LUISS

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Master's Degree in Marketing Analytics & Metrics

Chair of Consumer Behavior

The effect of content and situational importance of eco-friendliness on willingness to pay for digital and physical goods

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Table of Contents

1. Introduction

1.1 Problem Background

In the past few years many digital goods have appeared on the market. Digital goods and services include any nonphysical item or service purchased online. Nowadays they represent a significant portion of the market with a study by Fiserv and Forrester Consulting (2019) reporting that, in May 2019, three quarters of online purchases are digital goods and services. However, there is bad news for companies offering digital products: people are willing to spend more for physical goods than a digital ones (Atasoy, O., & Morewedge, C. K., 2018). Although digital goods have numerous benefits that empower them, people still give a higher value to physical products. This is a problem for those businesses that are focusing on offering digital goods since they are not able to charge higher prices for them. The digital world seems to be perceived as ephemeral and people do not value physical and digital goods equally.

Therefore, is digitalization pointless for companies? Will people always prefer the traditional version of product? The problem is that consumers tend to value things that are tangible. The goal of this study is to bring into light important nuances regarding how and when consumers are willing to pay more for digital goods rather than physical ones. In that way, companies operating in the digital business will get an insight into when it is possible to reverse the tendency explained above.

Previous research on digital vs. physical products focused on the consumer's willingness to pay (WTP) without taking into account something that is extremely crucial nowadays: the environment involvement and how important eco-friendliness is for people. An important factor to keep in mind is that one of the intrinsic benefits of digital goods perceived by people is that they avoid pollution (Huang, H. C., 2013). It is also important to highlight the term "consumers perception". There is no absolute truth as to whether digital or physical goods are greener (The Guardian, 2014). It all depends on the context and on what is being focused on. Take as an example the book business: companies advertised their digital goods or services as eco-friendly for years with statements like "go paperless, save trees". However, there are not sufficient studies to affirm whether paper or digital is more sustainable (The Guardian, 2014). What really matter for the scope of this thesis is the perception that consumers have about digital goods. Consumers currently perceive digital goods such as e-books as more environmentally friendly than their physical counterpart an in fact, recognize "environmental sustainability" as one of their attributes. (Gilbert, J., & Fister, B., 2015). It has been observed that in recent years consumers are willing to pay more for eco-friendly goods. A recent study

conducted in the USA found that most US consumers (54%) are willing to pay higher prices for eco-friendly products with this trend increasing since the beginning of the decade: 34% in 2011 (The Integer Group – The Checkout: Issue 3.2019). These findings can be extended to a global scale thanks to another study by Nielsen (2015) which found that 66% of global consumers are willing to pay higher prices for sustainable products. Since consumers perceive digital goods as eco-friendly, they may be more willing to pay for them, as previous studies demonstrated.

In sum, while some people might care about the environment all the time, others might be situationally triggered towards environmental concerns. If people environmental concern gets triggered, they may prefer digital goods to physical products and may also be more willing to pay for the digital version since they perceive it as greener. Hence, the price gap between digital and physical goods may be reversed when eco-friendliness is triggered and becomes an important factor in purchasing behavior. Suddenly, digital goods assume a higher inner value for the customer. Is there a situation where people would care more about the eco-friendliness of the product? Think about the type of product that you can purchase. Can the content of a product (e.g. a book about how humanity is destroying Earth) turn people eco-conscious about the environment and the product itself since they are reminded that it is really important? This research focuses on the fact that when people deal with a product that has content related to the environment they may be reminded that they should actually be thinking about eco-friendliness and its related values. This is more a situational thing. For example, if you are deciding whether to purchase a book not related to the environment you are willing to pay more for the physical product but if you are about to buy a book about how humans are killing the Earth, maybe you suddenly care more about eco-friendliness and so you want to pay more for the digital version of the product. Hence, in this research a moderator variable that affects the importance given to eco-friendliness will be considered: *Product* Content. In particular, when a commodity is related to the environment it may enhance the *Situational Importance* given to eco-friendliness, which, in turn, enhances *WTP* for digital goods.

Willingness to Pays was examined in a 2 (product format: digital, physical) x 2 (product content: related to the environment, unrelated to the environment) between-subjects design. Thus, when consumers face a product unrelated to the environment, *WTP* for physical goods is expected to be higher compared to digital goods, as shown by Atasoy & Morewedge. On the other hand, when consumers deal with a product related to the environment, they suddenly become aware about it, and may be willing to pay more for the digital format of the product. They are reminded that the environment matters. In particular, as already said, when people

see this they are reminded that they should actually be concerned about eco-friendliness and its related values.

