The impact of the use of gamification in Corporate Social Responsibility communication on Millennials

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ABSTRACT

In recent years, the application of gamified techniques to CSR communication was suggested by several scholars, but only a few studies were conducted to test its effectiveness and suitability (Coombs & Holladay, 2015; Maltseva, Fieseler, & Trittin-Ulbrich, 2019). This study employed an online experiment (N=245) to determine whether the presence of gamified techniques in visual and/or textual Facebook posts delivering CSR messages can influence the respondent for what concerns environmental attitude and pro-environmental behavioural intention. Moreover, the paper aims to investigate whether other prior conditions, such as familiarity with videogames and knowledge in the matter of sustainability, play a role in the development of positive behavioural and attitudinal reactions in response to the gamified CSR messages. Hence, considered the novelty and relevance of the topic, the gap in the literature and the little investigation on the potential of gamification in the field of CSR communication, the research question was formulated as follow: To what extent can gamification be used as an effective tool for CSR communication activities among Millennials?

Respondents were randomly assigned to one of the four experimental conditions, each of which included similar CSR content but differed both for the feature of the message (textual message with or without visual stimuli) and for the display of gamification techniques (present or absent). The present results suggest that gamification might not be an apt tool for CSR communication to an extent, supporting the claims of academic detractors of gamification applications in corporate communication and CSR activities. However, this study contributed to the expansion of the academical knowledge about the topic and contributed with relevant insight about a specific generational cohort (Millennials), the usage of social media in CSR communication (in this case Facebook) and the possible effects of moderator factors (namely *Familiarity with video games* and *Prior knowledge in matter of sustainability*). Despite the ambivalent outcomes, this study emphasized the demand for further empirical researches in the field of gamified CSR communications, adding specific directions for future studies.

KEYWORDS: *corporate social responsibility, CSR communication, gamification, Millennials, social media*

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1. Introduction

During her TED Talk in 2017, the social impact strategist Wendy Woods reflected on big corporates' managers and directors' approach to CSR activities, arguing as follow:

> "*I find that many businesspeople are hesitant to talk or even sometimes think about the business benefits of doing good. They somehow think it's going to negate the value of the benefits they're creating for society. Or that they'll be perceived as heartless or even mercenary. But we really do need to think differently. We need to think differently because the only way we're going to make substantial progress on the challenging problems of our time is for business to drive the solutions*". (Wood, 2017).

In her talk, in fact, she presents a fresh and innovative perspective about how executives should rethink their approach on CSR activities, namely the set of actions that a corporation displays in order to make a positive impact on society simultaneously minimizing the potential negative effects caused by itself (Pride & Ferrell, 2006). She suggested a more holistic approach, driving the organizations' efforts on a twofold goal: benefit the company and the society at large at the same time. As many other experts' contribution to the debate about CSR, Wood's speech shed light on the seek for new effective societal impacting measures within the business world. Nevertheless, it is not just a matter of strategical planning of concrete CSR measures. Indeed, the dilemma shifts on a communication level too: both non-profit and for-profit companies are constantly struggling with finding new and effective strategies to communicate corporate social responsibility to stakeholders in an effective and impactful way. As a matter of fact, persuading people to delve into the topic of sustainability and consequently to actively engage in practical behaviours, nowadays represents more than ever a great challenge on many levels (Coombs & Holladay, 2015). One fundamental obstacle towards the stakeholder engagement aimed by most corporations is represented by the risk of arousing negative feelings towards CSR campaigns and then leading to a boomerang effect on the brand reputation (Rim & Kim, 2016; Skarmeas & Leonidou, 2013). On the one hand, brands are increasingly aware of the importance of a powerful communication strategy to support awareness. On the other hand, they are also conscious about the fact that if their communication is perceived as a business selling point, the firm's commitment to the cause will be devalued because seen as unauthentic (Bhattacharya & Sen, 2004). This strategic *impasse* has been described by Coombs and Holladay (2012) with the term "CSR promotional communication dilemma" and represents one of the most difficult challenges that many public

relation (PR) and communication managers have to face in their practice (Seiffert-Brockmann, Weitzl & Henriks, 2018).

If traditionally the communication channels deputed to CSR content used to be the institutional means such as websites editorials or interviews (Coombs & Holladay, 2015), several scholars have noticed a shift of CSR communication on social media (Lyon & Montgomery, 2013; Morsing & Schultz, 2006), where it occurs in a more engaging and collective form (Illia, Romenti, Rodríguez-Cánovas, Murtarelli & Carroll, 2017; Glozer & Hibbert, 2017). Although the nature of the medium, enabling a more fluid, soft-sell and appealing approach, some researchers warned about possible pitfalls of delivering CSR communications on social media such as the banalization of the message (de Bakker, 2015) or an online engagement not followed by a concrete action (Morozov, 2009). Practitioners' awareness of the benefits and downsides of the current strategies applied to CSR communication raises even more doubts about their efficacy in delivering the wanted message and open the debate on possible valid alternatives.

As highlighted by several studies, the lack of effective strategies of stakeholder's engagement in this field leads practitioners to explore new communication approaches (Coombs and Holladay, 2015; Maltseva, Fieseler, & Trittin-Ulbrich, 2019). For instance, a growing number of marketers are recently focusing their strategies on the application of game mechanisms in the design of corporate communication messages regarding social and environmental concerns (Coombs & Holladay, 2015; Freudmann & Bakamitsos, 2014; Landers, 2014). In fact, some studies revealed the possible suitability of gamification to address CSR-related topics through a low-key approach fostering a higher degree of identification (Freudmann & Bakamitsos, 2014).

In spite of the increasing attention that gamification earned in recent times, we noticed a scarcity of studies investigating the effects of gamified CSR messages in comparison to traditional ones. Therefore, considered the novelty and relevance of the topic, the gap in the literature and the unexplored potential of gamification in the field of CSR communication, this thesis aims to further investigate this topic in respect of the impact of this approach on Millennials. In line with the motivations stated above, the research question has been formulated as follow*:*

> ***RQ**: To what extent can gamification be used as an effective tool for CSR communication activities among Millennials*?

In order to answer the research question, a quantitative study was designed in the form of an online experiment in which a fictional CSR campaign was introduced, paired with randomly assigned experimental conditions represented by fictious Facebook posts. The aforementioned conditions presented the same topic (reforestation), but they differed from each other for the incorporation of gamification techniques or not and for the presence of images in addition to the textual content. This feature of the experimental design links to the first main purpose of the study, namely assessing the influence of the presence of images and gamification on the viewer. Additionally, the paper aims to investigate whether other factors like familiarity with videogames and prior knowledge in the matter of sustainability play a role in the development of positive behavioural and attitudinal reactions in response to the gamified CSR messages.

1.1 Academic relevance

In recent years, the debate on the effectiveness of gamified techniques and its application in the CSR communication field involved both practitioners and researchers. Yet, not many investigations have been conducted on the possible applications and outcomes of this practice. To our knowledge, Maltseva's et al (2018) work represents the first empirical study exploring the possible application of gamification on CSR communication. In fact, the topic of gamification has been recently studied in various fields, with an exception for the deputed topic of the current paper. Among the researches conducted on several applications of gamified techniques, we can mention for example the fields of learning (Landers, 2014), marketing and advertising (Yang, Asaad & Dwivedi, 2017; Terlutter & Capella, 2013), non-profit context (Freudmann & Bakamitsos, 2014) or recruitment and human resources (Woźniak, 2015). Nevertheless, some domains appear rather unexplored, at least from a theoretical point of view. For instance, as noticed by Seiffert and Nothhaft (2015), gamification is not yet included in the discussion about a possible application in public relations and strategic communication research. A comparable scarcity of academic studies has been observed for what concerns sustainability and Corporate Social Responsibility (Maltseva et al., 2019). In this view, this paper aims to address this gap in the existing literature by responding to some specific calls for future researches made by previous academics. Namely, this experiment aimed to assess whether gamified communicative style might have more impact on some segment of an audience than on others, the role of the contextualization of the gamified message within a CSR communication strategy and the possible moderation effect that some previous conditions might have on the audience's response to the message. Hence, the

academic relevance of this thesis is represented by the novelty of the topic, empirical design of the research model and the studied interactions by complementing existing studies and adding scientific value to the current literature on gamification and CSR.

1.2 Societal and practical relevance

The present study also intends to offer social relevance in several ways. Fist, given that this study includes the factors regarding the alternative presence of gamification as well as the occurrence of images, it could add more insights on the response of stakeholders to CSR communication. Moreover, the possible moderator effect of other factors (namely respondent's prior knowledge in matter of sustainability and their familiarity with videogames) included in the study, provides a deeper understanding on how the perception of gamified CSR messages might lead to different outcomes when acting in synergy with other pre-existing factors.

As suggested by previous studies, applications of gamified techniques in the field of CSR communication could lead to positive societal and practical outcomes. Among the others, it has been observed how gamification might be a useful tool to overcome indifference and scepticism towards CSR activities in stakeholders and then manifest itself in concrete actions (Deterding, 2014; Hamari, 2013; Huotari & Hamari, 2017). Secondly, it has been studied that it can help minimize the risk of stakeholder resentment and then, from a managerial point of view, mitigate the boomerang effect and/or the *CSR promotional communication dilemma* (Coombs and Holladay, 2015). Third, as highlighted by the existing literature, by leveraging on the human ludic drive, gamification can effectively contribute educating people on CSR themes and lead to behavioural and attitudinal changes in peoples' mindset (Roth, Schneckenberg, & Tsai, 2015; Kolb & Kolb, 2010). Besides, gamification fosters identification with "serious" topics making them more relatable (Freudmann & Bakamitsos, 2014) as well as it gives the opportunity to safely and playfully interact with situations that would be otherwise hardly experienceable (Mohl, 2014). Ultimately, on a corporate perspective, a more conscious and effective implementation of gamified techniques and playful design could possibly positively change people's perception of CSR activities, consequently enhancing the brand's reputation and image.

To sum up, such research might help marketers, educators and researchers to understand the extent of the suitability of gamified techniques applied to CSR content and possible positive behavioural and attitudinal reactions in stakeholders.

2. Theory and previous research

2.1 Gamification

2.1.1 Definition and origins of the gamification concept

The term gamification has been used for the first time in 2002 by the British consultant Nick Pelling, who defined it as the "use of a game-like accelerated user interface in the design of applications for electronic transactions, to make them more enjoyable and faster" (Coccoli, Iacono, & Vercelli, 2015, p. 76). The concept, however, started gaining popularity only from 2010 and begun to be largely implied just in the last few years. Nevertheless, a clear definition is still hard to detect in the current literature. Broadly accepted by practitioners and academia, is the definition of gamification as "the use of game elements and mechanics in non-game contexts" (Seaborn and Fels, 2015, p. 16). Despite the general classification, the theory about this topic appears to split into two different schools of thought (Deterding, Dixon, Khaled & Nacke, 2011): one focused on the outcomes that the practice of video games can have on our daily life activities and habits (e.g., Deterding et al., 2011) and the other highlighting the user engagement and experience that this technique can convey (e.g., Codish & Ravid, 2014).

Moreover, it is important to specify that the term gamification relates to games, rather than playing (or playfulness), since "play" can be conceived of as the wider, laxer category, containing "games" and other types of endeavours (Salen, Tekinbaş & Zimmerman, 2004). The main distinction between the terms "play" and "game", which in game studies, is usually linked to Caillois' (2001) concept of *paidia* and *ludus* is that the first refers to an unstructured, improvised and spontaneous activity whereas, the latter describes a structured endeavour characterized by predetermined rules and goals (Caillois, 2001). Furthermore, "playfulness" mostly indicates the pragmatic and behavioral attributes of playing (paidia), likewise "gamefulness" denotes the traits of gaming (ludus), restricting a distinct set of phenomena. More extensively, within the domain of gamification, Deterding et al. (2011) present a further clarification, circumstantiating the terms *gameful interaction* (artifacts affording that quality), and *gameful design* (designing with the aim of gamefulness, typically by using game design elements).

2.1.2 Constituent mechanics of gamification

Gamified contents display game elements (Maltseva, Fieseler & Trittin-Ulbrich, 2019; Seiffert-Brockmann, Weitzl & Henriks, 2018; Codish & Ravid, 2014) and often easily overlap with proper games since features and mechanics are borrowed from the gaming context (Deterding et al., 2011). Prior research, both regarding all elements typical of games as well as

studies exclusively on the elements that are unique or specific to games, has revealed to be restricting. As a matter of fact, Deterding et al. (2011) suggest to constrain "gamification" mechanics "to the description of elements that are characteristic to games – elements that are found in most (but not necessarily all) games, readily associated with games, and found to play a significant role in gameplay" (p.11).

A valid overview of game design features proceeds by grouping the main functions into three pillars: feelings that players experience in relation to the gamified content, mechanics encompassing rules, goals and rewards; player's embodiment of the game mechanics (Robson, Plangger, Kietzmann, McCarthy & Pitt, 2015). As for game elements, a general classification is provided by Werbach and Hunter (2012), who holds that the constituent elements of a game can be reconducted into four categories: points, levels, badges and leader boards. In brief, points are implied to quantify the ability of the player, whereas levels are used to track the progression and achievements of the player. Badges are employed in two situations: after the reach of a specific amount of points or after the accomplishments of specific tasks (Werbach & Hunter, 2012). As for the leader boards, they represent one of the most influential game elements on the player's psychology as they can produce powerful yet contrasting outcomes: on the one hand, they can foster engagement and competition (Werbach & Hunter, 2012). On the other hand, some scholars highlighted that they could also discourage participants from keeping on playing (Kumar, 2013). A further specification in respect of the discourse about game design elements, is provided by Deterding et al. (2011) who proposes a distinction into four additional categories: *game interface design patterns,* in other words, common interaction design components and solutions for specific challenges, such as badges, leaderboards, levels; *game design patterns and mechanics*, frequently reoccurring aspects of the design of a game that relates to gameplay (for example time constraint, limited resources, turns); or, lastly, *game design principles and heuristics*, which consist in the set of evaluative guidelines to face a design problem or examine a certain design result (for instance enduring play, clear goals, variety of game styles).

To expand the discussion about what can be defined as a "game element", the work of Reeves & Read (2009) offers an additional, detailed taxonomy of game constituent, namely competition under rules that are overt and prescribed; three-dimensional environments; feedback; reputations, ranks, and levels; narrative context; marketplaces and economies; teams; matching communication systems that can be easily constructed; self-representation with avatars; time pressure. Although, in respect of this classification, Deterding et al. (2011) point out that "each of these elements can be found outside of games, and taken in isolation,

none of them would be readily identified as 'gameful', let alone game specific" (p. 11) and, as a consequence, that the definition of what can be considered a game element is rather more complex and faded. In fact, there is a significant discrepancy between various game features according to genres, source of fruition (e.g., digital versus non-digital) and role perception (designer or user).

