service Research*, 17, (3), 247–261.

- Jack, S. (2019) UK "Has Particularly Extreme Form of Capitalism" [Online], Available from: <https://www.bbc.co.uk/news/business-50562518> [Accessed: 27.11.19].
- Jackson, R. A. (2018) Into the Light, *Internal Auditor*, 75, (3), 20–27.
- Jacoby, J. & Matell, M. S. (1971) Three-Point Likert Scales Are Good Enough, *Journal of Marketing Research*, 8, (4), 495.
- Jahn, J. & Brühl, R. (2018) How Friedman's View on Individual Freedom Relates to Stakeholder Theory and Social Contract Theory, *Journal of Business Ethics*, 153, (1), 41–52.
- James, W. (1907) Pragmatism (3<sup>rd</sup> Ed.), New York, *Dover Publications Inc.*
- Jenner, B. M. & Myers, K. C. (2019) Intimacy, Rapport, and Exceptional Disclosure: A Comparison of In-Person and Mediated Interview Contexts, *International Journal of Social Research Methodology*, 22, (2), 165–177.
- Joas, H. (1993) Pragmatism and Social Theory, London, *University of Chicago Press*.
- Johnson, R. B. & Onwuegbuzie, A. J. (2004) Mixed Methods Research: A Research Paradigm Whose Time Has Come, *Educational Researcher*, 33, (7), 14–26.
- Karabag, S. F. (2020) An Unprecedented Global Crisis! The Global, Regional, National, Political, Economic and Commercial Impact of the Coronavirus Pandemic, *Journal of Applied Economics and Business Research*, 10, (1), 1–6.
- Kasriel, E. (2020) Coronavirus Lockdown: Can Nature Help Improve our Mood? [Online], Available from: <https://www.bbc.co.uk/news/health-52479763> [Accessed: 09.12.20].
- Kaur, A. & Lodhia, S. (2018) Stakeholder Engagement in Sustainability Accounting and Reporting, *Accounting, Auditing & Accountability Journal*, 31, (1), 338–368.

- Kaur, A. & Lodhia, S. K. (2019) Key Issues and Challenges in Stakeholder Engagement in Sustainability Reporting, *Pacific Accounting Review*, 31, (1), 2–18.
- Keeble, J. J., Topiol, S. & Berkeley, S. (2003) Using Indicators to Measure Sustainability Performance at a Corporate and Project Level, *Journal of Business Ethics*, 44, (2), 149–158.
- Kelion, L. (2020) Why Amazon Knows So Much About You [Online], Available from: <https://www.bbc.co.uk/news/extra/CLQYZENMBI/amazon-data> [Accessed: 10.05.20].
- Key, S. (1999) Toward a New Theory of the Firm: A Critique of Stakeholder “Theory”, *Management Decision*, 37, (4), 317–328.
- Khan, M., Serafeim, G. & Yoon, A. (2016) Corporate Sustainability: First Evidence on Materiality, *The Accounting Review*, 91, (6), 1697–1724.
- Kim, T. W. (2018) Gamification of Labor and the Charge of Exploitation, *Journal of Business Ethics*, 152, (1), 27–39.
- Klabbers, J. (2018) On the Architecture of Game Science: A Rebuttal, *Simulation & Gaming*, 49, (3), 356–372.
- Knowles, R. (2020) 4 Considerations on How to Conduct Research During a Pandemic [Online], Available from: <https://alphahq.com/blog/4-considerations-on-how-to-conduct-research-during-a-pandemic/> [Accessed: 14.05.20].
- Kostoulas, A. (2013) On Likert scales, Ordinal Data and Mean Values [Online], Available from: <https://achilleaskostoulas.com/2013/02/13/on-likert-scales-ordinal-data-and-mean-values/> [Accessed: 16.10.20].
- Kostoulas, A. (2014) How to Interpret Ordinal Data [Online], Available from: <https://achilleaskostoulas.com/2014/02/23/how-to-interpret-ordinal-data/> [Accessed: 16.10.20].

- Kozinets, R. V. (2015) *Netnography: Redefined (2<sup>nd</sup> Ed.)*, London, *Sage Publications*.
- Kuhn, T. S. (1970) *The Structure of Scientific Revolutions (2<sup>nd</sup> Ed.)*, Chicago, *University of Chicago Press*.
- Kuhn, T. S. (2012) *The Structure of Scientific Revolutions (4<sup>th</sup> Ed.)*, Chicago, *The University of Chicago Press*.
- Kumar, V., Aksoy, L., Donkers, B., Venkatesan, R., Wiesel, T. & Tillmanns, S. (2010) Undervalued or Overvalued Customers: Capturing Total Customer Engagement Value, *Journal of Service Research*, 13, (3), 297–310.
- Kurtz, L. (2008) Socially Responsible Investment and Shareholder Activism, **In:** A. Crane, A. McWilliams, D. Matten, J. Moon & D. Siegel (Eds.), *The Oxford Handbook of Corporate Social Responsibility*, 249–276, Oxford: Oxford University Press.
- Kuznets, S. (1934) National Income, 1929-1932: 73rd Congress, 2nd Session, Document No. 124, New York: The National Bureau of Economic Research.
- Kwok, L. (2013) Exploratory-Triangulation Design in Mixed Methods Studies: A Case of Examining Graduating Seniors Who Meet Hospitality Recruiters' Selection Criteria, *Tourism and Hospitality Research*, 12, (3), 125–138.
- Kwon, K. H., Halavais, A. & Havener, S. (2015) Tweeting Badges: User Motivations for Displaying Achievement in Publicly Networked Environments, *Cyberpsychology, behavior and social networking*, 18, (2), 93–100.
- Laaksonen, S. M., Falco, A., Salminen, M., Aula, P. & Ravaja, N. (2019) Brand as a Cognitive Mediator: Investigating the Effect of Media Brands as a Structural Feature of Textual News Messages, *Journal of Product & Brand Management*, 28, (1), 1–14.
- Lamberton, G. (2005) Sustainability Accounting - A Brief History and Conceptual Framework, *Accounting Forum*, 29, (1), 7–26.

- Lancaster, G. A., Dodd, S. & Williamson, P. R. (2002) Design and Analysis of Pilot Studies: Recommendations for Good Practice, *Journal of Evaluation in Clinical Practice*, 10, (2), 307–312.
- Landers, R. N. (2019) Gamification Misunderstood: How Badly Executed and Rhetorical Gamification Obscures Its Transformative Potential, *Journal of Management Inquiry*, 28, (2), 137–140.
- Landers, R. N., Auer, E. M., Collmus, A. B. & Armstrong, M. B. (2018) Gamification Science, Its History and Future: Definitions and a Research Agenda, *Simulation & Gaming*, 49, (3), 315–337.
- Langone, A. (2018) #MeToo and Time's Up Founders Explain the Difference Between the 2 Movements — And How They're Alike [Online], Available from: <http://time.com/5189945/whats-the-difference-between-the-metoo-and-times-up-movements/> [Accessed: 28.09.18].
- Laplume, A. O., Sonpar, K. & Litz, R. A. (2008) Stakeholder Theory: Reviewing a Theory That Moves Us, *Journal of Management*, 34, (6), 1152–1189.
- Laufer, W. S. (2003) Social Accountability and Corporate Greenwashing, *Journal of Business Ethics*, 43, (3), 253–261.
- Lawrie, E. (2020) Coronavirus: How Does Contact Tracing Work and is my Data Safe? [Online], Available from: <https://www.bbc.co.uk/news/explainers-52442754> [Accessed: 10.05.20].
- Leclercq, T., Hammedi, W. & Poncin, I. (2018) The Boundaries of Gamification for Engaging Customers: Effects of Losing a Contest in Online Co-creation Communities, *Journal of Interactive Marketing*, 44, (2018), 82–101.
- Lee, C. T. & Hsieh, S. H. (2021) Can Social Media-based Brand Communities Build Brand Relationships? Examining the Effect of Community Engagement on Brand Love, *Behaviour & Information Technology*, January, (1), 1–16.



- Leggett, T. (2014) Can Giving Away Trade Secrets Benefit Business? [Online], Available from: <https://www.bbc.co.uk/news/business-27792595> [Accessed: 03.12.20].
- Lehman, G. (1999) Disclosing New Worlds: A Role for Social and Environmental Accounting and Auditing, *Accounting, Organizations and Society*, 24, (3), 217–241.
- Leon, A. C., Davis, L. L. & Kraemer, H. C. (2011) The Role and Interpretation of Pilot Studies in Clinical Research, *Journal*, 45, (5), 626–629.
- Lin, J. S., Lee, Y. I., Jin, Y. & Gilbreath, B. (2017) Personality Traits, Motivations, and Emotional Consequences of Social Media Usage, *Cyberpsychology, behavior and social networking*, 20, (10), 615–623.
- Linder, T. (2019) Surveillance Capitalism and Platform Policing: The Surveillant Assemblage-as-a-Service, *Surveillance and Society*, 17, 1/2, 76-82.
- Linehan, C., Kirman, B. & Roche, B. (2014) Gamification as Behavioral Psychology, In: S. P. Walz & S. Deterding (Eds.), *The Gameful World: Approaches, Issues, Applications*, 81–106, Cambridge: MIT Press.
- Lissitz, R. W. & Green, S. (1975) Effect of the Number of Scale Points on Reliability: A Monte Carlo Approach, *Journal of Applied Psychology*, 60, (1), 10–13.
- Liu, D., Santhanam, R. & Webster, J. (2017) Toward Meaningful Engagement: A Framework for Design and Research of Gamified Information Systems, *MIS Quarterly*, 41, (4), 1011-1034-A4.
- Lock, I. & Seele, P. (2015) Analyzing Sector-Specific CSR Reporting: Social and Environmental Disclosure to Investors in the Chemicals and Banking and Insurance Industry, *Corporate Social Responsibility and Environmental Management*, 22, (2), 113–128.
- Lomborg, S. (2017) A State of Flux: Histories of Social Media Research, *European Journal of Communication*, 32, (1), 6–15.