1.2 Relevance for Theory

This research is going to contribute to different streams of literature. This study has several important academic implications. More precisely, it could be placed among literature regarding consumer purchasing behavior, willingness to pay and environmental involvement. Previous research only focused on physical goods being valued more than digital ones, while this study fills the gap about which situation could enhance the relationship between digital goods and the willingness to pay for them. Indeed, studies show that people are more willing to pay for physical goods, however, previous research only provides three boundary conditions for which digital goods are not always valued lees than physical goods (Atasoy & Morewedge, 2018): when people do not expect to own or keep a good, when the digital good matches the consumer's identity and when people have low need for control (since perceived control is a key driver of higher *WTP* for physical goods). In particular, this study differs from prior research since it examines the effect of the content of the product (related vs unrelated to the environment) on the situational importance of eco-friendliness, which, in turn, enhances willingness to pay. Thus, another boundary conditions was built on theory referring to goal priming and motivation, hypothesising that *WTP* for digital goods may be triggered by cues related to environmental awareness. Goal priming can be defined as the activation of a goal by external cues, which can affect information processing and behavior in an attempt to purse the primed goal (Papies, 2016). Certain aspects like environment issues can trigger motivation. This research will contribute to these theories demonstrating that in certain situations consumers can be triggered just by the content of a product. In particular, findings will regard whether the content related to the environment could be a good cue to trigger consumers' situational importance of eco-friendliness.

1.3 Relevance for practice

Both for theory and for managers it is important to know which situations and what types of products people are actually willing to pay more for. What happens when the product triggers certain degrees of environmental consciousness? Some people value the environment more and some people less, but they are often triggered by something just walking along the street (e.g. seeing someone doing something that hurts the environment), and in that moment

they care about the environment more than they would do otherwise. People have been more aware about the environment in recent years. Therefore, having managers to know that in a certain situation, under certain circumstances (content) people are willing to pay more for digital products (vs physical) it is key to develop the right products and make sure that people are willing to pay for them. Ideally, companies that are selling digital goods would be able to sell their products at higher prices by targeting those customer willing to pay more.

Currently, there is a gap in the research regarding which specific customers and in which situations they may be more willing to spend for digital goods. This is a problem because companies offering digital goods rather than physical ones would like to charge extra prices for their products. This study wants to show that when a good is related to the environment, people willingness to pay for the digital version is going to increase. Thus, by assessing situations where people are less sensitive to change in prices for what concerns digital goods, companies could focus on delivering digital goods that contain features of environment awareness. In addition and moreover helpful, consumer environmental involvement is a relevant and hot topic nowadays. A 2017 study (Cone, 2017) found that 63% of Americans are hopeful businesses will take the lead to drive social and environmental change moving forward, in the absence of government regulation, 78% want companies to address important social justice issues, 87% will purchase a product because a company advocated for an issue they cared about and 76% will refuse to purchase a company's products or services upon learning it supported an issue contrary to their beliefs.

Hence, a product's content, when related to the environment, can be defined as something highly exploitable by companies to trigger consumers purchasing behavior and their willingness to pay. In practice, companies that are offering digital goods should include relevant features related to the environment in their products' content in order to trigger consumers eco-friendly importance which will lead them to be willing to pay more for the digital version of the good. Marketing managers could exploit this by referring to environment cues when developing ads, packages, store displays, etc., for digital goods.

1.4 Problem Statement and Research Questions

The following problem statement will guide the whole research:

What is the effect of Product Format (digital vs physical) on Willingness to Pay (WTP), mediated by Situational Importance of Eco-friendliness (SIEF) and moderated by Product Content (Unrelated vs Related to the environment)?

Thereby, the following research questions were developed: When is the relationship between *Product Format* (digital vs physical) and *Situational Importance of Eco-friendliness* enhanced? For example, is *Product Content* (related vs unrelated to the environment) increasing *SIEF* for digital goods (vs physical)?

How do consumers decide how much they are willing to pay for products? For example, Does *Situational Importance of Eco-friendliness*, which is affected by the interaction between format (digital vs physical) and content (unrelated vs related), explains *WTP* for different product formats? Are consumers more willing to pay for something that triggers the importance they give to eco-friendliness?