Gamification can draw patterns also from game dynamics; in other words, the abstract drives, which constitute the implicit structure of the game (Salcu & Acatrinei, 2013). Werbach and Hunter (2012) identified five dynamics: *constraints*, namely the conceptual rules that need to be followed in order to play a game and achieve goals; *emotions*, in essence, feelings which can determine the engagement of a player; *narrative*, coherent storytelling designed to catch and maintain the user's attention; *progression*: basically the challenge to accomplish a mission through gradual steps; *relationship*: various forms of social interaction intercurrent during the gaming experience.

Nevertheless, the theory points out how features, elements and mechanics of gaming are alternatively used and combined in gamification applications, in order to achieve specific goals in various fields, as outlined in the following section.

2.1.3 Value of gamification

Recently, gamified solutions have been applied to diversified subjects and purposes. The current literature reflects its broad spectrum of appliances, ranging from the varied fields, such as learning (Kapp, 2012; Landers, 2014), marketing (Yang, Asaad & Dwivedi, 2017; Salcu & Acatrinei, 2013), non-profit context (Freudmann & Bakamitsos, 2014), advertising (Terlutter and Capella, 2013) recruitment and human resources (Woźniak, 2015; Simpson, & Jenkins, 2015), tourism (Xu, Weber & Buhalis, 2013) or health and wellbeing (Johnson, Deterding, Kuhn, Staneva, Stoyanov & Hides, 2016).

Generally, it is agreed among researchers that gamification can positively affect behavioural and attitudinal reactions. A variety of papers detect the possible benefits of this practice, suggesting that gamification can boost productivity as well as contribute to social bonding (Seaborn & Fels, 2015) notably in work environments (Zichermann and Linder, 2013), not only for what concerns employees' productivity but also leading to an improvement in the general efficiency of the company (Maan, 2013). Moreover, other researches present results confirming the speculations on the rise of audience awareness and establishment of trust through gamification (Gordon & Baldwin-Philippi, 2014), leading to an increment in user

engagement with products and services (Ašeriškis & Damaševičius, 2014; Hamari, 2015; Hamari, 2017).

There is also an appreciable agreement among scholars that gamification is an effective means to foster motivation for learning (Seaborn & Fels, 2015) and more specifically, several studies suggest that gamification positively affects students' engagement and motivation through school gamified activities (e.g., da Rocha Seixas, Gomes, & de Melo Filho, 2016; Kuo & Chuang, 2016).

From a corporate perspective, organizational gamification takes its basis from computer games, integrating them within the business process (Maan, 2013). By rising customer and employee commitment and motivation, gamification can support companies to accomplish business needs such as driving profits, motivating employees, fostering innovation; increasing loyalty, improving efficiency and quality of service, keeping high standards of competitiveness, and meeting customer expectations (Rauch, 2013). Besides, more and more digital companies are now implying gamification in their e-commerce websites, with the aim of, for instance, increasing conversions, fostering brand loyalty, or generating new content (Bilgihan, Okumus, Nusair, & Bujisic, 2014). As a result of the abundance of possible benefits derived from the application of gamified techniques to their business models, organizations are nowadays increasingly applying gamification at all levels in their enterprises (Dyer, 2015). Although this approach can generate some scepticism as it might be perceived as recreational, game thinking can offer further great applications to companies (Yamabe & Nakajima, 2013), allowing the viewer to think outside the box and foster dedication to the task assigned (Leadbeater, 2009).

Finally, gamification has proven to constitute a particularly effective strategy for the engagement of the "millennials" generation for several reasons. Firstly, as observed by McGonigal (2011), this generation has, on average, spent 10,000 hours in gaming activities before turning 21, roughly the same amount of time they have spent in school. Secondly, gaming features appear to be more appealing to this specific generation due to the natural inclination for "teamwork, experiential activities, structure and the use of technology" (Oblinger,2004; as cited by Dyer, 2015). A more specific view and analysis of the characteristics of this generation will be included in the methodology section.

2.2 Corporate Social Responsibility

2.2.1 General introduction to CSR

Corporate Social Responsibility (CSR) and community relations arose as the deputed area of corporate communication involving CSR communications initiatives, aiming to provide

evidence of the organization's long-term commitment to environmental and social issues (Cornelissen, 2017). Due to the debatable nature of this topic, some scholars proposed to consider CSR as a paradigm which can be adapted to the vision of the stakeholder which defines it, since it takes its basis from the social contract intercurrent between the organization and the stakeholder taken into account (Bowd, Jones & Tench 2005). Numerous definitions of the concept of CSR have been elaborated in different studies throughout the years, but overall, there is a general agreement in identifying it in the set of actions that a corporation displays in order to make a positive impact on society simultaneously minimizing the potential negative effects caused by itself (Pride & Ferrell, 2006). Moreover, Elkington's (1998) description of CSR - known as 'The triple bottom line' - highlights three pillars of Corporate Social Responsibility: 'People' as for all the internal and external social initiative; 'Planet', addressing the inclusion of environmental responsibilities in the organizational management; 'Profit' as the preliminary requirement that any company needs to fulfill any other corporate duty (e.g., social or environmental obligations).

As shown in the evolutionary study on the construct of CSR conducted by Carroll (1999), CSR has an extended and varied history, but it has been increasingly object of academic attention and study from the 70s onwards.

CSR studies are characterized by not only a plethora of theories but also by the proliferation of different approaches, which are considered by many scholars as contentious, convoluted and ambiguous. The work of Garriga and Melé (2004), provides a systematic overview of the main current CSR theories basing their analysis on four aspects that they found to be distinctive of these theoretical models: "(1) meeting economic objectives that produce long-term profits, (2) using business power in a responsible way, (3) integrating social demands and (4) contributing to a good society by doing what is ethically correct" (p.65). As a result, four types of CSR theories can be identified in the existing literature: instrumental, political, integrative and value theories (Garriga & Melé, 2004).

2.2.2 CSR communication and stakeholder engagement

It has been noticed that effectively communicating CSR content represents a great challenge for organizations, especially for what concerns presenting their initiative to sceptical stakeholders (Coombs & Holladay, 2015). In fact, some studies revealed the centrality of CSR in the discourse about corporate reputation (Fombrun & Van Riel, 2004), showing the positive influence of CSR activities on corporate reputation assessments. As a matter of fact, a research

conducted by Reputation Institute shows that over 40% of a brand's reputation can be attributed to CSR (Smith, 2012).

More in general, it has been argued that CSR constitutes one aspect of the brand awareness and identity, since "If stakeholders accept those identity messages and see the socially responsible part of themselves in the corporation, they may be more inclined to favourably perceive the reputation and identify with the corporation" (Coombs & Holladay, 2015, p.132). The existing literature on CSR communication reserves a central position to the group of actors that are affected by the organization's actions and vice versa. Namely, "any group or individual who can affect or is affected by the achievements of an organization's objectives" is defined as a stakeholder, according to the definition provided by Cornelissen (2017, p. 295). Besides, as expressed in the stakeholder engagement theory (Atkin & Skitmore, 2008), scholarship addresses to stakeholder engagement as the process of creating collaborative interactions based on trust among individuals, institution or organization with the aim of achieving different objectives with a common effort (Andriof, Waddock, Husted, & Rahman, 2017)

Due to the overlap of business and societal interest in the field of CSR, political science covered a central role in the discussion on stakeholder engagement. In fact, two types of stakeholder engagement can be identified in the theory: moral and ethical strategic engagement (Glozer & Hibbert, 2017). As argued by Noland and Phillips (2010), the first refers to a communicative effort aimed at enabling consensus and preventing power disparities whereas the second embodies the managerial approach to stakeholder engagement, which seeks for an open dialogue with stakeholders, in which engagement is not threatened by corporate strategic interests.

In spite of this cooperative side of CSR communication, CSR has also been defined by Sen, Bhattacharya, and Korschun (2006) as a 'double-edged sword' due to the paradoxical relationship intercurring with stakeholders: they are interested in knowing more about the engagement of the company in a societal and ecological matter, but they easily become hostile when they perceive the CSR engagement as a mere call for attention and reputational benefits (Bhattacharya & Sen, 2004). This conflictual circle has been named as *CSR promotional communication dilemma* (Coombs & Holladay, 2015). It represents one of the major issues that corporations face in their PR management and strategic communication (Seiffert-Brockmann et al., 2018). As a matter of fact, the current literature reveals the centrality of stakeholder engagement (e.g., Johnston, 2014; McKie and Willis, 2012; Motion, 2005) particularly in the

matter of CSR (Greenwood, 2007; Morsing and Schultz, 2006) given that it is generally perceived "as corporate responsibility in action" (Greenwood, 2007, p.315).

In the past, CSR communication activities were introduced by the company and in offline settings (Glozer & Hibbert, 2017). Notably, CSR communication has been inscribed in the process of foreseeing stakeholders' outlooks to provide correct and trustworthy information about several concerns related to, for example, economic, social and environmental issues (Podnar, 2008). In this respect, the usual channels deputed to such type of communication have been mainly CSR reports, public relations activities and website content (Glozer & Hibbert, 2017). However, thanks to the wider range of possibilities offered by the expansion of the information and communication technology (ICT) field, CSR communication is now delivered through social media additionally (Birth, Illia, Lurati & Zamparini, 2008), where the stakeholders are involved in a broader process of collaboration and co-creation of the CSR content through a process of empowerment and connection (Bhattacharya, Sen & Korschun, 2011).

2.2.3 Communication channels for CSR information

In order to drive stakeholder engagement in the debate about CSR, communication models deriving from participatory democracy seem the most suitable option for the purposes of the message (Cornelissen, 2017). Nevertheless, it has been noticed that overall, CSR communication strategies are designed either on strategic persuasion models (Cornelissen, 2017) or on liberal democratic models used in a governance context (Deetz, 2007). According to Deetz (2007), the misfit of the communication model might lie part of the stakeholders' scepticism and mistrust towards the genuineness of the corporate's actions and communications about CSR. Moreover, as shown by KPMG's (2017) report, organizations usually don't implement strategies to enclose CSR within their management since they rely mostly on media and PR strategies to convey CSR activities.

As argued by Schults, Castello & Morsing (2013), CSR should be considered as a communicative activity, even though the existing literature underestimates the communication element displayed. As for the channels deputed to engage stakeholders and raise awareness in matters of CSR issues, Coombs and Holladay (2015) argue that both controlled media channels (e.g., website, editorials, interviews) and uncontrolled media channels (e.g., news releases, information retargeted on social media) suit the purpose. Nevertheless, recent studies have explored the benefits of non-traditional media as a medium for CSR communication. To start with, Lyon and Montgomery (2013) present social media as a

powerful medium which "helps empower users and activists to detect and publish greenwashing and other misleading communication practices" (Saxton, Gómez, Ngoh, Lin & Dietrich, 2019, p.359). Moreover, Coombs and Holladay (2015) identify in the lower cost and in the chance to adopt "soft-sell" techniques the strengths of this medium: indeed, they affirm that "the CSR discussion can be more subtle and less direct than paid traditional advertising, thereby overcoming two of the reasons CSR communication can boomerang" (Coombs & Holladay, 2015, p.129). On the same line, it has been observed that the mediation of social media offers an appealing and more fluid type form of communication to stakeholders, widening the range of audience and reach of the message (Morsing & Schultz, 2006). This new approach aims to substitute the traditional informative and normative style deputed to CSR with a more engaging and collective one: particularly within digital contexts, the collaborative and interactive approaches to the creation and spread of CSR messages take its basis in a two-way communication effort (Illia, Romenti, Rodríguez-Cánovas, Murtarelli & Carroll, 2017). In fact, corporates are increasingly exploring new forms of engagement strategies in which stakeholders can get the chance to participate in the process, both from a consumer and a CSR perspective (Glozer & Hibbert, 2017). For instance, some organizations adopted a new model of CSR reporting redaction in which the internal managers are in charge of complementing the traditional form of CSR activities with social media related ones: for example, Starbucks has implemented this new model, through a forum called 'My Starbucks Idea', an online crowd-sourcing platform to boost customer satisfaction and interaction with the brand's CSR activities (Hossain & Islam, 2015). In this respect, it is claimed that these type of initiatives on social media "open up more dialogical and dialectical 'arenas of citizenship', online spaces wherein CSR knowledge is cultivated, sustained and challenged" (Whelan, Moon, & Grant, 2013; as cited in Glozer & Hibbert, 2017, p.6).

Even though the relevance of the usage of social media in CSR communication has been observed extensively in the existing literature, nevertheless, little research has been conducted on the influence of the type of social media platform in relation to the perception of the CSR message. Besides, as outlined by Maltseva et al. (2019), it could be relevant to investigate the appropriateness of a certain type of platform in relation to a specific audience in the gamified CSR context. Thus, this leads to the following hypothesis. Image-based platforms, are argued in literature as more powerful educational medium in comparison to text-based platforms like for instance Twitter, on which a lower degree of interactivity and engagement in CSR communication has been found (Etter, 2013; Elving, Golob, Nielsen, Thomsen, Schultz, Podnar & Colleoni, 2013). Therefore, we argue that when considering the formation of environmental

attitude among Millennials, visual communication has a stronger impact in the process of effectively delivering a CSR message. This leads to the following hypothesis:

H1a: A *CSR message presented with text and image, will affect environmental attitude among Millennials more positively compared to a CSR message presented just with text.*

As shown in several studies about the picture-based persuasion process (e.g. Miniard, Bhatla, Lord, Dickson, & Unnava, 1991; Seo, Dillard & Shen, 2013), it has been acknowledged the impact of the presence of images in the process of internalizing a message and developing a behaviour intention. Therefore, we argue that, when considering the formation of environmental behaviour intention among Millennials, image-based platform has a stronger impact than text-based platforms, as expressed in the second hypothesis proposed:

H1b: A *CSR message presented with text and image, will affect environmental behaviour intention among Millennials more positively compared to a CSR message presented just with text.*

2.2.4 Gamification techniques applied to the CSR context

Among the current literature, Coombs and Holladay's (2015) work appears to be the first study investigating the possible suitability of gamification to CSR communication. In their article, they suggest that gamified CSR could foster stakeholder engagement in pro-environmental or pro-social by delivering low-key messages in a way that could possibly overcome the already mentioned CSR promotional communication dilemma. As shown by Freudmann and Bakamitsos (2014), gamification can ease the approach and assimilation of difficult and 'serious' issues such as the main environmental or societal issues addressed by CSR communication.