- Lopes, A. I. & Coelho, A. M. (2018) Engaged in Integrated Reporting? Evidence Across Multiple Organizations, *European Business Review*, 30, (4), 398–426.
- Lowry, P. B., Gaskin, J. E., Twyman, N. W., Hammer, B. & Roberts, T. (2013) Taking “Fun and Games” Seriously: Proposing the Hedonic-Motivation System Adoption Model (HMSAM), *Journal of the Association for Information Systems*, 14, (11), 617–671.
- Lozano, R. & Huisingh, D. (2011) Inter-linking Issues and Dimensions in Sustainability Reporting, *Journal of Cleaner Production*, 19, 2-3, 99–107.
- Lueg, K., Lueg, R., Andersen, K. & Dancianu, V. (2016) Integrated Reporting with CSR Practices: A Pragmatic Constructivist Case Study in a Danish Cultural Setting, *Corporate Communications: An International Journal*, 21, (1), 20–35.
- Lynch, M. (2000) Against Reflexivity as an Academic Virtue and Source of Privileged Knowledge, *Theory, Culture and Society*, 17, (3), 26–54.
- Lyu, J. & Kim, J. B. (2020) Antecedents of Social Media–Induced Retail Commerce Activities: Impact of Brand–Consumer Relationships and Psychological Sense of Community, *Journal of Interactive Advertising*, 20, (2), 119–132.
- Maas, K., Schaltegger, S. & Crutzen, N. (2016) Integrating Corporate Sustainability Assessment, Management Accounting, Control, and Reporting, *Journal of Cleaner Production*, 136, A, 237–248.
- Mackey, J. & Sisodia, R. (2013) *Conscious Capitalism*, Boston, *Harvard Business Review Press*.
- Mackinac Center for Public Policy (2019) The Overton Window [Online], Available from: <https://www.mackinac.org/OvertonWindow> [Accessed: 27.07.20].
- Mackinnon, A. & Powell, B. (2014) Paradigms and Worldviews, In: A. Mackinnon & B. Powell (Eds.), *China Calling: A Foot in the Global Door*, 23–25, Basingstoke: Palgrave Macmillan.

- Macklin, R. & Cowan, E. (2009) Conducting Research in Disease Outbreaks, *PLoS Neglected tropical Diseases*, 3, (4), 1–3.
- Maeda, H. (2015) Response Option Configuration of Online Administered Likert scales, *International Journal of Social Research Methodology*, 18, (1), 15–26.
- Maingi, S. (2020) *Travel and Tourism under Pandemic Conditions – Second Review and Preparation Exercise*, Oxford: CABI Publishing.
- Mak, L. & Marshall, S. K. (2004) Perceived Mattering in Young Adults’ Romantic Relationships, *Journal of Social and Personal Relationships*, 21, (4), 469–486.
- Malhotra, N. K., Birks, D. F. & Wills, P. (2012) *Marketing Research: An Applied Approach* (4<sup>th</sup> Ed.), Harlow, *Pearson Education*.
- Malone, T. W. (1981) Toward a Theory of Intrinsically Motivating Instruction, *Cognitive Science*, 5, (4), 333–370.
- Manetti, G. (2011) The Quality of Stakeholder Engagement in Sustainability Reporting: Empirical Evidence and Critical Points, *Corporate Social Responsibility and Environmental Management*, 18, (2), 110–122.
- Manetti, G. & Bellucci, M. (2016) The Use of Social Media for Engaging Stakeholders in Sustainability Reporting, *Accounting, Auditing & Accountability Journal*, 29, (6), 985–1011.
- Manetti, G. & Toccafondi, S. (2012) The Role of Stakeholders in Sustainability Reporting Assurance, *Journal of Business Ethics*, 107, (3), 363–377.
- Mansell, S. F. (2013) *Capitalism, Corporations and the Social Contract: A Critique of Stakeholder Theory*, Cambridge, *Cambridge University Press*.
- Maqbool, A. (2020) Black Lives Matter: From Social Media Post to Global Movement [Online], Available from: <https://www.bbc.co.uk/news/world-us-canada->

53273381?intlink\_from\_url=https://www.bbc.co.uk/news/topics/c48yrnxgd7rt/black-lives-matter&link\_location=live-reporting-story [Accessed: 26.07.20].

Marbach, J., Lages, C. R. & Nunan, D. (2016) Who Are You and What Do You Value? Investigating the Role of Personality Traits and Customer-Perceived Value in Online Customer Engagement, *Journal of Marketing Management*, 32, 5-6, 502–525.

Margolis, J. D. & Walsh, J. P. (2001) People and Profits?: The Search for a Link between a Company's Social and Financial Performance, London, *Taylor & Francis Group*.

Mathur, V. N., Price, A. & Austin, S. (2008) Conceptualizing Stakeholder Engagement in the Context of Sustainability and its Assessment, *Construction Management and Economics*, 26, (6), 601–609.

Maxcy, S. J. (2003) Pragmatic Threads in Mixed Methods Research in the Social Sciences: The Search for Multiple Modes of Inquiry and the End of the Philosophy of Formalism, In: A. Tashakkori & C. Teddlie (Eds.), *Handbook of Mixed Methods In Social and Behavioral Research*, 51–90, London: Sage Publications.

Mayer-Schönberger, V. & Cukier, K. (2013) Big Data: A Revolution That Will Transform How We Live, Work and Think, New York, *Houghton Mifflin Harcourt*.

Mazmanian, M., Orlikowski, W. J. & Yates, J. (2013) The Autonomy Paradox: The Implications of Mobile Email Devices for Knowledge Professionals, *Organization Science*, 24, (5), 1337–1357.

McDaniel, R. & Fanfarelli, J. (2016) Building Better Digital Badges, *Simulation & Gaming*, 47, (1), 73–102.

McGregor, D. (1960) *The Human Side of Enterprise* (2006<sup>th</sup> Ed.), New York, *McGraw-Hill*.

McLuhan, M. & Lapham, L. (1994) *Understanding Media: The Extensions of Man*, Cambridge, *MIT Press*.

- McQuater, K. (2018) Increase in Data Protection Complaints [Online], Available from: <https://www.research-live.com/article/news/increase-in-data-protection-complaints/id/5041443> [Accessed: 07.05.20].
- Merriam, S. B. & Tisdell, E. J. (2015) *Qualitative Research: A Guide to Design and Implementation* (4<sup>th</sup> Ed.), San Francisco, *Jossey-Bass*.
- Mertens, D. M. (2009) *Transformative Research and Evaluation*, London, *Guilford Press*.
- Microsoft Corporation (2012) Language Quality Game - Player Instructions [Online], Available from: <https://social.technet.microsoft.com/wiki/contents/articles/9301.language-quality-game-player-instructions.aspx> [Accessed: 31.05.19].
- Miles, S. (2012) Stakeholder: Essentially Contested or Just Confused?, *Journal of Business Ethics*, 108, (3), 285–298.
- Milman, O. (2018) Deepwater Horizon Disaster Altered Building Blocks of Ocean Life [Online], Available from: <https://www.theguardian.com/environment/2018/jun/28/bp-deepwater-horizon-oil-spill-report> [Accessed: 21.10.18].
- Milne, M. J. & Gray, R. (2013) W(h)ither Ecology? The Triple Bottom Line, the Global Reporting Initiative, and Corporate Sustainability Reporting, *Journal of Business Ethics*, 118, (1), 13–29.
- Mitchell, R. K., Agle, B. R. & Wood, D. J. (1997) Toward a Theory of Stakeholder Identification and Saliency: Defining the Principle of Who and What Really Counts, *Academy of Management Review*, 22, (4), 853–886.
- Molina-Azorin, J. F. & Feters, M. D. (2019) Building a Better World Through Mixed Methods Research, *Journal of Mixed Methods Research*, 13, (3), 275–281.
- Mook, L. (2006) Integrating and Reporting an Organisation's Economic, Social and Environmental Performance: The Expanded Value Added Statement, **In**: S.

- Schaltegger, M. Bennett & R. Burritt (Eds.), *Sustainability Accounting and Reporting*, 281–298, Dordrecht: Springer.
- Morgan, D. L. (2007) Paradigms Lost and Pragmatism Regained, *Journal of Mixed Methods Research*, 1, (1), 48–76.
- Morioka, S. N. & Carvalho, M. (2016) Measuring Sustainability in Practice: Exploring the Inclusion of Sustainability into Corporate Performance Systems in Brazilian Case Studies, *Journal of Cleaner Production*, 136, (1), 123–133.
- Morschheuser, B. & Hamari, J. (2019) The Gamification of Work: Lessons From Crowdsourcing, *Journal of Management Inquiry*, 28, (2), 145–148.
- Moss, G., Kennedy, H., Moshonas, S. & Birchall, C. (2015) Knowing Your Publics: The Use of Social Media Analytics in Local Government, *Information Polity: The International Journal of Government & Democracy in the Information Age*, 20, (4), 287–298.
- Mpinganjira, M. (2016) Influencing Consumer Engagement in Online Customer Communities: The Role of Interactivity, *Acta Commercii*, 16, (1), 1–10.
- Musk, E. (2014) All Our Patent Are Belong To You [Online], Available from: [https://www.tesla.com/en\\_GB/blog/all-our-patent-are-belong-you?redirect=no](https://www.tesla.com/en_GB/blog/all-our-patent-are-belong-you?redirect=no) [Accessed: 03.12.20].
- Myers, K. K. & Oetzel, J. G. (2003) Exploring the Dimensions of Organizational Assimilation: Creating and Validating a Measure, *Communication Quarterly*, 51, (4), 438–457.
- NatCen (2014) Framework [Online], Available from: <http://www.natcen.ac.uk/our-expertise/methods-expertise/qualitative/framework/> [Accessed: 04.06.17].
- National Cyber Security Centre (2017) Cyber Essentials: Homepage [Online], Available from: <https://www.cyberessentials.ncsc.gov.uk/> [Accessed: 17.06.19].

- Nectar Loyalty Ltd (2013) Where Can I Collect Points Online? [Online], Available from: <https://www.nectar.com/about/privacy-and-legal/participating-companies> [Accessed: 12.03.21].
- Nectar Loyalty Ltd (2018) About Nectar - FAQs [Online], Available from: <https://www.nectar.com/contact> [Accessed: 18.10.18].
- Netemeyer, R. G., Haws, K. L. & Bearden, W. O. (2011) Introduction, In: R. G. Netemeyer, K. L. Haws & W. O. Bearden (Eds.), *Handbook of Marketing Scales: Multi-item Measures for Marketing and Consumer Behavior Research*, (3rd Ed.), 1–11, London: Sage Publications.
- Ngu, S. B. & Amran, A. (2018) Materiality Disclosure in Sustainability Reporting: Fostering Stakeholder Engagement, *Strategic Direction*, 34, (5), 1–4.
- Nickell, E. B. & Roberts, R. W. (2014) The Public Interest Imperative in Corporate Sustainability Reporting Research, *Accounting and the Public Interest*, 14, (1), 79–86.
- Nieto, T., Méndez, F. & Carrasquilla, G. (1999) Knowledge, Beliefs and Practices Relevant for Malaria Control in an Endemic Urban Area of the Colombian Pacific, *Social Science & Medicine*, 49, (5), 601–609.
- Nike Inc. (2018) Nike+ Run Club App [Online], Available from: [https://www.nike.com/gb/en\\_gb/c/nike-plus/running-app-gps](https://www.nike.com/gb/en_gb/c/nike-plus/running-app-gps) [Accessed: 04.06.19].
- Nobre, H. & Ferreira, A. (2017) Gamification as a Platform for Brand Co-Creation Experiences, *Journal of Brand Management*, 24, (4), 349–361.
- Nonet, G., Kassel, K. & Meijs, L. (2016) Understanding Responsible Management: Emerging Themes and Variations from European Business School Programs, *Journal of Business Ethics*, 139, (4), 717–736.