As a matter of fact, many scholars have pointed out the benefits of incorporating playful designs in CSR communication strategy: to start with, appealing to the ludic nature of human, gamified content triggers the learning sphere and encourages learning stances (Roth, Schneckenberg & Tsai, 2015). Besides, the game mechanism of connecting with alternative realities, in a context that engages the learning process, enables the reception of experiences that otherwise are hardly relatable in real life (Michael & Chen, 2006; Statler, Roos, & Victor, 2009). According to Maltseva, et al. (2019), this aspect can represent a great potential form a CSR communication point of view, since different perspectives and realities are presented to stakeholders in a safe and entertaining way.

Some of the most meaningful examples of gamified CSR in relation to social issues are the Kraft's "Two-Minute Drill", which can be mentioned as a successful case of stakeholder

engagement since "People were motivated to visit Kraft's Facebook page for hunger relief where they encountered Kraft's CSR message about fighting hunger and engaged in the CSR effort by playing the game" (Coombs & Holladay, 2015, p. 129). Also, the remarkable Nike's initiative launched in 2014 in Boston can be inscribed in pro-social engagement CSR communication: for each mile ran by customers on treadmills in Nike stores or uploaded in the brand's application, the company donated to Challenged Athletes Foundation (Nike, 2014). Moreover, as for the environment-related campaigns, few examples appear relevant: in "m.Paani" an inventive loyalty program is displayed to solve the clean-water issue in developing countries; "Pain Squad" helps young cancer patients to track pain as a game; "OPower" raises awareness about energy consumption (Khan, Yadav, Beena & Kumar, 2019).

Even though communication practitioners are already extensively displaying gamification techniques in the design of their strategies (Vesa, Hamari, Harviainen & Warmelink, 2017), little research about how the effects of gamification on intentions, attitudes and behaviour have been conducted so far (Maltseva et al., 2019), especially in relation to CSR and sustainability-related topics. Therefore, acknowledged the lack of researches on the topic, the following hypotheses have been elaborated, predicting that the presence of gamification in a CSR message will affect environmental attitude and environmental behavioural intention among Millennials more positively compared to a message without gamification in it. The hypotheses had been formulated as follow:

H2a: A *CSR message with gamification information in it, will affect environmental attitude among Millennials more positively compared to a CSR message without gamification in it.*

H2b: A *CSR message with gamification information in it, will affect environmental behavioural intention among Millennials more positively compared to a CSR message without gamification in it.*

2.3 Gaming and player behaviour

For the purpose of the research, it appears relevant to discuss the major theories about playing motivation and the type of players identified by the scholarship so far. To begin with, Bartle's (1996) theoretical framework identifies four types of players (killers, achievers, explorers and socializers) and, in spite the fact that many studies throughout the years relied on that scheme, recently some review of the model has been proposed (e.g., Zichermann & Cunningham, 2011; Deterding et al., 2011). As for the heterogeneous set of motivations that characterize the willingness of individuals of playing video games, a plethora of study has been

conducted in order to outline this aspect (e.g Yee, 2005; Canossa & Drachen, 2009; Kallio, Mayra & Kaipainen, 2010; Kim, 2012).

Considering the nature and the psychology of video game players, the current literature indicates that the motivations and personalities of these subjects can substantially differ from non-players. In respect of gamification, as suggested by Maltseva et al. (2019), an innate acquaintance and liking for gaming can affect the perception of the message delivered through gamified techniques. Therefore, we assume that the familiarity with videogames influences the reception and impact of the CSR message on the receiver, constituting a moderator effect. As a matter of fact, it can be predicted that such a moderator will affect the environmental attitude and the pro-environmental behavioural intention among Millennials. Based on the above arguments, it is expected that familiarity of the subject with videogames will have a moderating effect on people's environmental attitude, causing a higher impact on individuals who play videogames rather than on those who don't play it. Which leads to the following hypothesis:

H3a: *The impact of gamified message on people's environmental attitude will be higher for people who play videogames than people who do not play video games.*

Therefore, based on previous findings, it is predicted that familiarity of the subject with videogames will have a moderating effect on people's affect environmental behavioural intention, causing a higher impact on people who play videogames rather than on people who don't play it. Hence, this gives rise to the next hypothesis:

H3b: *The impact of gamified message on people's* environmental *behavioural intention will be higher for people who play videogames than people who do not play video games.*

2.4 Engagement in sustainability-related topic

The overall rise of awareness about social and environmental issues appears to be even more compelling with regard to millennials, as shown for example by the study of Winograd and Hais (2014) which reports a decrease of consumeristic attitude in contrast with an increase of concern for the environment among American millennials. Nevertheless, scholars disagree about the distinctive features of this generation: according to Head (2013), for example, among Millennials, the pursuit of personal comfort and convenience prevails on the willingness of changing behaviour and purchase habits. Therefore, as suggested by Maltseva et al. (2019), it appears relevant to make a distinction between those millennials which are involved in sustainability-related topics and those who are not, in order to assess the effectiveness of gamified CSR messages on the former group. Therefore, we presume that good prior

knowledge in the matter of sustainability impacts the reception and resonance of the CSR message on the respondents, constituting the second moderator of the design. As a matter of fact, it can be predicted that a moderation effect will be caused by the sustainability prior knowledge on peoples' environmental attitude, causing a higher impact on people who has such a background rather than on people who doesn't. Thus, the following hypothesis is proposed:

H4a: *The impact of gamified CSR message on people's environmental attitude will be higher for people who have good prior knowledge of sustainability than people that do not have much prior knowledge.*

Furthermore, we predict that the moderator will similarly impact on the environmental behavioural intention of respondents, which leads to the last hypothesis:

H4b: *The impact of gamified CSR message on environmental behavioural intention will be higher for people who have good prior knowledge of sustainability than people that don't have much prior knowledge.*

2.5 Conceptual model

The conceptual model shown below presents the aforementioned hypotheses and the relationships between the theoretical variables.

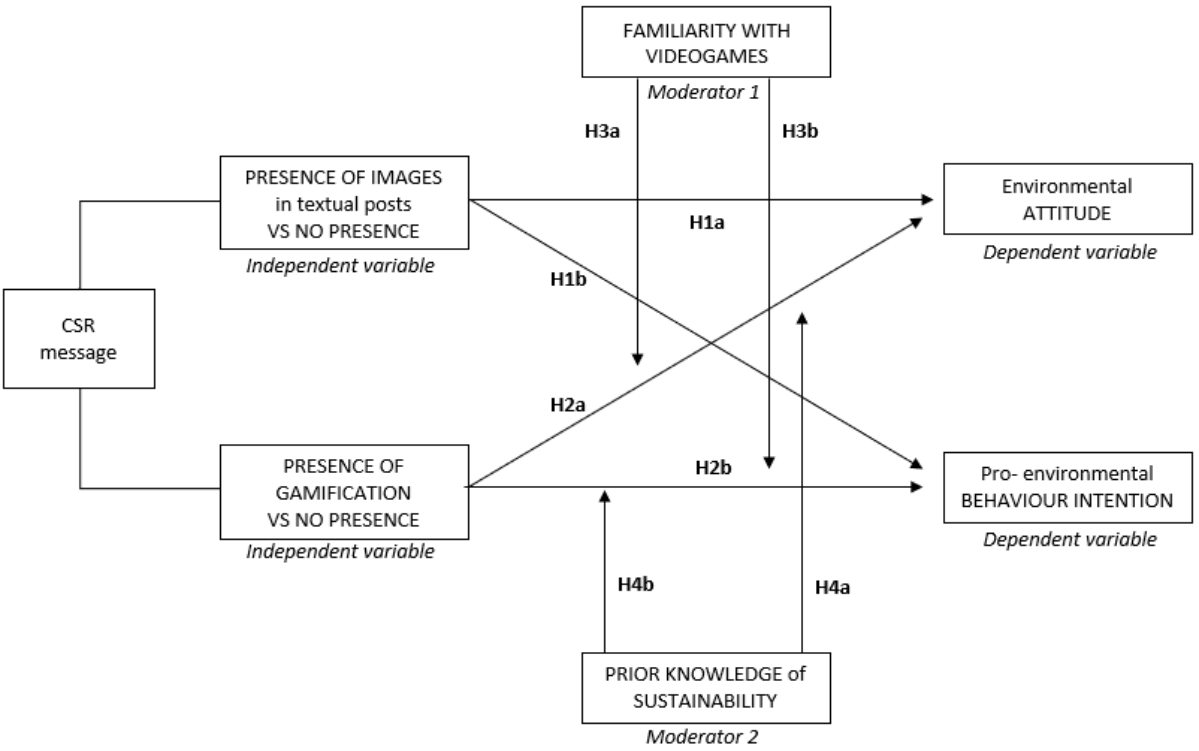

Image 2.5 Conceptual model overview

Chapter 3: Methodology

3.1 Research method

To answer the research question, a quantitative research method has been chosen since it enables "to discover new knowledge by simplifying complexities in settings that tend to be more contrived" (O'Dwyer & Bernauer, 2014, p. 44). Besides, a qualitative analysis not only considers theories in order to ground possible explanations of the fact under analysis (Fallon, 2016) but also provides a clear and objective framework to assess and justify theories or hypotheses about a certain aspect (O'Dwyer & Bernauer, 2014; Babbie, 2017).

Notably, an experimental design in the form of an online survey has been implied for this research for the following reasons: firstly, it allows the researcher to investigate the effect of an intervention or treatment on some characteristic or outcome of a specific topic (O'Dwyer & Bernauer, 2014). Secondly, given that the subject of this study is relatively limited and well defined, it can be considered then particularly suited for experiments, as explained by Babbie (2017). Lastly, taking into consideration the explanatory aim of the research, focused on providing the evidence for causal relationships, experiment appeared the most appropriate research design method (Neuman 2014), since it enables the researcher to test the effect of different stimuli and communication styles in a causal relationship (Avery, Lariscy, Kim & Hocke, 2010). In respect of the reliability, meaning the trustworthiness of the results (Neuman, 2014), the consistency of repeated outcomes under analogue conditions will be, first of all, guaranteed by the chosen research method. In fact, the external reliability will be enhanced thanks to the online experiment, providing a more familiar setting, coherent with the online nature of the material provided. Furthermore, online experiments are easy to replicate and control for further analysis or research.

The designed experiment aims to investigate whether the presence of gamified techniques in visual and/or textual Facebook posts delivering CSR messages can influence the respondent for what concerns environmental attitude and pro-environmental behavioral intention. More specifically, the experiment entails a factorial 2x2 between-subjects design and it is based on the same fictional CSR campaign on Facebook. By employing a factorial design, the main outcomes of the treatment can be not only discovered but also observed in the light of the interaction effects originated by the impact of the two variables combined (Neuman, 2014).

A total of four experimental conditions has been included and assigned randomly to respondents; hence, each respondent received just one condition. The experiment is based on four types of stimuli, all including similar CSR content but differing both for the feature of the

message (textual message with or without visual stimuli) and for the display of gamification techniques (present or absent).

Table 3.1.1 – Research conditions

		Type of content	
		Text + Image	Text only
Gamification	Yes	Condition 1	Condition 3
	No	Condition 2	Condition 4

3.2 Sample and sampling method

The present study aims to investigate the effectiveness of gamified CSR messages among "Millennials"; thus, the participants were selected only if belonging to the range of age between 20 and 40 years old as of 2020, regardless of gender and nationality. An extensive overview of the features that characterise this generation will be provided in the next section.

As for the sampling method, a non-probability convenience sample has been implied and the risk of producing non-representative sample derived from the choice of this method (Neuman, 2014) has been minimized thanks to the use of Amazon Mechanical Turk. This tool consists of a crowdsourcing platform on which the respondent is rewarded for filling the survey with a small monetary recompense. Among academic scholars, this tool is overall regard as a legitimate and valid supplier of data (Lowry, D'Arcy, Hammer & Moody 2016) and, as argued by Buhrmester, Kwang and Gosling (2011) it provides data which are as reliable as the ones provided by traditional methods. While convenience sampling is considered a possible source of less generalizable results compared to other sampling methods (Neuman, 2014), the utilization of Amazon Mechanical Turk for recruitment seeks to increase the external validity through the enhancement of a more diverse and broad variety of respondents.

As required from the methodological guidelines, this study aimed to collect 200 respondents, 50 respondents for each condition (Janssen & Verboord, 2019-2020). The final sample consists of 245 respondents. As a matter of fact, the original raw data set, underwent a data reduction procedure in which firstly the survey completion rate has been checked and, after having assessed that all the respondents filled 100% of the survey, the duration time of the survey has been checked. In other words, all the data of respondents who completed the survey in less than 2 minutes, have been cleared. Hence, all the respondents who declared to

be born before 1980 or after 2000 and thus, not meeting the age criteria, have been left out by the sample.

The following number of participants per condition were collected: text and image * gamification *N* = 61; text and image *non-gamification *N* = 54; only text * gamification *N* = 65; only text * non-gamification *N* = 65 (see the table below for a clear overview). The uneven distribution of respondent to each condition can be explained both by the automatized randomization occurred in the Amazon mechanical Turk distribution and due to the data reduction process.

The experiment was distributed through Amazon Mechanical Turk platform and reached the requested number of 250 respondents in one day (April 18th, 2020), a higher number of respondents completed the task and when meeting the abovementioned requirements, has been included in the final dataset.

3.2.1 Millennials

The definition of "Millennials" as a generation is a subject of debate among scholarship. Nevertheless, establishing a clear overview on this generational cohort represent a key step in the identification of the sample of this study. Also known as Generation Y, Millennials are grouped according to their birth year, which range varies among scholars, as it can be noticed in Figure 3.2.1.

Figure 3.2.1 – Millennial birth periods as mentioned in Moreno, Lafuente, Carreon, & Moreno, 2017.

No	Author/year	Millennials (birth period)
1	Valentine & Powers (2013)	1977 - 1996
2	Muda, Mohd, & Hassan (2016)	1980's to the early 1990's
3	Omar (2016)	1980-1990's
4	Lissitsa & Kol (2016)	1980-1999
5	Moore (2012)	1982-2000
6	Rainer & Rainer (2011)	1980-2000
7	Lee & Kotler (2016)	1980-2000
8	Junker, Walcher, & Blazek (2016)	1981-1995
9	Ordun (2015)	1981-2000
10	Howe & Strauss (2000)	1982-1988

Millennials are largely considered by academics as a homogenous group with analogous characteristics and values (Suh, Alhaery, Abarbanel, & McKenna, 2017; Serazio, 2015; Botterill, Bredin & Dun, 2015). Pitta, Eastman and Liu (2012) recognize the following characteristics as distinctive of this group of people: consumption-oriented, ecologically conscious, aware of social-related issues, acquainted with high-tech, goal-oriented and accustomed to multiculturalism. Similarly, Tapscott (1998) considers the millennials to be analytical and prone

to further investigate topics they are interested into. As a matter of fact, this cohort of people has been proven to be particularly sensitive to environmental sustainability (Husted, 2005; Park, Russell & Lee, 2007) and CSR values (Hanson-Rasmussen & Lauver, 2018). Therefore, this generation appears particularly relevant as unit of research for this study since the effects of gamification on this specific group of people has never been studied before in the context of CSR communication.