- O'Brien, H. L. (2017) Antecedents and Learning Outcomes of Online News Engagement, *Journal of the Association for Information Science and Technology*, 68, (12), 2809–2820.
- O'Brien, H. L. & Toms, E. G. (2008) What is User Engagement?: A Conceptual Framework for Defining User Engagement with Technology, *Journal of the American Society for Information Science and Technology*, 59, (6), 938–955.
- Ockwell-Smith, S. (2017) *The Gentle Discipline Book: How to Raise Co-operative, Polite and Helpful Children*, London, *Piatkus*.
- Omary, M. B., Eswaraka, J., Kimball, S. D., Moghe, P. V., Panettieri, R. A. & Scotto, K. W. (2020) The COVID-19 pandemic and research shutdown: staying safe and productive [Online], Available from: <https://www.jci.org/articles/view/138646> [Accessed: 14.05.20].
- Oppenheim, A. N. (1992) *Questionnaire Design, Interviewing and Attitude Measurement*, London, *Continuum*.
- ORBIT (2013) Who We Work With [Online], Available from: <https://www.orbit-rri.org/> [Accessed: 06.05.20].
- ORBIT (2018) *Framework for Responsible Research and Innovation in ICT*, Leicester: ORBIT.
- ORBIT (2020) Advisory Board [Online], Available from: <https://www.orbit-rri.org/about/advisory-board/> [Accessed: 06.05.20].
- O'Reilly, K. (2012) *Ethnographic Methods* (2<sup>nd</sup> Ed.), London, *Routledge*.
- Orlikowski, W. J. & Baroudi, J. (1991) Studying Information Technology in Organizations: Research Approaches and Assumptions, *Information Systems Research*, 2, (1), 1–28.



- Otaduy, I. & Diaz, O. (2017) User Acceptance Testing for Agile-Developed Web-Based Applications: Empowering Customers Through Wikis and Mind Maps, *Journal of Systems and Software*, 133, (2017), 212–229.
- Pai, P. & Tsai, H. T. (2016) Reciprocity Norms and Information-Sharing Behavior in Online Consumption Communities: An Empirical Investigation of Antecedents and Moderators, *Information & Management*, 53, (1), 38–52.
- Paluch, S. & Tuzovic, S. (2019) Persuaded Self-Tracking with Wearable Technology: Carrot or Stick, *Journal of Services Marketing*, 33, (4), 436–448.
- Patton, M. Q. (2015) *Qualitative Research & Evaluation Methods: Integrating Theory and Practice* (4<sup>th</sup> Ed.), California, *Sage Publications*.
- Paulus, T., Woods, M., Atkins, D. P. & Macklin, R. (2017) The Discourse of QDAS: Reporting Practices of ATLAS.ti and NVivo Users with Implications for Best Practices, *International Journal of Social Research Methodology*, 20, (1), 35–47.
- Peirce, C. S. (1995) How to Make our Ideas Clear, **In:** R. B. Goodman (Ed.), *Pragmatism: A Contemporary Reader*, 37–50, London: Routledge.
- Perkbox (2018) Perkbox Recognition [Online], Available from: <https://www.perkbox.com/uk/platform/recognition> [Accessed: 06.06.19].
- Peters, S. (2012) *The Chimp Paradox*, London, *Vermilion*.
- Philippette, T. (2014) Gamification: Rethinking "Playing the Game" With Jacques Henriot, **In:** M. Fuchs, S. Fizek, P. Ruffino & N. Schrape (Eds.), *Rethinking Gamification*, 187–200, Lüneburg: meson press.
- Phillips, R. (2003) *Stakeholder Theory and Organizational Ethics*, San Francisco, *Berrett-Koehler*.

- Porter, M. E. & Kramer, M. R. (2006) Strategy and Society: The Link Between Competitive advantage and Corporate Social Responsibility, *Harvard Business Review*, 84, (12), 78–92.
- Porter, M. E. & Kramer, M. R. (2011) Creating Shared Value: How to Reinvent Capitalism - and Unleash a Wave of Innovation and Growth, *Harvard Business Review*, 89, (1), 62–77.
- Pratt, S. F. (2016) Pragmatism as Ontology, Not (Just) Epistemology: Exploring the Full Horizon of Pragmatism as an Approach to IR Theory, *International Studies Review*, 18, (3), 508–527.
- Preston, C. C. & Colman, A. M. (2000) Optimal Number of Response Categories in Rating Scales: Reliability, Validity, Discriminating Power, and Respondent Preferences, *Acta Psychologica*, 104, (1), 1–15.
- Putman, S. (2014) Prototyping an E-Learning Interface, *TD: Talent Development*, 68, (5), 26–29.
- QSR International (2018) NVivo 12 Pro [Online], Available from: <https://www.qsrinternational.com/nvivo/nvivo-products/nvivo-12-pro> [Accessed: 04.02.19].
- Rawhouser, H., Cummings, M. E. & Marcus, A. (2018) Sustainability Standards and Stakeholder Engagement: Lessons From Carbon Markets, *Organization & Environment*, 31, (3), 263–282.
- Rayman, N. (2014) Judge Places Most Blame on BP for 2010 Oil Spill [Online], Available from: <http://time.com/3268978/bp-gulf-oil-spill-louisiana-court/> [Accessed: 21.10.18].
- Remenyi, D. (1998) Central Ethical Considerations for Masters and Doctoral Research in Business and Management Studies, *South African Journal of Business Management*, 29, (3), 109.

Responsible 100 (2016) Roundtable meetings | Responsible 100 [Online], Available from: <https://www.responsible100.com/questions/roundtable-meetings/> [Accessed: 15.10.17].

Responsible 100 (2017a) Legal and General Business Profile [Online], Available from: <https://www.responsible100.com/participants/view/legal-general/> [Accessed: 15.10.17].

Responsible 100 (2017b) Questions | Responsible 100 [Online], Available from: <https://www.responsible100.com/questions/> [Accessed: 15.10.17].

Responsible 100 (2018) FAQ - Who is Behind Responsible 100? [Online], Available from: <https://www.responsible100.com/about/faq/> [Accessed: 28.09.18].

Responsible 100 (2020) What is Responsible 100? [Online], Available from: <https://www.responsible100.com/> [Accessed: 13.08.20].

Revilla, M. A., Saris, W. & Krosnick, J. A. (2014) Choosing the Number of Categories in Agree–Disagree Scales, *Sociological Methods & Research*, 43, (1), 73–97.

Ripple, W. J., Wolf, C., Newsome, T. M., Barnard, P. & Moomaw, W. R. (2019) World Scientists' Warning of a Climate Emergency, *BioScience*, 5, (1), 969–973.

Roberts, R. W. (1992) Determinants of Corporate Social Responsibility Disclosure: An Application of Stakeholder Theory, *Accounting, Organizations and Society*, 17, (6), 595–612.

Robson, K., Plangger, K., Kietzmann, J. H., McCarthy, I. & Pitt, L. (2015) Is it all a Game?: Understanding the Principles of Gamification, *Business Horizons*, 58, (4), 411–420.

Robson, K., Plangger, K., Kietzmann, J. H., McCarthy, I. & Pitt, L. (2016) Game On: Engaging Customers and Employees Through Gamification, *Business Horizons*, 59, (1), 29–36.

- Romero, S., Ruiz, S. & Fernandez-Feijoo, B. (2019) Sustainability Reporting and Stakeholder Engagement in Spain: Different Instruments, Different Quality, *Business Strategy and the Environment*, 28, (1), 221–232.
- Rorty, R. (1979) *Philosophy and the Mirror of Nature* (30<sup>th</sup> Ed.), Princeton, *Princeton University Press*.
- Rosenberg, E. (2017) "The Shed at Dulwich" was London's Top-Rated Restaurant on Trip Advisor. One Problem: It Didn't Exist [Online], Available from: <https://www.independent.co.uk/life-style/food-and-drink/the-shed-at-dulwich-was-london-s-top-rated-restaurant-just-one-problem-it-didn-t-exist-a8107791.html> [Accessed: 18.10.18].
- Ruffino, P. (2014) From Engagement to Life, Or: How to do Things with Gamification?, In: M. Fuchs, S. Fizek, P. Ruffino & N. Schrape (Eds.), *Rethinking Gamification*, 47–69, Lüneburg: meson press.
- Ryan, R. M. & Deci, E. L. (2000) Intrinsic and Extrinsic Motivations: Classic Definitions and New Directions, *Contemporary Educational Psychology*, 25, (1), 54–67.
- S&P Global (2018) DJSI World [Online], Available from: <https://eu.spindices.com/indices/equity/dow-jones-sustainability-world-index> [Accessed: 09.12.18].
- Sætra, H. (2019) When Nudge Comes to Shove: Liberty and Nudging in the Era of Big Data, *Technology in Society*, 59, (101130), 1–10.
- Santhanam, R., Liu, D. & Shen, W. (2016) Gamification of Technology-Mediated Training: Not All Competitions Are the Same, *Information Systems Research*, 27, (2), 453–465.
- Santos, G., Murmura, F. & Bravi, L. (2018) SA8000 as a Tool for a Sustainable Development Strategy, *Corporate Social Responsibility and Environmental Management*, 25, (1), 95–105.

- Sarathy, R. & Robertson, C. J. (2003) Strategic and Ethical Considerations in Managing Digital Privacy, *Journal of Business Ethics*, 46, (2), 111–126.
- Saunders, M. N. K., Lewis, P. & Thornhill, A. (2015) Research Methods for Business Students (7<sup>th</sup> Ed.), New York, *Pearson Education*.
- Saunders, M. N. K., Lewis, P. & Thornhill, A. (2019) Research methods for business students (8<sup>th</sup> Ed.), New York, *Pearson*.
- Schaedel, U. & Clement, M. (2010) Managing the Online Crowd: Motivations for Engagement in User-Generated Content, *Journal of Media Business Studies*, 7, (3), 17–36.
- Schaltegger, S., Bennett, M. & Burritt, R. (2006) Sustainability Accounting and Reporting: Development, Linkages and Reflection, **In:** S. Schaltegger, M. Bennett & R. Burritt (Eds.), *Sustainability Accounting and Reporting*, 1–34, Dordrecht: Springer.
- Schaltegger, S. & Burritt, R. (2006) Corporate Sustainability Accounting. A Catchphrase for Compliant Corporations or a Business Decision Support for Sustainability Leaders?, **In:** S. Schaltegger, M. Bennett & R. Burritt (Eds.), *Sustainability Accounting and Reporting*, 37–60, Dordrecht: Springer.
- Schaltegger, S., Etxeberria, I. A. & Ortas, E. (2017) Innovating Corporate Accounting and Reporting for Sustainability - Attributes and Challenges, *Sustainable Development*, 25, (2), 113–122.
- Schreck, P. & Raithel, S. (2018) Corporate Social Performance, Firm Size, and Organizational Visibility: Distinct and Joint Effects on Voluntary Sustainability Reporting, *Business & Society*, 57, (4), 742–778.
- Schwandt, T. (2000) Three Epistemological Stances for Qualitative Enquiry: Interpretivism, Hermeneutics, and Social Constructionism, **In:** N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of Qualitative Research*, (2nd Ed.), 189–213, London: Sage Publications.

- Scicluna, C. (2017) Gamification Is A Fad. Shall We Call It Motivational Design? [Online], Available from: <https://medium.com/casumo/gamification-is-a-fad-shall-we-call-it-motivational-design-5c8c836f4fc8> [Accessed: 18.06.19].
- Searcy, C. & Buslovich, R. (2014) Corporate Perspectives on the Development and Use of Sustainability Reports, *Journal of Business Ethics*, 121, (2), 149–169.
- Seiffert-Brockmann, J., Weitzl, W. & Henriks, M. (2018) Stakeholder Engagement Through Gamification, *Journal of Communication Management*, 22, (1), 67–78.
- Sera, L. & Wheeler, E. (2017) Game On: The Gamification of the Pharmacy Classroom, *Currents in pharmacy teaching & learning*, 9, (1), 155–159.
- Shen, W., Yu J.H. & Rees Ulmer, J. (2013) Competing For Attention: An Empirical Study Of Online Reviewers' Strategic Behavior, *MIS Quarterly*, 39, (3), 683–696.
- Shields, J. F. & Shelleman, J. M. (2017) A Method to Launch Sustainability Reporting in SMEs: The B Corp Impact Assessment Framework, *Journal of Strategic Innovation and Sustainability*, 12, (2), 10–19.
- Silverman, D. (1998) Qualitative Research: Meanings or Practices?, *Information Systems Journal*, 8, (1), 3–20.
- Silvius, A. & Schipper, R. (2014) Sustainability in Project Management: A Literature Review and Impact Analysis, *Social Business*, 4, (1), 63–96.
- Skinner, B. F. (1953) *Science and Human Behaviour*, New York, *Macmillan*.
- Smith, A. (1937) *The Wealth of Nations*, Copenhagen, *Filibooks*.
- Smith, D. F. (2014) A Brief History of Gamification [Online], Available from: <https://edtechmagazine.com/higher/article/2014/07/brief-history-gamification-infographic> [Accessed: 15.05.19].

- Soyka, P. A. (2013) IIRC Integrated Reporting Framework Toward Better Sustainability Reporting and (Way) Beyond, *Environmental Quality Management*, 23, (2), 1–14.
- Spencer, R. W. (2013) Work Is Not a Game, *Research Technology Management*, 56, (6), 59–60.
- Stanford Encyclopedia of Philosophy (2009) Richard Rorty [Online], Available from: <https://plato.stanford.edu/entries/rorty/> [Accessed: 24.05.20].
- Stanford Encyclopedia of Philosophy (2019) Pragmatism [Online], Available from: <https://plato.stanford.edu/entries/pragmatism/> [Accessed: 01.06.20].
- Steurer, R. (2006) Mapping Stakeholder Theory Anew: From the ‘Stakeholder Theory of the Firm’ to Three Perspectives on Business-Society Relations, *Business Strategy and the Environment*, 15, (1), 55–69.
- Stevenson, M. & Cole, R. (2018) Modern Slavery in Supply Chains: A Secondary Data Analysis of Detection, Remediation and Disclosure, *Supply Chain Management: An International Journal*, 23, (2), 81–99.
- Suh, A., Cheung, C., Ahuja, M. & Wagner, C. (2017) Gamification in the Workplace: The Central Role of the Aesthetic Experience, *Journal of Management Information Systems*, 34, (1), 268–305.
- Suh, A. & Wagner, C. (2017) How Gamification of an Enterprise Collaboration System Increases Knowledge Contribution: An Affordance Approach, *Journal of Knowledge Management*, 21, (2), 416–431.
- Sulitest.org (2016) What is "Sustainability Literacy"? [Online]: Sulitest.org, Available from: <https://www.sulitest.org/en/vision-mission.html> [Accessed: 03.08.20].
- Suri, H. (2011) Purposeful Sampling in Qualitative Research Synthesis, *Qualitative Research Journal*, 11, (2), 63–75.

- Sustainability Accounting Standards Board (2016) Contact Us [Online], Available from: <https://www.sasb.org/contact/> [Accessed: 15.04.17].
- Swani, K., Milne, G. R., Brown, B. P., Assaf, A. G. & Donthu, N. (2017) What Messages to Post? Evaluating the Popularity of Social Media Communications in Business Versus Consumer Markets, *Industrial Marketing Management*, 62, (2017), 77–87.
- Swanson, M. (2020) Gamification in 2020: Future of Immersive Technologies [Online], Available from: <https://www.gamify.com/gamification-blog/gamification-in-2019-a-more-matured-approach> [Accessed: 11.12.20].
- Tashakkori, A. & Teddlie, C. (2003) Handbook of Mixed Methods In Social and Behavioral Research, London, *Sage Publications*.
- Taylor, S. & Todd, P. A. (1995) Understanding Information Technology Usage: A Test of Competing Models, *Understanding Information Technology Usage*, 6, (2), 144–176.
- Teddlie, C. & Tashakkori, A. (2003) Major Issues and Controversies in the Use of Mixed Methods in the Social and Behavioural Sciences, In: A. Tashakkori & C. Teddlie (Eds.), *Handbook of Mixed Methods In Social and Behavioral Research*, 3–50, London: Sage Publications.
- Teddlie, C. & Yu, F. (2007) Mixed Methods Sampling: A Typology with Examples, *Journal of Mixed Methods Research*, 1, (1), 77–100.
- Tesco PLC (2018) What is Tesco Clubcard - Here are Our FAQs [Online], Available from: <https://secure.tesco.com/clubcard/about> [Accessed: 18.10.18].
- The Economist (2017) Nudge Comes to Shove [Online], Available from: <https://www.economist.com/international/2017/05/18/policymakers-around-the-world-are-embracing-behavioural-science> [Accessed: 10.05.20].
- The Fawcett Society (2018) Majority of Young men "More Likely to Challenge Sexual Harrassment" [Online], Available from: <https://www.fawcettsociety.org.uk/news/>



majority-of-young-men-more-likely-to-challenge-sexual-harassment-since-metoo  
[Accessed: 03.10.18].

The Oil Drum (2010) What Caused the Deepwater Horizon Disaster? [Online], Available from: <http://www.theoil Drum.com/node/6493> [Accessed: 21.10.18].

The United Nations (2017) About Us: What is PRME? [Online], Available from: <http://www.unprme.org/about-prme/index.php> [Accessed: 21.10.18].

The United Nations (2018) About the Sustainable Development Goals [Online], Available from: <https://www.un.org/sustainabledevelopment/sustainable-development-goals/> [Accessed: 10.07.19].

Thorpe, A. S. & Roper, S. (2019) The Ethics of Gamification in a Marketing Context, *Journal of Business Ethics*, 155, (2), 597–609.

Thurm, R. (2006) Taking the GRI to Scale. Towards the Next Generation of Sustainability Reporting Guidelines, In: S. Schaltegger, M. Bennett & R. Burritt (Eds.), *Sustainability Accounting and Reporting*, 325–338, Dordrecht: Springer.

TripAdvisor LLC (2017) About TripAdvisor [Online], Available from: <https://tripadvisor.mediaroom.com/uk-about-us> [Accessed: 18.10.18].

Trittin, H., Fieseler, C. & Maltseva, K. (2019) The Serious and the Mundane: Reflections on Gamified CSR Communication, *Journal of Management Inquiry*, 28, (2), 141–144.

Tsai, M. T., Cheng, N. C. & Chen, K. S. (2011) Understanding Online Group Buying Intention: The Roles of Sense of Virtual Community and Technology Acceptance Factors, *Total Quality Management & Business Excellence*, 22, (10), 1091–1104.

Tschopp, D. & Huefner, R. J. (2015) Comparing the Evolution of CSR Reporting to that of Financial Reporting, *Journal of Business Ethics*, 127, (3), 565–577.

- Turner, S. F., Cardinal, L. B. & Burton, R. (2017) Research Design for Mixed Methods, *Organizational Research Methods*, 20, (2), 243–267.
- U.K Government (2019) Companies Act 2006 Chapter 46: Part 10, Chapter 2, Clause 176 [Online], Available from: <http://www.legislation.gov.uk/ukpga/2006/46/section/172/data.pdf> [Accessed: 27.11.19].
- Ullmann, A. A. (1985) Data in Search of a Theory: A Critical Examination of the Relationships Among Social Performance, Social Disclosure, and Economic Performance of U.S. Firms, *Academy of Management Review*, 10, (3), 540–557.
- Under Armour, Inc. (2018) MyFitnessPal - About [Online]: Under Armour, Inc., Available from: [https://www.myfitnesspal.com/welcome/learn\\_more](https://www.myfitnesspal.com/welcome/learn_more) [Accessed: 05.08.20].
- United Nations (2016) About the PRI: What are the Principles for Responsible Investment? [Online], Available from: <https://www.unpri.org/pri/what-are-the-principles-for-responsible-investment> [Accessed: 10.07.19].
- United Nations Development Programme (1999) Human Development Report 1999, Oxford: Oxford University Press.
- United Nations Global Compact (2018) Integrating the SDGs Into Corporate Reporting: A Practical Guide, Amsterdam: United Nations Global Compact and The Global Reporting Initiative.
- United Nations World Commission on Environment and Development (1987) Our Common Future, Oxford, *Oxford University Press*.
- Valdes-Vasquez, R. & Klotz, L. E. (2013) Social Sustainability Considerations during Planning and Design: Framework of Processes for Construction Projects, *Journal of Construction Engineering and Management*, 139, (1), 80–89.