As for the gamification aspect, known as *digital natives*, this generation appears particularly relevant for the experiment due to their immersive approach and use of Web 2.0 technologies on a daily basis (Skinner, Sarpong & White, 2018). Moreover, it has been observed that subjects with "prior gaming experience, specially the younger ones, judge gamification as more useful and perceived more flow and enjoyment than the older age group" (García-Jurado, Castro-González, Torres-Jiménez, & Leal-Rodríguez, 2019, p. 1279).

As argued by Maltseva et al. (2019), it has not been investigated so far whether gamified CSR communication might be appropriate for some audiences in comparison to others and how specific demographical groups can be addressed via the most effective instrument, such as visual material combined with textual material. In this perspective, this study aims to fill a gap in the literature as far as the demographic group and the type of gamified stimuli is concerned.

3.3 Data collection and preliminary pre-test

The data collection was conducted through an online experiment using online survey tool called *Qualtrics*. As for the medium chosen to deliver the experiment, online survey appeared to be a valid setting as the experimental conditions simulate online social media posts. In fact, as argued by Roh (2017), it is particularly suggested to collect data via online survey when the aim of the study is to observe perceptions of online content. Moreover, it enables a reliable comparison of the outcomes by gathering more valid results thanks to a random assignment of conditions to the research units (Roh, 2017). As a matter of fact, randomization was employed in order to avoid bias and systematic variations of each case (Neuman, 2014).

As a preliminary step, a pre-test was conducted on a small sample of 10 people in order to assess the clarity of the questions and reveal possible ambiguous points. The 10 respondents recruited for the pre-test were not included in the final sample of the research. Some minor changes were implemented after this preliminary phase: for instance, the manipulation check question on the gamification variable resulted slightly confusing for some of the subjects due to the technical use of the term "gamification" implied in the question "do

you notice any gamified element in the social media post?". As pointed out by some respondents, the term "gamification" can be misleading since not all the respondents are acquainted with communication science notions and, as a result, the responses can be biased. In the final version of the survey, the manipulation check question has been re-formulated into a plainer English, in the form of: "Did you notice any elements related to gaming in the social media post?". Besides, some typo error has been noticed by a pre-test respondent in the fictional article.

3.4 Operationalization

The final survey was structured as follow: first, the respondents were provided with a short text describing the purposes and estimated completion time of the survey and introducing the researcher. Once debriefed, a question in order to assess their comprehension of the information provided has been asked. Any risks or danger for subjects was involved in the execution of the experiment, thus, no disclaimer about explicit, violent or offensive material was included. Then, upon respondents' agreement of on the terms and conditions of contentment and an anonymity guarantee, the survey proceeded with the provision of visual material about the fictional company, named "GreatAdventures". The invented brand imaginatively operates as a global outdoor lifestyle brand, offering a full range of footwear, apparel and accessories.

An identical company description was given to all participants, entailing a screenshot of the fictious "About us" company website page (see Appendix B1) followed by a fictional article about the brand's commitment to a CSR activity, namely reforestation efforts (see Appendix B2). The aim of showing this material lies on the researcher's intent to foster familiarization with the brand identity, mission and values, with a particular focus on the CSR activities. In order to do so, both in the website page and in the article, the company's commitment to sustainability has been stressed.

Then the experiment proceeded by presenting each respondent with one of the four possible conditions, consisting in four different screenshots of posts on the company Facebook page. For the purpose of the study, a fictional Facebook page (provided with an invented logo) was created in order to enhance the credibility of the posts. Secondly, the visual material needed for the conditions including text and images, has been created by the author through the online design tool called Canva. A particular effort has been implied in the process of creating convincing visual material in light of the limitations expressed by Maltseva et al. (2019) in their study on gamification applied to CSR communication. As a matter of fact, the

researchers highlighted that their result could have been biased by a low quality and plausibility of the gamified material provided in their survey. In this respect, this specific attention to the gamified aspect of the experiment represents an attempt to fill the gap in the literature and respond to the authors call for future researches on the topic with more "robust gamification manipulations" (Maltseva et al. 2019, p.59).

More specifically, the first condition (text and image * gamification; see Appendix A1) consisted of a post with text and an image depicting a game promoting reforestation created and sponsored by the company to raise awareness on the topic and foster donations to a fictional partner organization named "FreeTheTrees". The image strategically displayed several gamified elements: a playful and colourful design depicting a tropical forest aiming to engage the viewer in a convincing gaming setting; a big, visible button inviting the viewer to "play the game" on their website in order to support the reforestation campaign; the identification of a protagonist of the game (a toucan) and its goal (eating berries); a brief explanation of the rules and the goals of the game; a reward system constituted by the game mechanics of points, here represented by coins earned according to how many berries the toucan succeeded to eat. As for the second condition (text and image * non-gamification; see Appendix A2) an image devoid of gamification techniques has been paired with the text (with an analogous content as the previous condition). The image consists of a picture of a tropical forest in the background, the fictional logo of the company and the sentence "Buy and plant a tree in our forest in Mali". The third condition (only text * gamification; see Appendix A3), entailed a textual post into which the gamified aspect has been employed through the use of key words recalling gaming activities, such as "game", "virtual", "coins" or "donate". In order to make those items stand out, they have been highlighted using hashtags. Finally, the game element occurred in the form of textual explanation of the game dynamics and purposes and in the call to play the game on the company's website. The last condition (only text * non-gamification; see Appendix A4) resided in a conventional CSR textual post, plainly describing the CSR campaign without any gamified strategy.

Then, participants proceed to respond the next questions measuring the following variables: environmental attitude, pro-environmental behavioural intention, familiarity with video games and prior knowledge in matter of sustainability.

The final part of the survey consisted of demographic questions, namely "What is your age?"; "What is your gender?"; "In which country do you currently reside?"; "What is your level of education?". The experiment was ended with a message thanking the participant for their time and participation. In order to prevent questions not being answered, data loss and

thus, decrease of validity, caused by missed answers, all the questions required a mandatory response.

3.5 Measurements and variable construction

The two independent variables manipulated in the experiment were the feature of the message (textual message with or without visual stimuli) and the occurrence of gamification (present vs. absent). Moreover, two dependent variables (environmental attitude, pro-environmental behavioural intention) were included in the study. In the experimental design, a moderator analysis was conducted on the mediating function of two moderator variables: *Familiarity with video games* and *Prior knowledge in matter of sustainability*. The reasons why we assumed that they hold a moderation effect on the two dependent variables was investigated in order to assess the accurateness of the prediction expressed by the hypotheses H3a, H3b and H4a, H4b. To ensure validity, namely the accuracy of a specific idea in comparison to the reality (Neuman, 2014), few precautions were taken. To begin with, the presence of moderator variables (namely familiarity with video games and prior knowledge in matter of sustainability) prevents possible bias arose by exogenous factors, guaranteeing that only the dependent variables included in the design can generate an effect on the independent variables. All scales implied for the measurements were validated in previous research and they will be presented in detail the in the following section.

3.5.1 Environmental attitude

The first dependent variable of this experiment is the *Environmental attitude* of the respondents. In other words it express the concern for the presented environmental matter (Maltseva et al., 2019) and it was measured using the scale developed by Turker (2009), designed to measure CSR as far as the expectations of a variety of stakeholders. Respondents were asked to express their level of agreement with the provided statements in respect of the perceived opinion of GreatAdventure drawn thanks to the material given on a five-point Likert scale. Out of the 42 items included in Turker's scale, the following were selected to test the "environmental attitude" variable: "The company implements programs to minimize its negative impact on the natural environment"; "The company participates in activities which aim to protect and improve the quality of the natural environment"; "The company targets sustainable growth which considers future generations"; "The company makes investment to create a better life for future generations"; "The company supports nongovernmental organizations working in problematic areas".

A reliability test was conducted on the "Environmental attitude" scale, indicating good reliability, reporting a *Cronbach's alpha* = 0.702. As a matter of fact, a Cronbach's alpha above 0.7 indicates a reliable scale (DeVellis, 2012). Cronbach's alpha is commonly used as an indicator to measure internal consistency of scales (Pallant, 2014).

Once assessed the reliability of the scale, a principal component analysis (PCA with varimax rotation) was conducted in order to attempt data reduction by lowering a larger number of variables to just a few (O'Dwyer & Bernauer, 2014). The KMO and Bartlett's test revealed that the items were significantly correlated (Significance =.000) and KMO of .744. The PCA indicates that the 5 items together form a one-dimensional scale: one component showed an eigenvalue above 1 (eigenvalue of 2.444) and explained 48.9% of the variance. Given that the other components showed an eigenvalue below 1 and after the first component a clear descending curve is revealed in the screen plot, they remaining items have been neglected. Since the scale proved to be reliable, all 5 items were combined into a new variable called "EnvironAttitude" (*M* = 4.207, *SD* = 0.58). Hence, the newly computed mean "EnvironAttitude", can be considered a scale measuring the level of agreement of the respondents in respect of CSR activities of the company and, finally, their environmental attitude towards the given material.

Table 3.5.1 Environmental attitude Factor Loading

The company supports nongovernmental organizations working in problematic areas	.386
The company implements programs to minimize its negative impact on the natural environment	.679
The company participates in activities which aim to protect and improve the quality of the natural environment.	.742
The company makes investment to create a better life for future generations	.781
The company targets sustainable growth which considers future generations	.821

3.5.2 Pro-environmental behavioural intention

The second dependent variable of the experiment, *Pro-environmental behavioural intention*, is defined as "an intention to act in a way that maximizes individual's efforts to reduce the negative impact of human activity on the environment" by participating for instance to pro-environmental activities and events or learning more about the topic or, more in general, the act of personally engage in an activity aimed at somehow defend the environment (Maltseva et al. 2019, p. 49). The measurement of this variable was conducted through asking participants to donate with the following question: "Would you donate to the

cause the monetary reward you received by filling this survey?". A five-point Likert scale of involvement from Mittal (1995) was employed in the measurements, from 1= extremely unlikely to 5= extremely likely.

3.5.3 Familiarity with video games

Familiarity with videogames, being a moderator variable, was measured using a multiple-choice question, assessing whether if the respondent is a player through the question: "Have you ever play video games?" with a Yes/No answer option. This variable (named "Familiarity_videogames") constituted one of the two moderator variables of the experiment and was designed to assess any possible difference related to respondents' familiarity with videogames in relation to the dependent variables. For the purpose of the analysis, a moderator variable named "Mod1_Play" has been computed, combining the Dummy variable related to the occurrence of gamification (Dummy1) and the abovementioned question.

Moreover, frequency of gaming activities has been measured through the question: "How often do you play video games?" on a five-points scale from 1= never to 5= always. Nevertheless, this question was not included in the analysis since it was designed to fulfil the informative purpose of assessing respondents' general use of videogames. In fact, none of the hypothesis tests the influence of gaming frequency on the independent variables.

3.5.4 Prior knowledge in matter of sustainability

Prior knowledge in matter of sustainability, being a moderator variable, was measured using the 11 items of the Two Major Environmental Values (2-MEV). This scale was created by Bogner and Wiseman (2006) in order to measure adolescents' environmental attitudes and values on two levels: preservation-ecocentrism (care with resources, intent of support, enjoyment of nature) and utilization-anthropocentrism (human dominance, altering nature). Preservation (PRE) and Utilization (UTL) have repeatedly and independently been confirmed. PRE evaluates inclinations towards conservation of the environment, whereas UTL measures preferences regarding the utilization or exploitation of nature. As stated by Liu and Chen (2019), numerous studies in the last 20 years applied this scale on young people from various cultures and nationalities, therefore it appeared suitable to test the control variable of this experiment.

A reliability test was performed on the "Prior knowledge in matter of sustainability" scale, the resulting Cronbach's alpha = .762 indicates good level of reliability. As mentioned above, a Cronbach's alpha above 0.7 implies a reliable scale (Pallant, 2014). Then, a principal components analysis (PCA) was run on the 11 elements of Two Major Environmental Values (2-

MEV). Before proceeding to PCA, the suitability of data for factor analysis was evaluated. As a matter of fact, some reverse scored items were found ("Our planet has unlimited resources"; "People worry too much about pollution"; "The quiet nature outdoors makes me anxious") and then reversed for the purpose of the factor analysis.

Scrutiny of the correlation matrix showed the presence of many coefficients of .3 and above. The KaiserMeyer-Olkin value was .752, exceeding the recommended value of 0.6 and Bartlett's Test of Sphericity revealed statistical significance (p= 0.000), supporting the factorability of the correlation matrix. Principal components analysis showed the occurrence of three components with eigenvalues greater than 1, explaining 31.6%, 17.7% and 11.8% of the variance respectively. Based on the PCA results (displayed in the table 3.5.4 below), I decided to leave all other items out of your research, as they will complicate the moderation test. In fact, just the first 5 items included in Factor 2 were considered to construct the variable called "KnowSust".

Table 3.5.4 Prior knowledge in matter of sustainability Factor Loading

I enjoy gardening	.824
I personally take care of plants	.804
Listening to the sounds of nature makes me relax	.736
Nature is always able to restore itself	.531
Our planet has unlimited resources	-.335

Once the variable was constructed, a reliability test was conducted on "KnowSust", showing a Cronbach's alpha = 0.760 which indicates good level of reliability.

3.6 Manipulation checks

In this study, two manipulation checks were performed aiming to test the effectiveness of the manipulation of the two independent variables and whether participants were aware of the condition they have been assigned to. Besides, as for the internal validity, manipulation checks are designed to verify that the conditions and the variables in the experimental design operate as hypothesised. This procedure, according to Neuman (2014) is a valid support against possible hazards to the internal validity.

In order to conduct an experimental condition test on the manipulation check questions, two Dummy Variables have been created as a preliminary step, where each dummy variable indicates one experimental condition. More specifically, condition 1 and 3 were recoded as 1 in the first dummy variable (Dummy1), which denoted gamification, whereas condition 2 and 4 were recoded as 0, which represented no gamification. In the second dummy variable (Dummy 2), condition 1 and 2 were recoded as 1, representing a textual message paired with an image,

whereas condition 3 and 4 were recoded as 0, which denoted a message presented with only text with no image.

Through crosstabs analysis, a chi-square test proved that the experimental condition of gamification (measured with the question "Did you notice any elements related to gaming in the social media post?") was successfully manipulated. The Pearson Chi-square test value showed a significant effect, $\chi 2$ (1, N = 243) = 26.603, p <.001. 69.8% of the respondent assigned to the gamified conditions, responded correctly to the question, proving to have noticed a gamified element in the post.