- Vallerand, R. J. (2000) Deci and Ryan's Self-Determination Theory: A View From the Hierarchical Model of Intrinsic and Extrinsic Motivation, *Psychological Inquiry*, 11, (4), 312–318.
- van Buren, H. J. (2001) If Fairness is the Problem, is Consent the Solution? Integrating ISCT and Stakeholder Theory, *Business Ethics Quarterly*, 11, (3), 481–499.
- van Noort, G., Voorveld, H. & van Reijmersdal, E. A. (2012) Interactivity in Brand Web Sites: Cognitive, Affective, and Behavioral Responses Explained by Consumers' Online Flow Experience, *Journal of Interactive Marketing*, 26, (4), 223–234.
- van Teijlingen, E. R. & Hundley, V. (2001) The Importance of Pilot studies, *Social Research Update*, 35, (1), 1–4.
- Veltsos, J. R. (2017) Gamification in the Business Communication Course, *Business and Professional Communication Quarterly*, 80, (2), 194–216.
- Vernuccio, M., Pagani, M., Barbarossa, C. & Pastore, A. (2015) Antecedents of Brand Love in Online Network-Based Communities. A Social Identity Perspective, *Journal of Product & Brand Management*, 24, (7), 706–719.
- Vesa, M. & Harviainen, J. T. (2019) Gamification: Concepts, Consequences, and Critiques, *Journal of Management Inquiry*, 28, (2), 128–130.
- Villiers, C. de, Rouse, P. & Kerr, J. (2016) A New Conceptual Model of Influences Driving Sustainability Based on Case Evidence of the Integration of Corporate Sustainability Management Control and Reporting, *Journal of Cleaner Production*, 136, A, 78–85.
- Vincent, R. C. (2016) The Internet and Sustainable Development: Communication Dissemination and the Digital Divide, *Perspectives on Global Development and Technology*, 15, (6), 605–637.
- Visser, W. (2005) Business Frontiers: Social Responsibility, Sustainable Development and Economic Justice, Hyderabad, India, *ICFAI University Press*.

- Visser, W. (2011) *The Age of Responsibility: CSR 2.0 and the New DNA of Business*, Chichester, *Wiley*.
- Visser, W. (2015) *Sustainable Frontiers: Unlocking Change Through Business, Leadership and Innovation*, Sheffield, *Greenleaf Publishing*.
- Visser, W. (2017) The Real Value of Non-Financial Reporting On Sustainability Performance by Companies [Online], Available from: <http://www.infrastructure-channel.com/sustainability/the-real-value-of-non-financial-reporting-on-sustainability-performance-by-companies/> [Accessed: 28.10.17].
- Vitality Health (2016) How Vitality Rewards Work [Online], Available from: <https://www.vitality.co.uk/rewards/> [Accessed: 05.11.17].
- Vitolla, F., Raimo, N. & Rubino, M. (2019) Appreciations, Criticisms, Determinants and Effects of Integrated Reporting: A Systematic Literature Review, *Corporate Social Responsibility and Environmental Management*, 26, (2), 518–528.
- Vivek, S. D., Beatty, S. E. & Morgan, R. M. (2012) Customer Engagement: Exploring Customer Relationships Beyond Purchase, *Journal of Marketing Theory and Practice*, 20, (2), 122–146.
- Volvo Car Corporation (2019) 60 Years of the Safety Belt [Online], Available from: <https://www.volvocars.com/uk/about/humanmade/discover-volvo/60-years-of-the-safety-belt> [Accessed: 03.12.20].
- Waddock, S. A. & Graves, S. B. (1997) The Corporate Social Performance-Financial Performance Link, *Strategic Management Journal*, 18, (4), 303–319.
- Wahyuni, D. (2012) The Research Design Maze, *Journal of Applied Management Accounting Research*, 10, (1), 69–80.
- Walker, S. & Visser, W. (2015) *Transforming Corporate Accountability: The Revolution of Transparency, Ratings & Social Media*, Cambridge: Kaleidoscope Futures.

- Wallace, M. & Sheldon, N. (2015) Business Research Ethics: Participant Observer Perspectives, *Journal of Business Ethics*, 128, (2), 267–277.
- Walz, S. P. & Deterding, S. (2014) An Introduction to the Gameful World, In: S. P. Walz & S. Deterding (Eds.), *The Gameful World: Approaches, Issues, Applications*, 1–13, Cambridge: MIT Press.
- Wang, Q., Dou, J. & Jia, S. (2016) A Meta-Analytic Review of Corporate Social Responsibility and Corporate Financial Performance: The Moderating Effect of Contextual Factors, *Business & Society*, 55, (8), 1083–1121.
- Wang, Y., Wei, J., Ren, S. & Shen, Y. (2016) Toward Integrity Assurance of Outsourced Computing — A Game Theoretic Perspective, *Future Generation Computer Systems*, 55, (1), 87–100.
- WARC (2020) Market Research is Critical to COVID-19 Response [Online], Available from: <https://www.warc.com/newsandopinion/news/market-research-is-critical-to-covid-19-response/43411> [Accessed: 14.05.20].
- Warren, C. (2002) Qualitative Interviewing, In: J. F. Gubrium & J. A. Holstein (Eds.), *Handbook of Interview Research: Context & Method*, 83–103, London: Sage Publications.
- Weick, K. E. (1995) *Sensemaking in Organizations*, Thousand Oaks, California, Sage Publications.
- Weller, S. (2017) Using Internet Video Calls in qualitative (Longitudinal) Interviews: Some Implications for Rapport, *International Journal of Social Research Methodology*, 20, (6), 613–625.
- Welsh, E. (2002) Dealing with Data: Using NVivo in the Qualitative Data Analysis Process, *Qualitative Social Research*, 3, (2), 20–26.

- Wempe, J. (2009) Industry and Chain Responsibilities and Integrative Social Contracts Theory, *Journal of Business Ethics*, 88, S4, 751–764.
- Werbach, K. & Hunter, D. (2012) For the Win: How Game Thinking can Revolutionize Your Business, Philadelphia, *Wharton Digital Press*.
- Wheeler, K. M. (1993) Romanticism, Pragmatism, and Deconstruction, Oxford, *Blackwell*.
- White, K., Hardisty, D. J. & Habib, R. (2019) The Elusive Green Consumer [Online], Available from: <https://hbr.org/2019/07/the-elusive-green-consumer> [Accessed: 20.11.20].
- Wicks, A. C., Gilbert, D. R. & Freeman, R. E. (1994) A Feminist Reinterpretation of the Stakeholder Concept., *Business Ethics Quarterly*, 4, (4), 475–497.
- WikiRate (2015) The Challenge [Online], Available from: <http://wikirate.eu/about/the-challenge/> [Accessed: 17.04.17].
- Williams, J. (2019) How Extinction Rebellion Shifted the Overton window [Online], Available from: <https://earthbound.report/2019/05/02/how-extinction-rebellion-shifted-the-overton-window/> [Accessed: 27.07.20].
- Woodcock, J. & Johnson, M. R. (2018) Gamification: What It Is, and How to Fight It, *The Sociological Review*, 66, (3), 542–558.
- Yen, B., Mulley, C. & Burke, M. (2019) Gamification in Transport Interventions: Another Way to Improve Travel Behavioural Change, *Cities*, 85, (1), 140–149.
- Zaichkowsky, J. L. (1985) Measuring the Involvement Construct, *Journal of Consumer Research*, 12, (3), 341.
- Zichermann, G. (2013) Gamification: The Hard Truths [Online], Available from: [https://www.huffpost.com/entry/gamification\\_b\\_2516376](https://www.huffpost.com/entry/gamification_b_2516376) [Accessed: 11.06.19].

Zuboff, S. (2015) Big Other: Surveillance Capitalism and the Prospects of an Information Civilisation, *Journal of Information Technology*, 30, (1), 75–89.

Zuboff, S. (2019) Surveillance Capitalism and the Challenge of Collective Action, *New Labor Forum*, 28, (1), 10–29.

## APPENDICES

### Appendix One – Supporting Material

#### Example Parallel Research to Underpin Contribution

To further underline how this research contributes to knowledge and theory development, three relevant examples were located as part of the literature review process. Firstly, in a recent study, Leclercq *et al.* (2018) investigated the negative effects on customer engagement of a customer potentially “losing” a competition in a gamified environment, an area not often explored by research papers (2018, p.82). The research conducted a series of experiments on the Amazon “Mechanical Turk” (AMT) platform (Amazon Mechanical Turk, 2007, [online]). Leclercq *et al.* (2018) created brands and through a combination of parameters set different permutations of “winning” and “losing” gamified “competitions” for creative projects (2018, p.93). Leclercq *et al.* (2018) proceed to conclude that “losing” can have a negative effect on the potential of gamification to increase engagement in a topic, but in some cases (where the customer is very engaged in the community) this effect is moderated to a degree (2018, p.93). The contribution to theory made by Leclercq *et al.* (2018) is primarily focussed on “Equity Theory” (Adams, 1965), a classic theory which focuses on assigning theoretical “values” to elements of transactions to ascertain “fairness” (1965, p.273) combined with elements of theory around consumer engagement and value co-creation (2018, p.86). Designing their research around elements of gamification within AMT, Leclercq *et al.* (2018) suggest a link between online participation and increased consumer engagement (Leclercq *et al.*, 2018, p.84), which underpins the justification for the contribution made by this thesis. It is worth noting that AMT itself is not primarily a gamification platform, it is more closely-aligned with “crowd-sourcing” (Howe, 2008) of jobs to a marketplace as its primary purpose. However, like many platforms it incorporates elements of gamification to help users make choices about who to purchase from or interact with (Beresford, 2011, [online]). Leclercq *et al.* (2018) proceed to raise the possible negative implications of not “rewarding” stakeholders for their contributions, emphasising the need for gamification designers to take care when creating mechanisms for reward so as not to leave people perceiving they have “lost” (Leclercq *et al.*, 2018, p.94). Whilst “Equity Theory” (Adams, 1965) is not necessarily appropriate as the major theoretical basis for this thesis, it remains a valid and useful way to evaluate this “exchange” of stakeholder contributions and proves an interesting secondary consideration



for this research, and one which was addressed in chapter three where the research design is discussed and justified.