Next, the same process was applied to the second manipulation check, regarding the nature of the platform. The second manipulation check question ("Which platform was the corporate ads posted?") aimed to unobtrusively investigate respondents' awareness on the type of platform where the message has been displayed and thus their understanding of the type of stimuli offered on different channels: image and text based platforms (e.g. Facebook) in contrast with text based platforms (e.g. Twitter). The crosstab analysis was conducted to assess the manipulation effect of the second dependent variable. The Pearson Chi-square test value showed a significant effect, $\chi 2$ (1, N = 243) = 0.421, p =.005. of the respondent assigned to the gamified conditions, responded correctly to the question, proving to have noticed a gamified element in the post. More than 90% of the respondent (in each experimental condition) identified the correct platform.

3.7 Demographics

During the data cleaning step, the raw dataset has been cleared by all the respondents which didn't fulfil the age criteria, as a consequence, all the respondents who declared a year of birth not comprised between 1980 and 2000, were excluded from the sample. Thus, the final and cleaned dataset consisted of N=245 participants who matched the sampling criteria and successfully completed the survey. Among the respondents, 62.4% (N= 153) were male and 37.6% (N= 92) were female. As the language in which the online survey was conducted was English, most of the respondent's nationalities belonged to English-speaking countries. In the dataset, 39.9% (N = 83) were Indian, 21.7% (N = 143) were Americans, 24.9% (N = 61), followed by Italians 11.4% (N = 28) and Brazilian 11.4% (N = 28). The remaining subjects were from Armenia; Brunei Darussalam; Canada; Costa Rica; France; Germany; Indonesia; Japan; Kenya; Nepal; Netherlands; Spain; United Kingdom; Northern Ireland and Venezuela. The majority of respondents 41.6% (N =102) of have obtained a bachelor's degree, 26.1% (N = 64) achieved a University master's degree, 19.2% (N = 47) declared to have completed a college degree and 10.6% (N =26) are high school graduates. Only a minority belonged to other

educational levels: 2% (*N* =5) below high school and 0.4% (*N* =1) PhD level. With a mean of *M* = 3.80 and a standard deviation of *SD*=1.021. Overall, a great majority (93.1%, *N*=228) of the participants of the experiment have a Facebook account (Facebook users: *M*=1,07, *SD*=0.255). 13.5% (*N*=33) declared to use it once a week, 12.2% (*N*=30) 2-3 times a week, 14.3% (*N*=35) 4-6 times a week, and 50.6% (*N*=124) on a daily basis. Only a small minority of respondents (9.4%, *N* =23) declared to never use their Facebook account (Frequency of use of Facebook: *M*=3.83; *ST*=1.412). Hence, it can be argued that the sample generally have a good knowledge of how this social media works and is able to give valid responses in respect of Facebook posts. Fb use frequency where 1= never, 2= once a week, 3= 2-3 times a week, 4= 4-6 times a week, 5= daily.

As it can be observed in the correlation matrix table below, there are some significant correlations between the main variables. The only correlations that will be reported are the ones situated at the p<.01 level of significance. There is a moderate, positive correlation between "Prior Knowledge Sustainability" and "Environmental Behaviour Intention" (*r*=0. 453). The second moderator variable, Prior knowledge in matter of sustainability, is correlated with "Prior Knowledge Sustainability" (*r*= 0.185) and the first moderator variable, "familiarity with videogames" (*r*= 0.903). Besides, Familiarity with videogames is negatively correlated with Environmental attitude (*r*=-0.174) and has a positive correlation with the second moderator variable (*r*=0.178). Finally, gender has a moderate, positive correlation with Familiarity with videogames (*r*= 0.181).

Table 3.7 Correlation matrix *N*= 243

		1	2	3	4	5	6	7	8
1	Environmental attitude	1							
2	Environmental Behaviour Intention	.105	1						
3	Prior Knowledge Sustainability	.114	.453**	1					
4	Moderator1	-.123	-.083	-.073	1				
5	Moderator2	-.082	-037	.185**	.903**	1			
6	Familiarity with videogames	-.174**	-.066	-.044	.178**	-.036	1		
7	Facebook user	-.059	-.026	-.088	-.033	-.042	.025	1	
8	Gender	.019	.019	-.037	.091	.058	.181**	-.013	1

**. Correlation is significant at the 0.01 level (2-tailed).

4 Results

4.1 Hypotheses testing H1, H2: One-Way ANOVA test

The first section discusses the results of the hypothesis presented in the theoretical framework chapter within the conceptual model. H1 (a and b) and H2 (a and b) are designed for testing means cross groups, hence One-Way ANOVA test was run to test them. As a matter of fact, this type of analysis of variance is implied to compare the mean scores of two or more groups on a categorical variable (Pallant, 2014). More specifically, one-way ANOVA test has been chosen, since it enables to compare the mean scores of two or more different groups of people as required by H1 and H2.

4.1.1 Hypothesis 1a

In H1a, it was hypothesized that CSR message presented in a Facebook post with text and image (independent variable), will affect environmental attitude (dependent variable) among Millennials more positively compared to a message presented on a post just with text. Firstly, one ANOVA test was run in order to assess whether there are significant differences in the mean scores on the dependent variable "EnvironAttitude" across the experimental conditions including both text and images; in other words, it aimed to explore the impact of the presence of image and text in a Facebook post on Millennials' concern for the presented environmental matter (Maltseva et al.,2018). As a pre-test before running ANOVA, the Levene's test showed that the variances for the presence of image and text in environmental attitude were equal, $F(1, 243) = 0.01$, $p = 0.921$ and thus the assumption of equal variance (cross testing groups) is confirmed.

The ANOVA results were not found to be significant at the $p<0.05$ level: F (1, 243) = 1.2, p = .274. The effect size, calculated using eta squared, was $\eta 2= 0.005$. According to Cohen (1988) this value is comprehended in the range of values indicating a small effect; hence this result denotes a trivial strength of the effect. Post hoc tests were not performed for Environmental attitude because there are fewer than three groups.

The results suggest that difference between providing a CSR message in a post containing only text (M = 4.169, SD = 0.563) and with text and images (M= 4.250, SD= 0.948) is statistically insignificant on environmental attitude on Millennials. Hence H1a is rejected. Despite the statistical insignificance, a more positive environmental attitude is observed for CSR message with text and images than only with text, as suggested by the difference of the Means.

4.1.2 Hypothesis 1b

Hypothesis H1b suggested that CSR message presented in a Facebook post with text and image (independent variable), will affect environmental behaviour intention (dependent variable) among Millennials more positively compared to a message presented on a post just with text. Again, one-way ANOVA was run in order to examine whether there are significant differences in the mean scores on the dependent variable "Environmental behaviour intention" across the experimental conditions including both text and images (included in the independent variable Dummy2). Levene's test indicated equal variances $F(1, 243) = 2.407$, $p = 0.122$. Through a one-way ANOVA test, an insignificant equation was found. Even though, the result is close to significant, meaning that a weak evidence against the null hypothesis can be noticed. In fact, a weak difference between the presence of text and image or just text on environmental behaviour intention was found $F(1, 243) = 2.9$, $p = 0.089$. The effect size, calculated using eta squared, was $\eta 2 = 0.011$; thus, this result denotes a weak strength of the effect. There is no significant difference on environmental behaviour intention between the test subjects who had seen a CSR message in a post containing only text ($M = 3.58$, $SD = 1.077$) and those who had seen post containing text and image ($M = 3.33$, $SD = 1.183$). Hence H1b is rejected.

4.1.3 Hypothesis 2a

Hypothesis H2a posited that CSR message with gamification information (independent variable) in it, will affect environmental attitude (dependent variable) among Millennials more positively compared to a message without gamification in it. A third ANOVA test was conducted in order to explore whether there are significant differences in the mean scores on the dependent variable "Environmental attitude" across the experimental conditions including gamification (included in the independent variable Dummy1). The Levene's test indicated equal variances $F(1, 243) = 0.137$, $p = 0.712$. The ANOVA results were not found to be significant at the $p<0.05$ level: $F(1, 243) = 2.9$, $p = .096$, $\eta 2 = 0.011$. The effect size, calculated using eta squared, was $\eta 2 = 0.011$; hence this result denotes a weak strength of the effect. This means that providing a CSR message in a post containing non-gamified content ($M = 4.27$, $SD = .605$) or in a post containing gamification ($M = 4.147$, $SD = .546$) is statistically weakly significant on environmental behaviour intention on Millennials. Hence, H2a is rejected.

4.1.4 Hypothesis 2b

Hypothesis H2b assumed that CSR message with gamification information (independent variable) in it, will affect environmental behavioural intention (dependent variable) among

Millennials more positively compared to a message without gamification in it. A fourth ANOVA test was conducted in order to explore whether there are significant differences in the mean scores on the dependent variable "environmental behavioural intention" across the experimental conditions including gamification (included in the independent variable Dummy1). The Levene's test indicated equal variances $F(1, 243) = 0.707$, $p = 0.401$. Through a one-way ANOVA test, we could not find a significant difference between the presence of gamification on environmental behavioural intention. $F(1, 243) = 0.838$, $p = 0.361$, $\eta 2 = 0.003$. The effect size, calculated using eta squared, denotes a weak strength of the effect. The results shows that there is no significant difference between the test subjects who had seen a CSR message in a post containing non-gamified content ($M = 3.53$, $SD = 1.088$) and those who had seen post gamification ($M = 3.40$, $SD = 1.174$) in relation to their environmental behavioural intention. Hence, H2b is rejected.

4.2 Hypotheses testing H3, H4: linear regression analysis test

The second section of the results presents the outcomes of the regression analysis conducted in order to test hypotheses H3 (a and b) and H4 (a and b). This type of statistical analysis has been chosen to investigate whether a moderation effect is present in the relation between the dependent variables and the independent variables. Two distinct moderation variables have been beforehand constructed: the first one has been named as "Moderator1_Play", computed as the interaction of Dummy1 and the variable measuring the familiarity with videogames (through the question "Have you ever play video games?"). The second moderation variable has been termed "Moderator2_KnowSust" and results from the interaction of "Dummy1" and the independent variable "KnowSust" (measuring respondents' prior knowledge in matter of sustainability). The aim of this process is then discovering how the presence of gamification, familiarity with video games and prior knowledge of sustainability influence respondents' environmental attitude and behavioural intention and in what way.

Before running the multiple linear regression, we ensured that the required assumptions for a regression analysis were met (Pallant, 2014). In order to do so, residual scatterplot have been conducted to check normality, linearity and homoscedasticity. A multicollinearity test was also conducted for each regression model, and no issue was diagnosed. Then, the continuous variables were standardised through the creation of a z-score prior to the regression analysis.

4.2.1 Hypothesis 3a

Hypothesis H3a postulated that the impact of gamified message on people's environmental attitude (dependent variable) will be higher for people who play videogames (moderator variable) than people who do not play video games. This hypothesis tests the moderation effect represented by the familiarity with videogames on respondents' environmental attitude. A multiple Linear Regression analysis was run with the aim of discovering how being a video games player influence Millennials' environmental attitude in respect of gamified CSR messages.

To investigate the effect on *Environmental Attitude* (DV) by other factors, a Linear Regression analysis was performed. We wanted to discover how *Familiarity with videogames* ("Familiarity_videogames") and the *Moderation effect of playing videogames* ("Moderator1_Play") influence respondents' *Environmental Attitude* and in what way. A significant regression equation was found F (3, 241) = 3.885, p= 0.010. The model showed a weak predictive power as only 4.6% of the variance in environmental attitude could be explained by the presence of gamification and familiarity with videogames. The regression model is thus not useful for predicting the intended outcomes on the environmental attitude among the respondents in relation to the independent variables, which predictive power is very weak (R^2 = .046).

"Dummy1_Gami" and the moderation variable "Moderator1_Play" were not found to be significant predictors of *Environmental Attitude.* The analysis showed that the presence of gamification does not have an effect on respondents' environmental attitude, (Dummy1_Gami, b^*= -0.450, t = -1.335, p= .183, 95% CI [-1.113, 0.214]). The moderation effect (Moderator1_Play) was found to be statistically insignificant b* = 0.354, t = -1.034, p =0.302, 95% CI [-0.320. 1.028] indicating a not predictive ability on the DV. In conclusion, the result show that *Familiarity with videogames* could not significantly moderate the effect of *Gamification* on *Environmental Attitude*, meaning that we cannot predict whether people who play videogames would be more affected by a gamified message as for their environmental attitude compared to people who never played videogames. Thus, H3a is rejected.

Table 4.1.5 Summary of linear regression analysis for H3a testing

	Unstandardized Coefficients		Standardized Coefficients		
Model	B	Std. Error	Beta	t	Sig.
(Constant)	-3,146E-15	.063		.000	1.000
Dummy1 (Gamification)	-.450	.337	-.450	-1.335	.183

Familiarity with videogames	-.240	.089	-.240	-2.695	.008**
Moderator1_Play	.354	.342	.354	1.034	.302
R-Square	.046				
F-Test	3.885				.010

Significance levels: * p< .05 ** p< .01 *** p< .001.

4.2.2 Hypothesis 3b

Hypothesis H3b posited that the impact of gamified message on people's environmental behavioural intention (dependent variable) will be higher for people who play videogames (moderator variable) than people who do not play video games. This hypothesis tests the moderation effect represented by the familiarity with videogames on respondents' environmental behavioural intention. As a matter of fact, a multiple Linear Regression analysis was run with the aim of discovering how being a video games player influence Millennials' environmental behavioural intention in respect of gamified CSR messages.

To investigate the effect on *Environmental behavioural intention* (DV) by other factors, we performed a Linear Regression analysis. We wanted to discover how *Familiarity with videogames* ("Familiarity_videogames") and the *Moderation effect of playing videogames* ("Moderator1_Play") influence respondents' *Environmental behavioural intention* and in what way. Given that the regression model was found insignificant (F (3,241) = 1.148, p= .330) no linear relationship of the IVs and moderators with the DVs could be established and all coefficient estimates were insignificant. As a result, the Hypothesis H3b is rejected.

4.2.3 Hypothesis 4a

Hypothesis H4a hypothesized that the impact of gamified CSR message on people's environmental attitude (dependent variable) will be higher for people who have good prior knowledge of sustainability (moderator variable) than people that do not have much prior knowledge. This hypothesis tests the moderation effect represented by prior knowledge in matter of sustainability on respondents' environmental attitude. As a matter of fact, a multiple Linear Regression analysis was run with in order to discover whether having a good prior knowledge in matter of sustainability has an impact on Millennials' environmental behavioural intention in respect of gamified CSR messages and in which way.

The regression equation was found not significant (F (3, 241) = 1.969, p= .119). As a consequence, the regression model does not predict the intended outcomes on respondents' environmental attitude in relation to the independent variables, which predictive power is very weak (R^2 = 0.024). Given that the regression model was found insignificant (F-value with a p >

0.1) no linear relationship of the IVs and moderators with the DVs could be established and all coefficient estimates were insignificant. Hence, the Hypothesis H4a is rejected.

4.2.4 Hypothesis 4b

Hypothesis H4b assumed that the impact of gamified CSR message on environmental behavioural intention (dependent variable) will be higher for people who have good prior knowledge of sustainability (moderator variable) than people that don't have much prior knowledge. This hypothesis tests the moderation effect represented by prior knowledge in matter of sustainability on respondents' environmental behavioural intention. A multiple Linear Regression analysis was run with the aim of discovering if and how having a prior knowledge in matter of sustainability influences Millennials' environmental behavioural intention in respect of gamified CSR messages.

To investigate the effect on *Environmental behaviour intention* (DV) by other factors, we performed a Linear Regression analysis. We wanted to discover how *Prior knowledge in matter of sustainability* ("KnowSust") and the *Moderation effect of having such prior knowledge* ("Moderator2_Sust") influence respondents' *Environmental behaviour intention* and in what way. A significant regression equation was found (F (3, 241) = 21.331, p= .000). The model showed a moderate predictive power as 21.0% of the variance in *Environmental behaviour intention* could be explained by the presence of gamification and familiarity with videogames. The regression model is thus useful for predicting the intended outcomes on the environmental attitude among the respondents in relation to the independent variables, which predictive power is very weak (R^2 = 0.210).

Presence of gamification (b*= 0.449, *t* = 0.786 , *p*=.433) and the moderation variable "Moderator2_Sust" (b*= -0.278, *t* = -0.954, *p*=.341) were not found to be significant predictors of *Environmental behaviour intention.* Accordingly, the moderation analysis demonstrated that *Prior knowledge in matter of sustainability* could not significantly moderate the effect of *Gamification* on *Environmental behaviour intention*. Thus, H4b is rejected.

Table 4.1.8 Summary of linear regression analysis for H3a testing

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	.764	.648		1.179	.239
Dummy1 (Gamifaction)	.449	.572	.199	.786	.433
ZModerator2_KnowSust	-.278	.291	-.245	-.954	.341

	Prior Knowledge Sustainability	.480	.078	.509***	6.137	.000***
	R-Square	.210				
	F-Test	21.331				.000

Significance levels: * p< .05 ** p< .01 *** p< .001.

4.3 Additional findings

Although the interaction (moderation) effects results are insignificant in H3a and H4b hypothesis testing, few interesting outcomes which were not predicted by the hypothesis have been observed. First, *Familiarity with videogames* was found significant within the regression analysis run in order to investigate the effect on *Environmental Attitude* (DV) by other factors (H3a testing). *Familiarity with videogames* was found to have a direct impact on respondents' *Environmental Attitude* (b*=0.240, *t*=2.695, *p*= .008), meaning that people who play videogames are more prone to appreciate an improvement in their environmental attitude when solicited. Similarly, a direct impact of *Prior knowledge in matter of sustainability* on *Environmental behavior intention* was revealed by the regression analysis conducted to test the hypothesis H4b. In fact, the variable *"*KnowSust" showed a direct effect on the dependent variable (b*=0.480, *t*= 6.137, *p* =.000): meaning that having a good prior knowledge in matter of sustainability represents a noteworthy influence in relation to the development of a form of *Environmental behavior intention,* which in this case is represented by the will of take a practical action towards the exposed issue.

5 Discussion

5.1 Theoretical implications

As previously noticed in the first and second chapter of this thesis, the scarcity of literature on the applications of gamified techniques in the CSR communication fields lead the researcher to empirically explore the topic through an experiment, aiming to expand the academic knowledge about this subject. In this respect, the present paper represents a contribution to expanding the current literature not only for what concerns CSR communication, but it also adds further insight into gamification research in general, providing a new understanding of this specific field of application.

To address this gap in existing literature, we attempt to continue the existing research by responding to some of their future researchers' suggestions. First of all, this paper aimed to assess whether a gamified communicative style might suit the specific generation of Millennials, paving the way for a better understanding of which type of gamified strategies might be more suitable for certain audiences. In fact, this particular segment of population has never been studied before in the context of CSR communication. Considered by scholars to be particularly receptive to environmental concerns (Husted, 2005; Park, Russell & Lee, 2007) and CSR ideals (Hanson-Rasmussen & Lauver, 2018), Millennials are also characterized by their intensive use of social media, internet and videogames (García-Jurado et al., 2019) but none of those features identified by scholars as distinctive of Millennials, have been compared and contrasted as a possible mediator in the assimilation of a CSR message. Therefore, the results of the current paper provide additional theoretical insight into the use of gamified techniques as regards the appropriateness tool for the Millennials audience.

Secondly, we tried to fill the existing research gap by specifically focusing on the contextualization of the gamified message, studying how and to what extent other factors could constitute a moderation effect on the efficacy of the message. Notably, we studied the possible moderation effects of having prior knowledge in the matter of sustainability and the respondent's familiarity with videogames in relation to the reception of the CSR message. Additionally, our findings regarding the framing of the message through a Facebook post, to some extent support previous studies demonstrating the benefits of a mixed communication (visual and textual) in respect of the internalization of a message (Miniard, Bhatla, Lord, Dickson, & Unnava, 1991). Moreover, they integrate the existing literature with some valuable insight into suitability of an image-based medium for CSR communication. Indeed, they confirm picture-based persuasion process theories process to an extent, suggesting the

positive impact of the presence of images in the internalization of a given message (Seo, Dillard & Shen, 2013).

5.2 Managerial implications

The results of our study suggest that gamification might not be an effective communication technique in relation to the CSR communication field. That was partially explained by the generalized mistrust towards the authenticity of the corporate's actions and communication about CSR (Deez, 2007).

Thus, from a corporate perspective, this study highlights some of the underlying problems which characterize organizations' approach to CSR activities. Indeed, our findings suggest that before focusing on stakeholder's environmental intention and behavior, it might be beneficial for companies to focus their communicative efforts on their image and trustworthiness through their traditional channels. In fact, as argued by Coombs and Holladay (2015), both controlled media channels (e.g., website, editorials, interviews) and uncontrolled media channels (e.g., news releases, information retargeted on social media) represent a valid alternative for a company to build stakeholder awareness on their commitment to positively impact on environmental or social concerns. Due to the insignificance of our result, we assume that the apparent inefficacy of the implemented gamified techniques might also rely on the fact that the fictional company did not have enough credibility to the eyes of respondents. On the contrary, managers of companies with a solid CSR reputation might appreciate different (and potentially positive) results in the application of these strategies for specific campaigns. Another potential backfire of gamification as a communicative tool might be the perceived appropriateness of the playful tone in respect of CSR topics. In fact, our findings support Maltseva's (2019) conclusions regarding this communicative incongruency that can irritate some stakeholder's sensitivity and thus lead to neutral, when not detrimental, effects. These observations lead to warning CSR communication experts on the importance of choosing a topic that can be successfully translated into a gamified message without clashing with consumers' values or beliefs. Indeed, major and extensive issues such as the deforestation problem might seem "too serious" for a gamified type of communication. Moreover, our findings, together with the existing literature, suggest that the element of fun, might produce "mixed feelings" about the CSR communicative efforts of a company and thus require a careful modulation in the creation of a gamified content.

Another valuable insight for a company is represented by the acknowledgment of the positive impact of the presence of images in the media content, which can, to some extent,

foster the interiorization of a message and foster stakeholders' behavior intention. In this view, practitioners can benefit from our findings, recognizing the centrality of visual communication in matters of CSR activities and then put it into practice during the design process of social media campaigns.

6. Conclusion

Despite the growing attention that gamification lately gained among scholars and practitioners in other fields, we noticed a scarcity of studies investigating the effects of gamified CSR messages in comparison to traditional ones. Thus, this study aimed to provide more understandings on the implementation of gamified CSR communication strategies based on empirical evidence. In this view, we tried to fill the existing research gap and contribute to the current literature by responding to the call for future research on the topic specifically focusing on the contextualization of gamification, the moderation effect of having prior knowledge in matter of sustainability in relation to the reception of the CSR message and a deeper understanding of a specific cohort of respondents to the type of message. Hence, by running this online experiment, the main purpose of this study was to answer the following research question: *To what extent gamification can be used as an effective tool for CSR communication activities among millennials*?

6.1 Summary of findings

To answer the RQ, a quantitative study was run through an online experiment conducted via Qualtrics, an online survey tool. Grounding on academic literature, four hypotheses were elaborated to answer the research question. The final sample consisted of 245 respondents, after the exclusion of the responses, which did not meet the criteria. The experiment revolved around the CSR communication of GreatAdventure, a fictional global outdoor lifestyle brand. The respondents were randomly assigned to experimental conditions presenting a Facebook post. All the four conditions presented an analogue CSR message about the topic of reforestation. They varied as for the inclusion of gamification techniques or not and for the occurrence of images in addition to the textual content. The aforementioned experimental conditions were designed as such in order to assess whether the presence of gamified techniques in visual and/or textual in Facebook posts delivering CSR messages can influence the respondent for what concerns environmental attitude and pro-environmental behavioral intention. Moreover, it was studied the possible moderation effect of having prior knowledge in matter of sustainability or having familiarity with videogames in relation to CSR messages.

In respect of the impact represented by image and text in CSR messages on environmental attitude and environmental behaviour intention (tested in H1a and H1b), the analysis of the experimental data disproved the initial assumptions due to the insignificance of the difference tested between the two stimuli provided. The outcomes contradicted with the existing literature on the levels of engagement in CSR communication via social media,

highlighting a powerful connection between the higher educational effect produced by posts delivered through image-based platforms (e.g., Facebook) compared to text-based platforms such as Twitter (Etter, 2013; Golob, Elving, Nielsen, Thomsen, Schultz, Podnar, & Colleoni, 2013). The findings from Deetz (2007) may explain the deviated results: he argues that, in spite of the communicative style or the platform, some negative or neutral reactions to a CSR campaign might partially be linked to stakeholders' generalized mistrust towards the authenticity of the corporate's actions and communication about CSR. Thus, it seems explicable that peoples' concern for a certain environmental issue (namely their *environmental attitude*) would not be affected by the benefits usually attributed to the CSR communication on social media, such as a less direct addressing to the issue (Coombs & Holladay, 2015) or a collaborative and interactive approach or a space for environmental activism (Lyon & Montgomery, 2013) because none of those advantages can compensate a grounded skepticism (Deetz, 2007).

The main findings of the impact of gamification on respondent's and the alleged moderation effect of subjects' familiarity with videogames and prior knowledge in the matter of sustainability, disproved the respective hypotheses (h3a, H3b, H4a, H4b). These results contradicted the assumptions proposed by Maltseva et al. (2019), according to which a previous acquaintance of gaming activities and mechanics can ease the assimilation of the CSR message delivered through gamified techniques. This discrepancy can possibly be explained by the nature of the visual material provided in each condition: the respondents were not enabled to actively play a game; in fact, they were provided with an image of a fictitious game. This could have led to less engagement and identification with gaming activity among respondents. There is a chance that the not completely realistic gaming experience affected the hypothesized moderating effects, leading to a diverged outcome. The observed insignificance of gamification effects was explained by (Knaving & Björk, 2013) as the difficulty represented by successfully designing gamified experiences in support of the main activity expressed by the communication effort. Moreover, as argued by Liu, Santhanam, and Webster (2017), the unsuitability of a gamified strategy can be explained by its incongruency with the context or the addressed issue. Therefore, this could explain why *familiarity with videogames* did not generate moderating effect on *Environmental Attitude* as expected. Likewise, there is a possibility that with more robust and appropriate gamified stimuli, *familiarity with videogames* would moderate the gamified effect on *environmental behavioral intention*, as already suggested by Maltseva et al. (2019)

In spite of the insignificant outcomes, the moderation analysis of the experimental data unveiled further interesting findings. As a matter of fact, the analysis interestingly unveiled that *familiarity with videogames* has a direct impact on *Environmental Attitude*, meaning that video games players' environmental attitude is more likely impacted in comparison to people who do not play video games. Incidentally, a noteworthy finding was disclosed from the moderation analysis run for the H4b hypothesis testing. The result showed that good prior knowledge in matter of sustainability represents a noteworthy influence in relation to the development of a form of *Environmental behavior intention,* which in this case is represented by the will of take practical action towards the exposed issue.

To conclude, this study empirically confirms Maltseva's et al. (2019) final assumptions about the fact that gamified strategies might not suit the purpose of engaging and educating people on sustainability-related topics, in spite of respondent's prior knowledge in matter of sustainability. To support this thesis, our additional results showing a direct impact of having good prior knowledge in the matter of sustainability on *Environmental behavior intention* to some extent support the speculation that "incorporating the elements of playfulness and interactivity into communication about environmental challenges may trivialize the significance of these challenges and, as a result, undermine the effectiveness of communication" (Maltseva's et al., 2019, p.58). We can deduct that, according to our dataset, the presence of gamification could even constitute an obstacle in the engagement with the cause (both from an environmental attitude and behaviour intention perspective).

Based on the results of the present research, we can answer our research question and state that the benefits of gamification as a tool for CSR communication activities among millennials are negligible, if not non-existent. Even though our findings suggest that gamification itself as a tool might not be appropriate to engage and educate Millennials on environmental concerns, this paper contributes to add to the debate about finding new communication strategy in the field of CSR. More specifically, it empirically tested two conjectured moderation effects (familiarity with videogames and prior knowledge in matter of sustainability), which were only postulated by previous studies. Thus, we provided new insight about the small or insignificant effect that those two prior conditions have shown on the environmental intentions and behaviors of the sample. Besides, relevant progress was made in respect of assessing whether gamified CSR communication results appealing for Millennials or not.

On the one hand, the outcomes seem to support some theories arguing that gamification might not be an appropriate tool for CSR communication, even backing those studies that

described it as a form of "slacktivism", namely the online engagement with issues such as sustainability, which is not reflected in concrete actions in real life (de Bakker, 2015; Morozov, 2009). On the other hand, due to the novelty of the application of these techniques in the field, the study highlighted the need for further empirical researches in the field of gamified CSR communications. We can conclude that future studies might benefit from stronger or better-targeted types of manipulation and that, overall, appears relevant to continue investigating the gamification application, with a particular effort for what concerns the study area of ecology, eco-friendliness and sustainability as well.

6.2 Limitations and directions for future research

This study was subject to a few limitations that, while not disadvantageous, might explain the ambivalent or insignificant results and might have limited the researcher to discover further insights.