Secondly, Hammedi *et al.* (2017) researched the use of game mechanics in healthcare provision (2017, p.641) with a focus on improving patient's experience of service delivery (2017, p.643). The application of gamification in healthcare is also endorsed by Robson *et al.* (2015) in an earlier paper on the principles of gamification (2015, p.412), and reflected in the success of health tracking hardware and applications noted earlier in this section, such as Fitbit (2016, [online]) and Apple Health (Apple Inc., 2016, [online]). Hammedi *et al.* (2017) found that gamification can help promote the use of healthcare services but also uncovered some specific negative aspects on patient motivation and the management of the concept by the staff (2017, p.651). Hammedi *et al.*'s (2017) research contributes to knowledge by drawing upon existing theories of motivation, using Self-Determination Theory (Deci and Ryan, 1985, p.35) and theory specific to the domain of healthcare (2017, p.654). The authors use this theory to create their own conceptual framework: the "Experiential Value Typology" (Hammedi *et al.*, 2017, p.654). This framework maps four categorisations from their research across both types of motivation from Self-Determination Theory (SDT) and the type of action required for patients in their study to experience that "type" of value. It shows a working example of how existing theories can be conceptualised differently in the context of a new medium of interaction such as gamification, therefore validating the approach taken by this thesis.

Finally, Baxter *et al.* (2016) studied the application of gamification to organisational compliance training, concluding that it increased the enjoyment of the training, but did not noticeably increase the effectiveness of perceived learning outcomes (2016, p.130). There were, however, interesting findings around the effectiveness of gamification at reducing apathy to the concept (2016, p.131), which are of particular interest to this research as they reinforce the case for the use of gamification for potentially achieving similar results in the domain of SAR. Baxter *et al.* (2016) make a contribution to knowledge by conducting a novel study on the impact of gamification in a previously unresearched domain of IT and compliance training (2016, p.121) but do not base this on a conceptual framework or existing theory, making their contribution harder to conceptualise. This shows the importance of conducting such an exercise and provided valuable insight for this research, leading to the creation of the framework which can be found in chapter two.

## Epistemology, Ontology and Research Methods

A positivist research approach usually involves the testing of hypotheses against empirical data, and is epistemologically aligned to the natural sciences (Orlikowski and Baroudi, 1991, p.13; Bryman, 2016, p.32). The process of building a hypothesis based on existing theory, testing it and examining the results to inform future theory is known as a deductive approach (Orlikowski and Baroudi, 1991, p.7; Bryman and Bell, 2015, p.23; Bryman, 2016, p.21; Saunders *et al.*, 2019, p.51). The adoption of a positivist epistemological stance leads to an ontological perspective of objectivism, which is the belief that the social world exists independently of our influence (Bryman and Bell, 2015, p.32; Saunders *et al.*, 2015, p.131; Bryman, 2016, p.29). Social research conducted from an epistemological perspective of positivism, and the ontological belief of objectivism is usually conducted using quantitative methods (Bryman, 2016, p.32).

By contrast, interpretivist epistemologies consider the behaviour of people and organisations to be subjective and relating to how such entities interpret and “make sense” of the world around them (Orlikowski and Baroudi, 1991, p.13; Weick, 1995, p.29; Baker and Schaltegger, 2015, p.265; Bryman, 2016, p.26). Such behaviour is therefore subjective and interpretable in a number of ways (Schwandt, 2000, p.191), making it by nature open to the influence of the researcher or observer (Braun and Clarke, 2016, p.740). Social research conducted from an interpretivist epistemology is more aligned with the natural sciences. It does not normally rely on hypothesis-testing and leads to theory “emerging” from data and being formulated by the researcher, in a process known as “inductive” theory (Chatman, 1996, p.193; Bryman and Bell, 2015, p.26; Patton, 2015, p.64; Saunders *et al.*, 2019, p.144). The adoption of an interpretivist epistemological stance leads to the ontological perspective of constructionism, which asserts that reality is constantly built, imagined and reimagined by both people and organisations within their contexts (Orlikowski and Baroudi, 1991, p.14; Bryman and Bell, 2015, p.33; Burr, 2015, p.3; Bryman, 2016, p.30) or social “fields” (Bourdieu, 1991, p.242). Social research conducted from an epistemological perspective of interpretivism, and the ontological belief of constructionism is usually conducted using qualitative methods (Bryman, 2016, p.32).

## Exploratory Sequential Designs: Exemplar Paper Reviews

This section of the appendices provides further detail on the exemplar examples of exploratory sequential mixed methods research referenced in chapter three. These are highlighted as reference points and justifications for the design adopted in this research. The papers were: Mak and Marshall (2004), Capstick and Pidgeon (2014) and Betancourt *et al.* (2011).

Firstly, Mak and Marshall (2004) developed a theoretical model (2004, p.471), upon which they designed and administered a qualitative survey. The survey asked open-ended questions about participant's feelings in relation to aspects of the relationships with others (Mak and Marshall, 2004, p.475). The data collected from the survey was inductively coded and thematically analysed (Mak and Marshall, 2004, p.475), and tested for reliability using statistical techniques more commonly found in quantitative research (2004, p.475). The authors used the findings of the qualitative survey to design a scale which was then tested on a smaller sample using a quantitative survey instrument (Mak and Marshall, 2004, p.480), albeit with some limitations on generalisability due to initial sampling methods employed (2004, p.483). It is also surprising that Mak and Marshall (2004) use a sample size of 175 for the qualitative survey in the first phase (2004, p.474) which is larger than that of 99 used in the quantitative phase (2004, p.477). Notwithstanding this issue, the research is very similar in design to that adopted for this thesis, and Mak and Marshall's (2004) approach was cited by Creswell and Creswell (2011) as an exemplar of the ESD (2011, p.90). The application of statistical testing on the qualitative data, a technique more commonplace in quantitative research, is a particularly good example of how mixed methods research adds value by combining techniques from both methodologies to improve overall effectiveness of the research (Saunders *et al.*, 2019, p.164).

Secondly, Capstick and Pidgeon (2014), who are cited by Bryman (2016) as providing a "good example" (2016, p.639) of an ESD. The authors take a similar approach to Mak and Marshall (2004), but utilise a different qualitative design. Capstick and Pidgeon (2014) conduct a focus group of 47 participants (2014, p.390), collecting conversational data and analysing it using thematic analysis (2014, p.390), before using the knowledge from the themes (2014, p.391) to design the questions (Bryman, 2016, p.652) and execute a much larger quantitative survey of 500 participants (2014, p.390). The data was then combined

to derive their findings (Bryman, 2016, p.652) validating qualitative data with a quantitative survey. Whilst the techniques used to collect the qualitative data differ to that completed for this thesis, the approach is the same, and provides a further example of the effectiveness of ESDs.

Finally, Betancourt *et al.* (2011), who Creswell and Creswell (2018) support as an exemplar of an ESD (2018, p.243). Betancourt *et al.* (2011), in a similar design to that completed for this Thesis, use semi-structured interviews (2011, p.34) followed by thematic analysis (2011, p.35) to develop and execute a quantitative survey phase (2011, p.35). This survey validated some parameters the authors then subsequently assessed the success (or otherwise) of an intervention (2011, p.36). Whilst the context that Betancourt *et al.* (2011) operate within is fundamentally different to that proposed herein, they use a broadly similar design approach. However, Betancourt *et al.* (2011) use “instrument development” (Creswell and Plano Clark, 2011, p.90) as opposed to “Context” (Bryman, 2016, p.642), and, of course, they do not adopt an online prototype instrument described in a later section of this chapter. Nonetheless, this paper shows how ESDs can operate in multiple cultural contexts, across disciplines and still produce effective results. This paper, and indeed the two preceding examples also highlight the effectiveness and impact of the qualitative phase, in particular thematic analysis (Wahyuni, 2012, p.76) as a tool in providing input to the design of effective exploratory quantitative instruments.

## Appendix Two – Semi-Structured Interviews: Supporting Material

### Project Information Sheet & Consent Forms

This form and webpage were provided to all participants and it was mandatory that they reviewed and signed them prior to the completion of the interview, or the online survey. The forms provided information on the purpose of the study, the procedure for participation and information about retention of data and privacy.



### Project Information Sheet & Consent Form

This information sheet is designed to provide you with an overview of the research project you are invited to participate in, and your role within it, so that you may make an informed decision as to whether you participate or not. If you *do* wish to participate, please sign and return the consent form. Should you decide *not* to participate, please advise the researcher. Thank you in advance for your time.

---

**Study Title:** Exploring the Perceived Barriers for Using Gamification as a Technique for Increasing Stakeholder Engagement in Sustainability Accounting and Its Reporting.

**Invitation to Participate:** I am a student at the University of Winchester studying for a research degree: A Doctor of Business Administration (DBA). The research project described below, forms part of this degree. I am therefore inviting you to take part in this project titled above. Before you decide to participate, it is important you understand what the project involves and what you will have to do if you agree to take part. So, please take time to read the following information. Please ask me anything is unclear.

Your participation in the study is entirely voluntary and you are free to withdraw at any time without penalty, and without giving a reason.

**Procedure:** you will be participating in a short, conversational interview. The subject will concern your perceptions as a producer or consumer of Sustainability Accounting and Reporting (SAR). We will discuss your interactions with products and services you use as a consumer or produce as part of your job role. Your involvement in the research will end following the completion of the interview, with no ongoing data collection or lifestyle impact. The interview will be conducted either in person, or over the phone, and will be recorded for transcription purposes. There are no other expected risks to be aware of in your participation.

**Confidentiality & Ethics:** The data will be anonymised before storage, transcription or use should it be published as part of the study. Copies of the research project may be made available to future students as part of the library facilities at the University of Winchester. Digital records of interviews will not be shared and will be destroyed following completion of the research, no later than 31<sup>st</sup> December 2021. The study has been approved by the Faculty of Law Business and Sport, and RDC Ethics Sub-Committee.

Should you have any questions about the study, please contact the researcher via email. If you feel the study has been conducted inappropriately, or have any other concerns you wish to discuss, please contact either the Chief Investigator or the Chair of the Winchester University's RKT Ethics Committee. The consent form follows on page 2.

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## Exploring the Perceived Barriers for Using Gamification as a Technique for Increasing Stakeholder Engagement in Sustainability Accounting and Its Reporting

### Consent Form

I have read and understood the information about the project. I understand that my participation in this project is completely voluntary, and that I may withdraw at any time during the project, without penalty.

I understand the arrangements that have been made to ensure my anonymity and privacy. I am aware that I have the right to see what has been written about me.

The researcher has made clear to me any risks which may be involved in my participation in the project.

I understand that the interview will be recorded and transcribed.

The arrangements for secure storage of data, and for its eventual disposal, have been explained to me.

On this basis, I consent to take part in the project.

Signed. .... Date.....

The research will be conducted by Ian Blakesley.  
The researcher can be contacted by email at: i.blakesley.13@unimail.winchester.ac.uk

## Project Information and Consent to Participate

### Project information

**Study Title: Exploring the Perceived Barriers for Using Gamification as a Technique for Increasing Stakeholder Engagement in Sustainability Accounting and Its Reporting**

**Invitation to Participate:** I am a student at the University of Winchester studying for a research degree: A Doctor of Business Administration (DBA). The research project described below, forms part of this degree. I am therefore inviting you to take part in this project titled above. Before you decide to participate, it is important you understand what the project involves and what you will have to do if you agree to take part. So, please take time to read the following information. Please ask me if anything is unclear

Your participation in the study is entirely voluntary and you are free to withdraw at any time without penalty, and without giving a reason. You can remain anonymous throughout if you prefer

**Procedure:** you will be participating in a short survey based on your interaction with an example website we have published online. The survey includes some general questions about your opinions and attitudes towards Sustainability Accounting and Reporting (SAR). Participation involves watching an introductory video presentation delivered online prior to looking at the website and participating in the survey. Your involvement in the research will end following the completion of the survey, with no ongoing data collection or lifestyle impact. The video, website and survey are all delivered online and can be completed on any internet-enabled device at your leisure. There are no other expected risks to be aware of in your participation.

**Confidentiality and Ethics:** Any sensitive data provided will be anonymised before storage or use should it be published as part of the study. Copies of the research project may be made available to future students as part of the library facilities at the University of Winchester. Digital records of data will not be shared and will be destroyed following completion of the research, no later than 31st December 2021. The study has been approved by the Faculty of Law Business and Digital Technologies and the RDC Ethics Sub-Committee.

Should you have any questions about the study, please contact the researcher via email. If you feel the study has been conducted inappropriately, or have any other concerns you wish to discuss, please contact either the Chief Investigator or the Chair of the Winchester University's RKT Ethics Committee.

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### Consent

I have read and understood the information about the project. I understand that my participation in this project is completely voluntary, and that I may withdraw at any time during the project, without penalty.

I understand the arrangements that have been made to ensure my anonymity and privacy. I am aware that I have the right to see what has been written about me.

The researcher has made clear to me any risks which may be involved in my participation in the project.

I understand that the research and survey is conducted online, and that I may choose to remain anonymous.

The arrangements for secure storage of data, and for its eventual disposal, have been explained to me.

**By participating in the survey and answering the "Consent to Participate" questions accordingly I consent to take part in the project.**

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## Interview Guide One – “Producer” Stakeholders and / or Customers of Responsible 100

In accordance with the Research Design discussed in chapter three, interview guides and flowcharts used by the researcher are included for reference here. This first interview guide is for Consumers of Sustainability Accounting and Reporting (SAR), with the equivalent guide and flowchart for Consumers of SAR following in the next section. Instructions noted in italics are interviewer prompts.

The questionnaire was designed to capture perceptions and responses about gamification without referencing the topic area directly.

The interviews can be tailored to the participant’s level of interaction to ensure the duration remains between 30 and sixty minutes, as planned in the research design. Therefore, indented questions marked with letters are considered lower priority, and may be omitted if the interview is time constrained.

1. What were the main reasons you became involved with R100, and what attracted you to their approach to sharing Sustainability Accounting and Reporting (SAR) information? *If This consumer is NOT a customer of R100 rephrase to: Have you ever been involved with or used an interactive SAR platform or provider, and if so what in particular attracted you to the approach used for sharing the SAR information in that case?*
2. Do you seek feedback from your customers on SAR information that you publish? What elements in customer feedback are most and least important to you?
3. What are your views on how engaged your customers are in SAR information?
  - a. What do you think is behind their attitudes or approaches to this? Are there any sections of your customer base who appear more engaged than others?

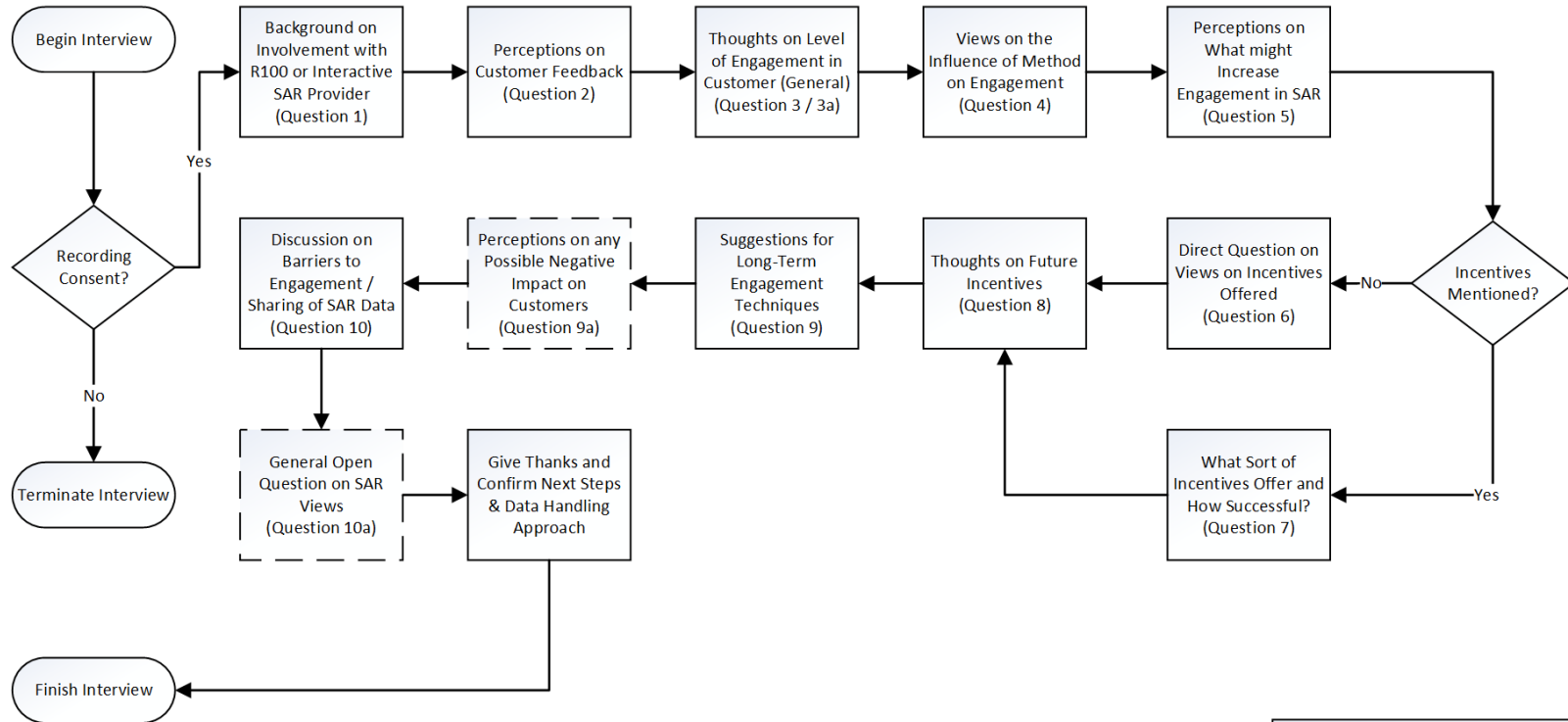


4. How does your online approach to interacting with your customers on these issues impact their engagement? What other types of approach do you have experience of?
5. What do you think might make your customers engage more in the SAR information you share, both in general and on the R100 *[if a customer of R100]* platform? *If incentives are mentioned by the interviewee, go to question 8, otherwise question 7.*
6. What are your views on incentives or reward schemes to encourage your customers to participate in interacting with your SAR data? *Interviewer to provide examples from other applications if none forthcoming? If examples are provided go to Question 9.*
7. What sort of incentives (if any) have you offered so far for your customers to participate, and how successful have they been?
8. What future incentives would you consider offering if any option was possible?
9. What approaches to long term involvement and engagement do you think are important for platforms like R100 *[if a customer of R100]* to consider in the future?
  - a. Considering what we have discussed today, what negative implications can you see for your customer base?
10. Are there any areas of resistance or critique that create barriers to wider engagement with the process of sharing this data?
  - a. Considering everything we have discussed today, are there any other views on SAR processes, platforms or data you would like to share before we finish?

# “Producer” Stakeholders and / or Customers of R100 – Interview Guide Flow

Version 1.2

General Questions



**Key**  
 (See Supporting Notes)

Mandatory Questions

Optional Question

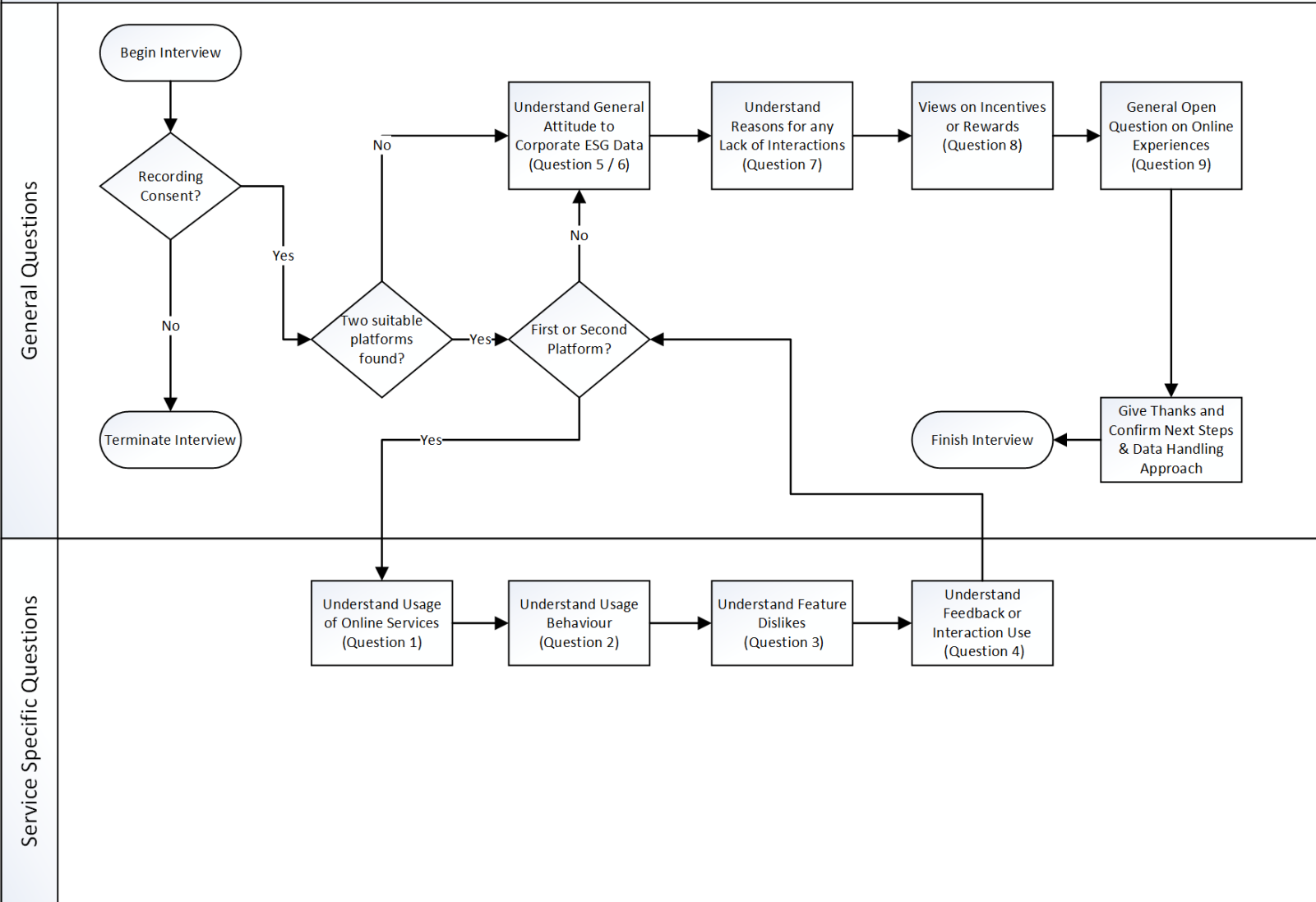
## Interview Guide Two – “Consumer” Stakeholders