Firstly, a broader scope and the size of the sample might give different outcomes and reach a higher validity. The final and cleaned dataset consisted of *N*=245 participants, by large exceeding the recommended 30 participants per condition (Van Voorhis & Morgan, 2007). Yet, a higher number of participants might produce different results as for the gamification effects. Besides the sample size, future researchers might find it interesting to investigate the implications of specific cultural and personal factors in respect of the reception of gamified CSR messages. Due to the nature of the sampling method, the heterogeneity of the nationalities measured in the study prevented the researcher from conducting such an analysis. Finally, it might be interesting to replicate the experiments on another cohort of people, unveiling the different impacts detected in the response of other generations, (such as, for example, GenZ or GenX).

Second, one of the main limitations is represented by some aspects of the experimental and stimulus design. In spite of the efforts in creating credible visuals, the resources and skills limits of the researcher could explain the ineffectiveness of gamification to a certain extent. As a matter of fact, a more sophisticated and convincing gamified experience might produce the expected outcomes. In addition to that, as shown by Knaving and Björk (2013), in future studies, the gamified techniques should be constructed according to the purpose of the message and embedded as unobtrusively as possible. Moreover, the controlled experimental settings might jeopardize the effect of gamification, as already mentioned by Maltseva (2019). Lastly, the experimental conditions, including gamifications, did not allow the user to actively play a game, undermining the ludic drive of gamification due to technical limitations (e.g., time

and resources to create a real game to provide as an experimental condition). To sum up, few recommendations for future researchers can be attempted: firstly, we suggest a more robust manipulation of the gamified conditions both for *Environmental attitude* and for *Environmental behavior intention*; secondly, a proper contextualization of gamification may significantly improve the effectiveness of the communication. Then, we propose to consider creating real games with the purpose of communicating CSR activities and then test the appropriateness of these techniques. Finally, we reiterate previous researches' suggestion to further investigate the topic focusing on experimental designs which frictionless convey the CSR message, locating it in the right context for the addressed topic: several studies showed the importance of the scenario and the settings into which the gamified technique is collocated (Liu et al., 2016, Müller-Stewens, Schlager, Häubl, & Herrmann, 2017).

A third limitation of the study was identified in the chosen medium involved in the manipulation, namely a Facebook post. This research exclusively focused on investigating consumers' perceptions based on the vision of this specific image-based platform. However, considered the broadness and heterogeneity of the Millennials cohort, future researchers could explore the suitability of CSR gamified campaigns on different media channels. For example, the younger fringes of the Gen-Y might be more responsive on other social media such as Instagram or TikTok, where the youngest audience recently shifted (Curtis, Ashford, Magnuson, & Ryan-Pettes, 2019). Thus, future research should attempt to conduct this study through a different medium, perhaps focusing on visuals and videos; one possibility might be designing gamified Instagram stories or TikTok videos to maximize the inherent ludic stance of these platforms.

Lastly, the choice of reforestation as a topic might constitute a possible limitation in terms of experimental design. Addressing major environmental issues such as deforestation or ocean pollution, challenges people's comfort and might be perceived as discordant with a playful approach (de Bakker, 2015). A challenge for future researcher might be finding more relatable CSR topics to assess whether the low effectiveness of this type of communication shown by the current results might rely on the topic choice.

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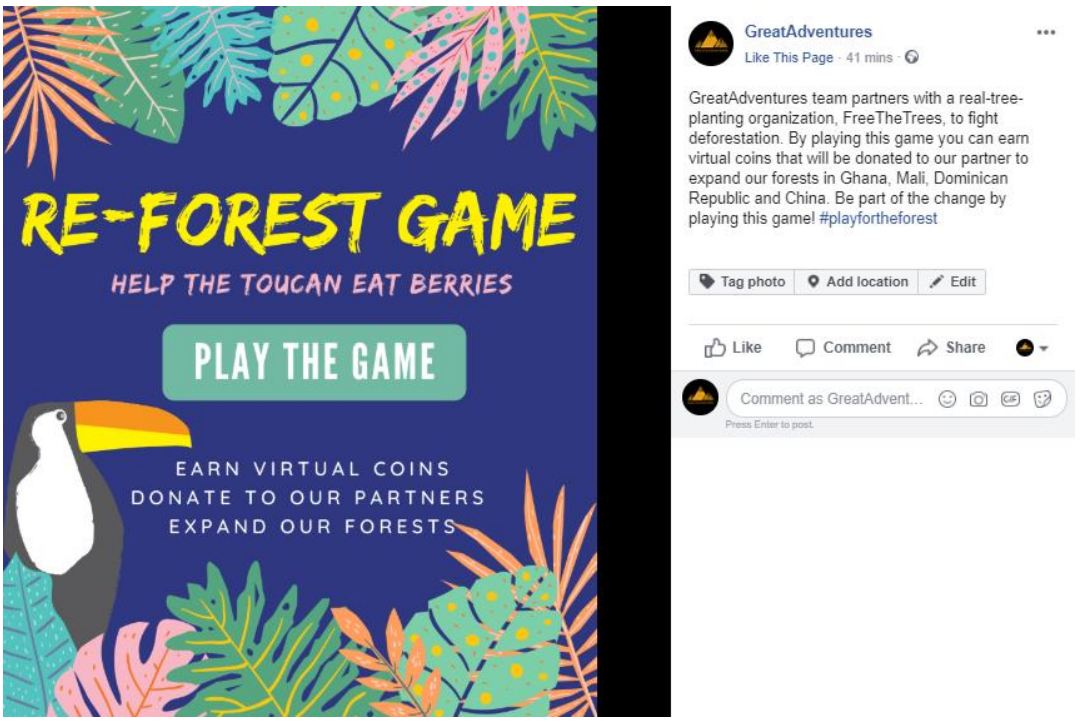
APPENDIX

APPENDIX A: Experimental conditions

A1 – Condition 1

CSR message in FB post with text and image, with gamification technique

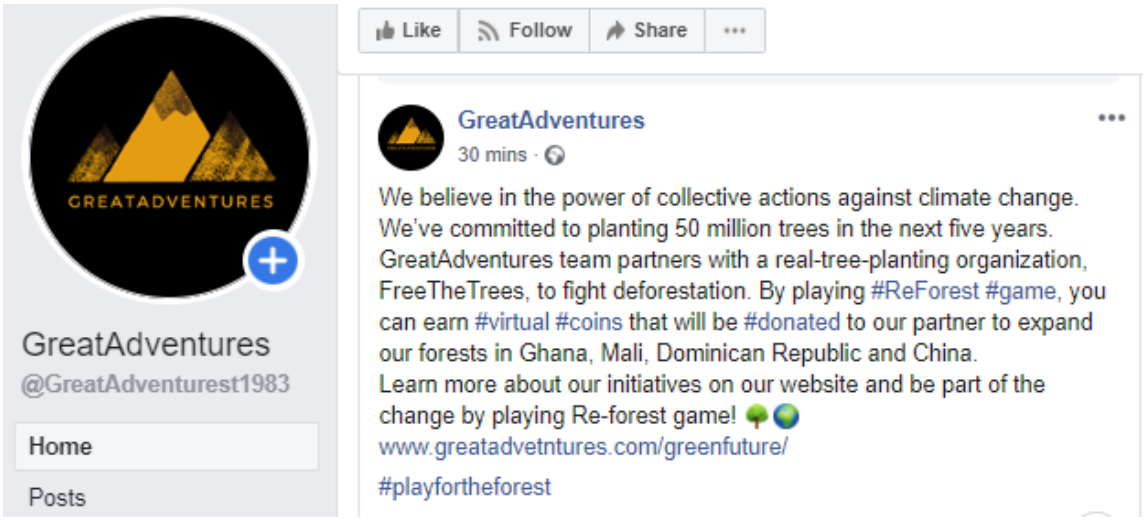


A2 – Condition 2

CSR message in FB post with text and image, without gamification technique

A3 - Condition 3

CSR message in FB post with only text, with gamification technique

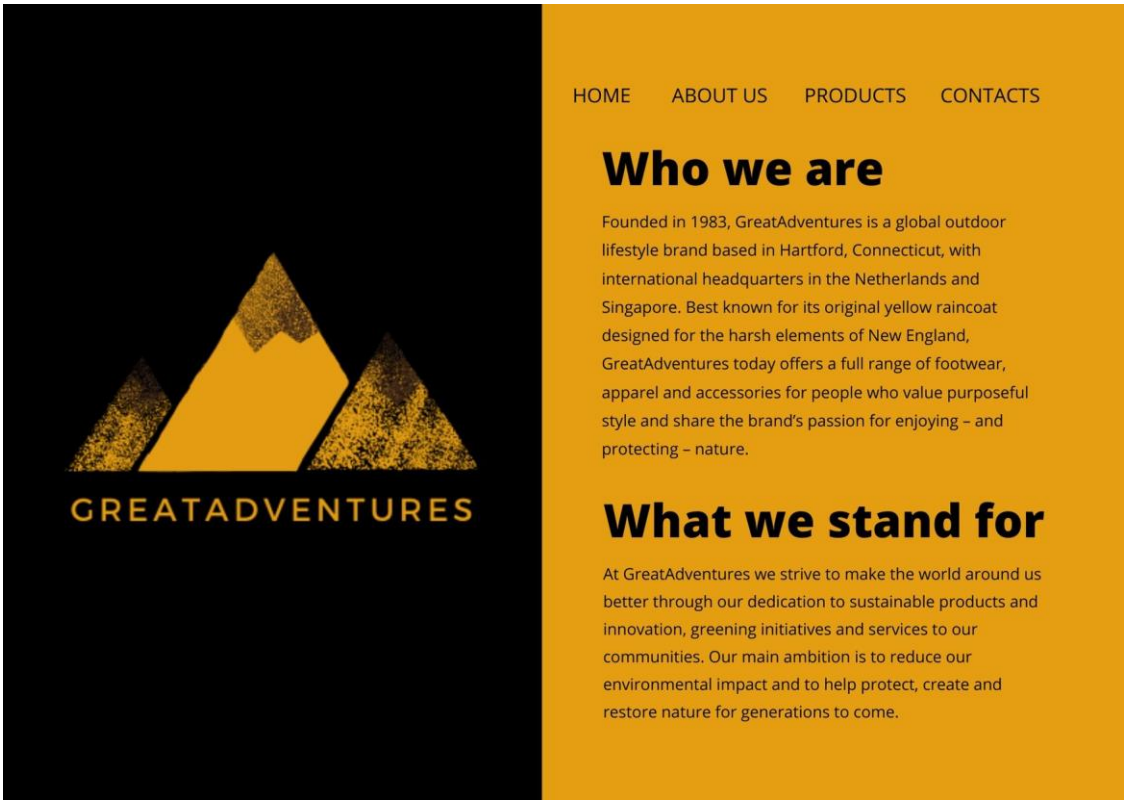


A4 – Condition 4

CSR message in FB post with only text, without gamification technique

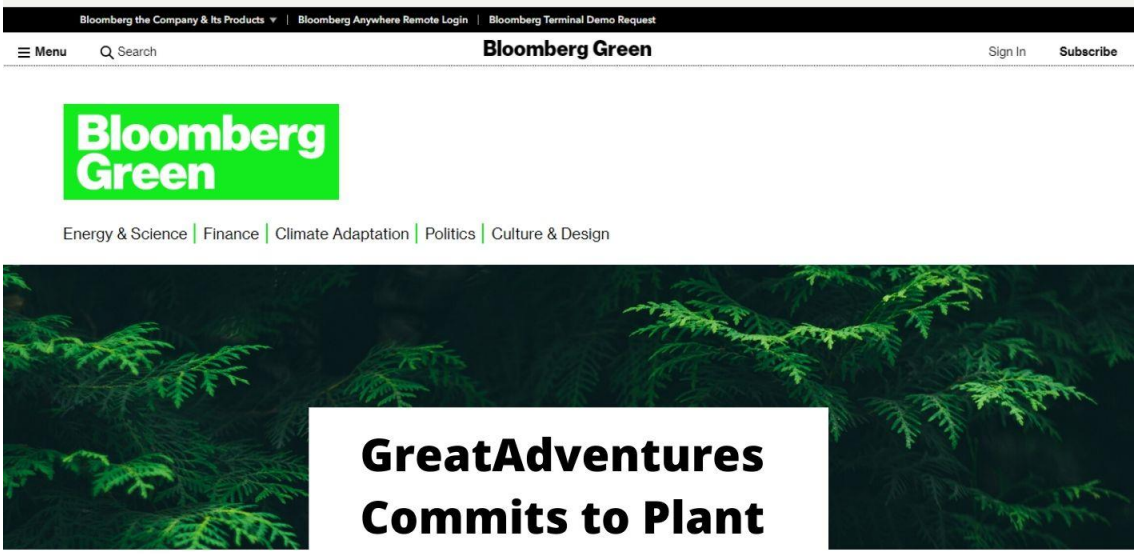
APPENDIX B – Fictional Material

B1 – Company profile



B2 – Fictional Article

Fictional article about CSR activities on a sectorial online newspaper



Global outdoor lifestyle brand GreatAdventures today announced a new commitment to plant 50 million trees around the world by 2025 as part of its pursuit of a greener future.

This bold goal builds on GreatAdventures' longstanding commitment to make products responsibly, strengthen communities, and protect and enhance the outdoors. One key area of focus has been tree planting; since 2001, the brand has planted more than 10 million trees worldwide.

According to new research led by Swiss University ETH Zürich, the restoration of trees remains among the most effective strategies for climate change mitigation, and a worldwide planting program could remove two-thirds of all the emissions that have been pumped into the atmosphere by human activities. Trees help to clean air by removing carbon and releasing oxygen into the air; cool the air through evaporation; prevent erosion and save water, and more.

Over the next five years, GreatAdventures will support multiple re-forestation initiatives around the world in support of a greener future.To kick off its pledge, GreatAdventures has launched its largest-ever global campaign, "Growing the future," calling on consumers around the world to join the movement by taking simple, small actions for a healthier planet. Projects in year one will focus on Ghana, Mali, the Dominican Republic, the United States, Tanzania ad China to fight climate change, drought, famine, conflict, and migration.

APPENDIX C

Experiment Survey

Start of Block: Intro

Q1 Dear participant,

Thank you for taking the time to participate in this survey. The estimated time to finish this survey will be no longer than 7 minutes. Please complete the following questions by ticking the appropriate box.

Please be aware that all your answer will be kept strictly confidential and anonymous. The findings will be solely used for this research.

This is a research project of Maria Pagani at Erasmus University of Rotterdam. If you have any questions or suggestions regarding this survey, please feel free to contact me at 548973mp@eur.nl.

First you will see a company profile. After, an online news article and a media content will be shown to you. Then the survey starts.

Q2
Are the instructions you just read clear to you?

- ○ Yes (1)
- ○ No (2)

Q3 Do you agree that your personal data will be kept anonymous and only used for this project?