1. Please can you tell me about the services you use online, for example: social media platforms, television or shopping? From the responses given, select one shopping / retail use and one social media platform, and ask questions 2-4 for each one. In the unlikely event no suitable options are provided, go to Question 5.
2. Considering your use of <Name Here>, can you tell me some more about a typical session you might have on this platform?
3. What would make you use <Name Here> more regularly or experiment with more of the features which you currently avoid using?
4. Do you use any of the feedback or user interaction options provided by <Name Here>?
5. Considering both platforms we have been talking about, do you ever look at aspects of <Name Here>'s environmental or social performance data on their websites? Do any of these factors influence your use / buying experience with <Name Here>? *If **NOT** then go to question 6, otherwise go to question 7.*
6. If not, are there any other cases where you *do* look at this information? What makes you look at this information in these cases?
7. In general, what dissuades you from participating in feedback or interactions with either of these companies on their websites?
8. What might make you interact more, or provide more feedback to either of these companies?

Considering everything we have discussed today, are there any other stories, or personal experiences about your experiences with either of these companies you would like to share before we finish?

# "Consumer" Stakeholders – Interview Guide Flow

Version 1.3



### Appendix Three – Full Summary of Thematic Categories

The below table summarises all top-level thematic categories and their occurrences in total, and by interview.

Theme	Occurrences In		Theme	Occurrences In	
	Total	Interviews		Total	Interviews
Barriers to Engagement	346	20	Reviewing Online	23	11
Mediators of Engagement	273	20	Interview Observations	22	9
Rewards & Incentives	135	18	Research	19	11
Feedback and Interaction	119	19	Regulatory, Administrative, NGO or Ombudsman	17	4
Hot Topics (The Overton Window)	112	19	eCommerce	16	10
Social Media	109	18	Sustainability Accounting & Reporting	16	7
Antecedents to Engagement	76	14	Training or Education	15	6
Stakeholder Engagement	59	11	Hobbies & Interests	14	8
Behavioural Bias or Influence	46	11	Stakeholder Interaction	12	7
Responsible 100	42	9	Supply Chains	12	5
Market or Marketing Driven	41	15	Thought Provoking	12	9
Organisational structures	41	12	Value Creation	12	8
Frameworks and Standards	37	10	Social Considerations	10	5
Brand Related	34	12	Coronavirus	8	2
Ethical Issues	32	11	You Should Care About It If You Are A Stakeholder	8	4
Product or Service Differentiation	31	12	Views on Prototype or Mission of Research	7	4
How to Measure Success	30	10	Family & Friends	6	4
Demographics	29	10	Governance	6	4
Gamification	29	9	Surveillance Capitalism	5	4
External Accreditation and Validation	25	4	Exchange	2	1
Greenwash, Misinformation, Creative Reporting or Minimal Effort	24	8			
Financial Products	23	5			

## Appendix Four – Full Summary of Survey Data Collected

For further supplementary details please refer to the tables in chapter four.

Question #	Question	What result suggests generalisation?	Median Score	Result	Indicates Generalisation?
4	In general, I care about the impact of my product choices on both people and the planet	N/A	6	N/A	N/A
5	My buying choices alone do not make a difference to either people or the planet	> Agree	3	Somewhat Disagree	No
6	I cannot influence how a business behaves through the choices I make when buying its products	> Agree	3	Somewhat Disagree	No
7	I only consider looking at the impact of a product on people and the planet if I feel it is a significant purchase, as opposed to an everyday purchase	> Agree	3	Somewhat Disagree	No
8	A smaller, cheaper product by nature does not present a significant impact on people or the planet as a more expensive one	> Agree	2	Disagree	No
9	Please rank these items in order of importance when making purchasing decisions: Product Performance, Product Price, Impact on People and the Planet	Price, Performance, Impact, Convenience	-	Performance, Price, Impact, Convenience	N/A
10	I would pay more for a product in order for it be kinder to people or the planet	< Disagree	3	Somewhat Disagree	Yes
11	I find it easier to stick to my regular products and services as I know I am happy with them rather than consider alternatives which might be better for people or the planet	> Agree	5	Somewhat Agree	Yes
12	News stories and world events influence my values especially in the areas of impact on people and the planet	> Agree	5.5	Somewhat Agree	N/A
13	I do not have time to look into the Impact Data of products I buy or use	> Agree	4	Inconclusive	Inconclusive
14	There are demands on my time I consider more important than looking at Impact Data on products I buy or use	> Agree	5	Somewhat Agree	Yes
15	Which of the following best describe the demands on your time that prevent you looking at this information?	Ranking	-	Family, Work, Hobbies, Charity, Other	N/A
16	I find Impact Data difficult to understand because of the way it is presented	> Agree	4	Inconclusive	Inconclusive
17	In general, I find the way Impact Data is usually presented difficult to relate to	> Agree	4	Inconclusive	Inconclusive

18	I am more likely to react to Impact Data if there is an easy flow of information or a story to follow	> Agree	6	Agree	Yes
19	Unless Impact Data is at my fingertips it is hard to get involved in	> Agree	6	Agree	Yes
20	I feel overloaded with the amount of electronic information I have to process daily on social media, websites and email	> Agree	5	Somewhat Agree	Yes
21	I often find the amount of Impact Data presented on websites makes it difficult for me to put into context	> Agree	5	Somewhat Agree	Yes
22	I want to shop with a business that shares the same values as me	> Agree	6	Agree	N/A
23	It is important to me that a business is honest and authentic about its impacts on people and the planet	> Agree	7	Agree	N/A
24	I need to trust a business to shop with them	> Agree	6	Agree	N/A
25	I would stop shopping with a business if they acted contrary to my beliefs and values	> Agree	6	Agree	N/A
26	I wouldn't engage with Impact Data if I felt it wasn't fully transparent	> Agree	6	Agree	N/A
27	The video was clear and easy to understand	> Agree	6	Agree	N/A
28	Having watched the video, I understood the aim of the example website before I started to use it	> Agree	6	Agree	N/A
29	I found the example website easy to use when I interacted with it	> Agree	6	Agree	Yes
30	I found it was easy to understand the information presented on the example website	> Agree	6	Agree	Yes
31	"Responsible Rewards" (RR) enabled me to better see how I could make a difference as part of a wider group of people in a community	> Agree	6	Agree	Yes
32	I am more interested in Impact Data because I can see other people on RR are getting involved in it	> Agree	6	Agree	Yes
33	The rewards provided by RR are likely to make me more interested in the Impact Data	> Agree	6	Agree	Yes
34	Which of the following types of rewards is most likely to make you want to collect "Responsible Reward" points	Ranking	-	Gift Vouchers, Restaurant Vouchers, Product-related experiences, Cinema tickets, Other Experiences	N/A
35	Please tick any option that you agree with to complete this statement: I would choose a product with a higher RR score over a: cheaper equivalent, even if it wasn't as good as one with a lower score, because of a RR "Suggestion", in all cases	Ranking	-	Performance, Price, Score, Suggestions, Always, Never	N/A

36	RR made me think about things I hadn't previously considered when shopping for goods such as these	> Agree	5	Somewhat Agree	Yes	
37	Since using the website, I would now be more likely to choose a product with a higher score than my habitual or regular choice.	> Agree	5	Somewhat Agree	Yes	
38	After using RR I am more likely to care about Impact Data in all of my shopping choices going forward	> Agree	5	Somewhat Agree	Yes	
39	RR made it quick to locate the Impact Data about products I looked at	> Agree	6	Agree	Yes	
40	I feel I would have time to review Impact Data in the way RR presented it on the website	> Agree	5.5	Somewhat Agree	Yes	
41	The way RR presented the Impact Data required little effort to understand and consider	> Agree	5.5	Somewhat Agree	Yes	
42	I did NOT find the way RR presented the Impact Data to be overwhelming	> Agree	6	Agree	Yes	
43	The way RR presented the information was interesting and engaging	> Agree	6	Agree	Yes	
44	A solution such as RR would be effective in filtering the information down to what is important to me	> Agree	6	Agree	Yes	
45	RR Scores would influence my values in the areas of impact on people and the planet	> Agree	6	Agree	N/A	
46	The example comments I read by other RR users are likely to influence what I consider important in terms of impact on people and the planet	> Agree	5	Somewhat Agree	N/A	
47	Reviews and comments by other RR users would influence my perception of a business or product on the website	> Agree	5	Somewhat Agree	N/A	
48	Using a solution such as RR on my shopping websites would be a fun experience	> Agree	5	Somewhat Agree	N/A	
49	I would sign up to Responsible Rewards if it were available where I shop	Yes	40 / 44 -	90.91%	Agree	N/A
50	Please can you tell us a little about what you would NOT sign up to Responsible Rewards?	Supplementary	-			N/A
51	There are better ways to create interest in the impact of products on people and the planet than a rewards system such as Responsible Rewards	No	27 / 44 -	61.36%	Agree	N/A
52	Please can you tell us a little about what you think would be more effective?	Supplementary	-			N/A
53	Is there anything else you would like to share about your experience using our example website	Supplementary	-			N/A
54	Gender	Supplementary	-			N/A
55	Age range	Supplementary	-			N/A
56	Household income	Supplementary	-			N/A