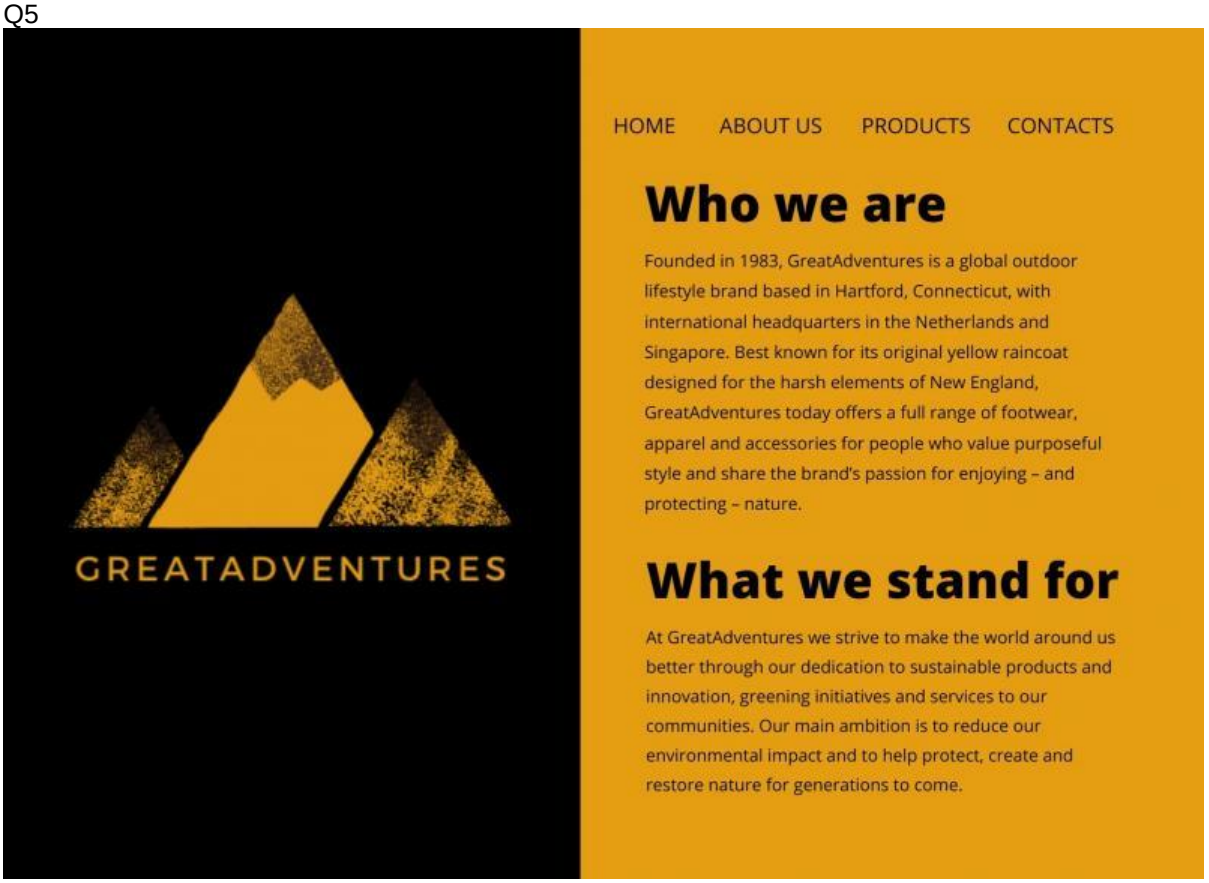
- ○ Yes (1)
- ○ No (2)

End of Block: Intro

Start of Block: Fictional Company profile

Q4 Please read carefully the following material: a company profile description, an article and a post on the company's social media page.

Q5



End of Block: Fictional Company profile

Start of Block: Fictional Article

Q6

GreatAdventures Commits to Plant

50 Million Trees over Five Year

Global outdoor lifestyle brand GreatAdventures today announced a new commitment to plant 50 million trees around the world by 2025 as part of its pursuit of a greener future.

This bold goal builds on GreatAdventures' longstanding commitment to make products responsibly, strengthen communities, and protect and enhance the outdoors. One key area of focus has been tree planting; since 2001, the brand has planted more than 10 million trees worldwide.

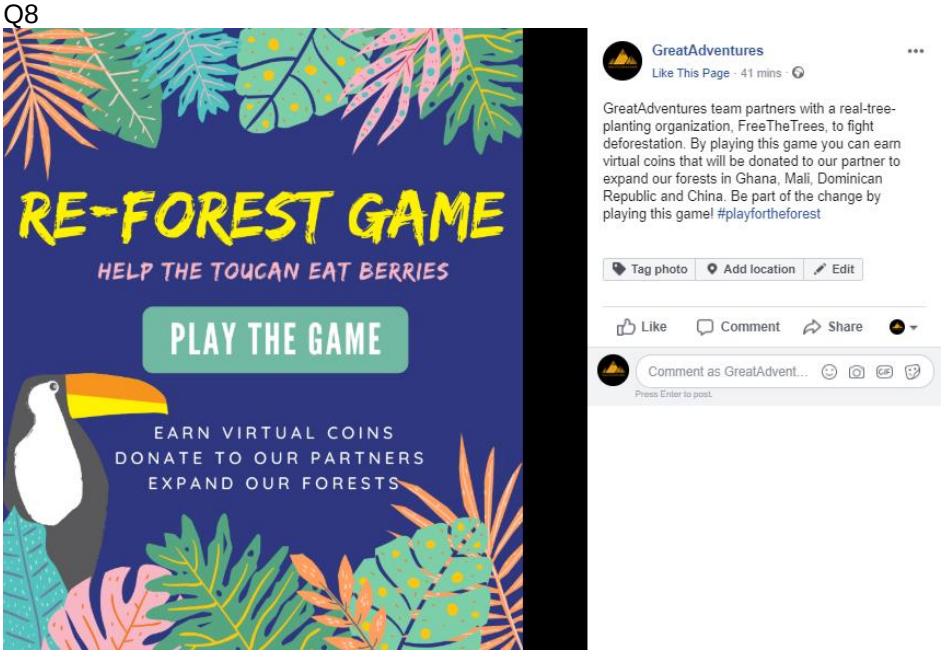
According to new research led by Swiss University ETH Zürich, the restoration of trees remains among the most effective strategies for climate change mitigation, and a worldwide planting program could remove two-thirds of all the emissions that have been pumped into the atmosphere by human activities. Trees help to clean air by removing carbon and releasing oxygen into the air; cool the air through evaporation; prevent erosion and save water, and more.

Over the next five years, GreatAdventures will support multiple re-forestation initiatives around the world in support of a greener future.To kick off its pledge, GreatAdventures has launched its largest-ever global campaign, "Growing the future," calling on consumers around the world to join the movement by taking simple, small actions for a healthier planet. Projects in year one will focus on Ghana, Mali, the Dominican Republic, the United States, Tanzania ad China to fight climate change, drought, famine, conflict, and migration.

End of Block: Fictional Article

Start of Block: Cond1

Q8



End of Block: Cond1

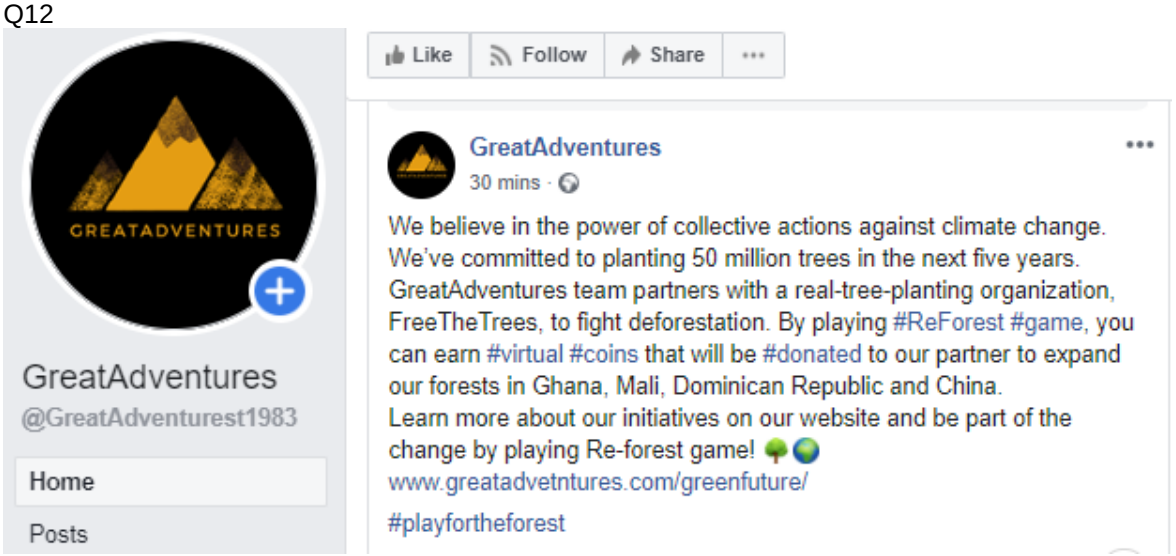
Start of Block: cond2

Q10

End of Block: cond2

Start of Block: cond3

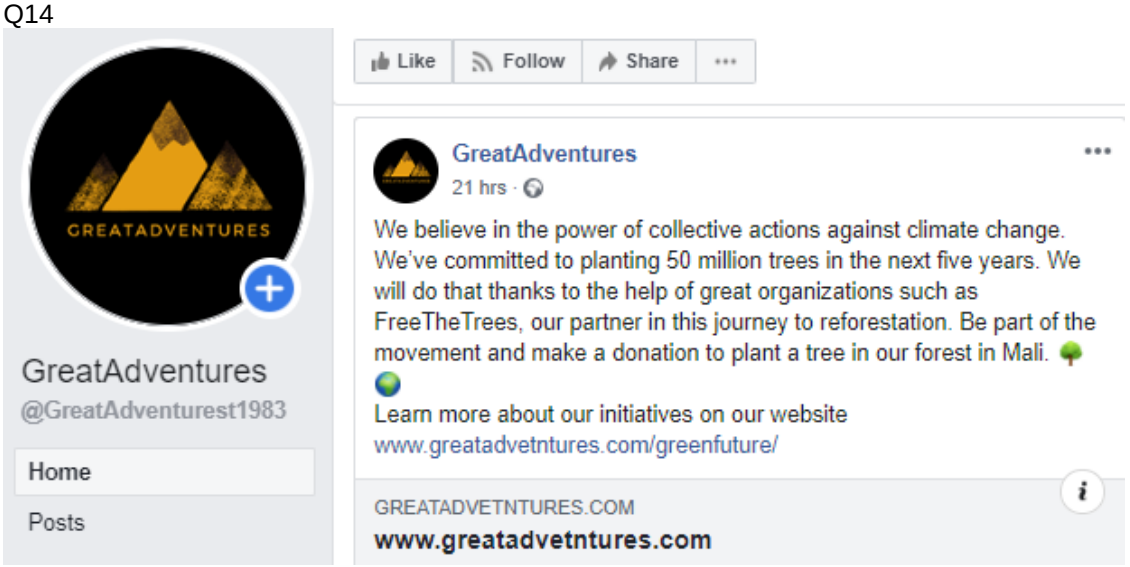
Q12



End of Block: cond3

Start of Block: Cond4

Q14



End of Block: Cond4

Start of Block: Dependent variable 1: Environmental attitude

Q15 Express your level of agreement with the following statements about GreatAdventure in respect of the material you just saw

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
The company implements programs to minimize its negative impact on the natural environment (1)	○	○	○	○	○
The company participates in activities which aim to protect and improve the quality of the natural environment. (2)	○	○	○	○	○
The company targets sustainable growth which considers future generations (3)	○	○	○	○	○
The company makes investment to create a better life for future generations (4)	○	○	○	○	○
The company supports nongovernmental organizations working in problematic areas (6)	○	○	○	○	○

End of Block: Dependent variable 1: Environmental attitude

Start of Block: Dependent variable 2: Pro-environmental behavioral intention

Q16 Would you donate to the cause with the monetary reward which you received from filling this survey?

- Extremely unlikely (1)
- Somewhat unlikely (2)
- Neither likely nor unlikely (3)
- Somewhat likely (4)
- Extremely likely (5)

End of Block: Dependent variable 2: Pro-environmental behavioral intention

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Start of Block: Moderator variable 1: Familiarity with video games

Q17 Have you ever played video games?

- Yes (1)
- No (2)

Q18 How often do you play video games?

- Never (1)
- Sometimes (2)
- About half the time (3)
- Most of the time (4)
- Always (5)

End of Block: Moderator variable 1: Familiarity with video games

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Start of Block: Moderator variable 2: Prior knowledge in matter of sustainability

Q19 Listed below are statements about the relationship between humans and the environment. For each one, please indicate whether you strongly agree, agree, somewhat agree, neither agree nor disagree, somewhat disagree, disagree or strongly disagree with it.

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
I enjoy gardening (1)	(	(	◯	(	◯		(
I personally take care of plants (2)	(	(	◯	(	◯		(
Listening to the sounds of nature makes me relax (3)	(	(	◯	(	◯		(
Nature is always able to restore itself (4)	(	(	◯	(	◯		(
Our planet has unlimited resources (5)	(	(	◯	(	◯		(
People worry too much about pollution (6)	(	(	◯	(	◯		(
The quiet nature outdoors makes me anxious (7)	(	(	◯	(	◯		(
Humans don't have the right to change nature as they see fit (8)	(	(	◯	(	◯		(

I save water by taking a shower instead of a bath (in order to spare water) (9)	(	(	○	(	○
Humankind will die out if we don't live in tune with nature (10)	(	(	○	(	○
Not only plants and animals of economic importance need to be protected (11)	(	(	○	(	○

End of Block: Moderator variable 2: Prior knowledge in matter of sustainability

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Start of Block: Manipulation check

Q20 Did you notice any elements related to gaming in the social media post?

- ○ Yes (1)
- ○ No (2)

Q21 Which platform was the corporate ads posted?

- ○ Facebook (1)
- ○ Twitter (2)

Q22 Do you have a Facebook account?

- ○ Yes (1)
- ○ No (2)

Q23 How often do you use Facebook per week?

- ○ Never (1)
- ○ Once a week (2)
- ○ 2-3 times a week (3)
- ○ 4-6 times a week (4)
- ○ Daily (5)

End of Block: Manipulation check

Start of Block: Demographics

Q24 What is your age? (Please type the year in full numbers e.g. 1995)

_____

Q25 What is your gender?

- ○ Male (1)
- ○ Female (2)
- ○ Other (3)

Q26 In which country do you currently reside?

▼ Afghanistan (1) ... Zimbabwe (1357)

Q27 What is your level of education?

- Below high school (1)
- High school (2)
- College degree (3)
- University bachelor degree or equivalent (4)
- University master degree or equivalent (5)
- PhD (6)

End of Block: Demographics