1.5 Research Approach and Data

The current study assessed the research questions using an online experiment with a 2x2 between subjects design related to both the independent variable (product format) and the moderator (product content). Through that experiment it was assessed whether people are willing to pay more for a digital vs a physical version of a book when it is about something related or not to the environment. It makes sense to keep a between subject design to avoid potential cognitive bias.

It was expected that when a respondent was looking at the condition with a book related to the environment he would be more willing to pay for the digital version rather than the physical one thanks to the triggering function of the product content on the importance for eco-friendliness. Thus, participants were randomly assigned to one of the two scenarios and were asked to respond to questions regarding how important is eco-friendliness to them (through continuous scale measures) after being exposed to the product, in order to compare the scores across the two treatment groups. Moreover, an assessment was conducted of their willingness to pay for the product they were exposed to.

Lastly, once a sufficient amount of responses had been collected, data analysis was carried out through a moderated mediation analysis, which is increasingly frequent in marketing and enables the evaluation of the conditional indirect effects (which is not the case when mediation and moderation are tested independently of one another) (Borau, S. et al., 2015). The analysis was performed by using both ANOVA and Hayes' Process macro (Process

model 7: the indirect effect of X on Y varies as a function of W, where W is moderating the path from X to M) (Hayes, A. F., 2017). Indeed, "this method makes it possible rigorously and simultaneously to test both mediating and moderating effects" (Borau, S. et al., 2015).

2. Theory

Before delving into the research model it is necessary to analyse previous studies and focus on the theoretical framework of this research. In particular, different studies related to the variables included in the model and the relationships among them are analysed. In that way, theory and previous findings are going to demonstrate these relationships and will guide the development of the hypotheses.

2.1 Willingness to pay

It is crucial for companies to be able to assess how much their consumers are willing to pay for the products they are offering. Indeed, *willingness to pay* (*WTP*) is the maximum price a customer is willing to pay for a product or service and can be represented by a monetary figure or a price range. *WTP* varies in the customer population. There are extrinsic and intrinsic differences in the customer population that cause variance in *WTP*. Extrinsic differences refer to factors that it is possible to determine about a person without asking them directly (age, gender, income, education and where they live). Intrinsic differences refer to characteristics of a person that you would not know without asking them directly, and are defined as "unobserved differences" (e.g. risk tolerance, desire to fit with others, level of passion about a subject) (Stobierski, 2020). In particular, for the purpose of this research, intrinsic differences among customers are what this study is going to focus on in order to evaluate how *WTP* for different product formats change based on individual's level of *situational importance of eco-friendliness*, as discussed later.

2.1.2 Willingness to pay for physical vs digital goods

Previous research has shown that consumers are willing to pay more for physical goods rather than their digital counterpart. It seems that people value physical goods more due to the higher sense of psychological ownership that they provide to consumers (Atasoy & Morewedge, 2018). In particular, physical goods' materiality makes people touch, manipulate and move those goods easier than digital goods, thereby gaining phycological ownership. Manipulating and touching objects enhance perceived control, which is a key antecedent to psychological

ownership, which influences products perceived value. Therefore, the format of the product seems to have an impact on the *willingness to pay* for it. Let's consider a newspaper subscription: after the price, its format is the second most important characteristic. The printed newspaper has a higher utility for most consumers (Berger et al., 2015). The theory around this argument, however, only focused on psychological possession, ignoring other conditions under which people do not value physical goods more than digital goods.

2.2 The moderating role of *Product Content*

As just explained, digital goods are commonly perceived as eco-friendly. However, in this study it was assessed whether the content of the product can make people even more aware of the eco-friendliness of digital goods. It is true that people consider digital goods as eco-friendly, however, if the content of the product is related to the environment it should trigger some degrees of importance of eco-friendliness. The mechanism behind that can be explained through Goal Priming theory, which is going to give some answers to show why and how people can be influenced and triggered by situations (such as a specific product content) and how different conditions affect their motivation. Indeed, it is all about how people make decisions and what triggers them. Cues, such as images representing a concept, can trigger goal-directed cognition and behaviour without the need for conscious intentions. This is what research on goal priming has shown. Indeed, as already said, goal priming can be defined as the activation of a goal by external cues, which can affect information processing and behavior in an attempt to pursue the primed goal (Papies, E. K., 2016). Interestingly, mental representations of goals can be activated even without the intervention of the conscious will. However, once activated, nonconscious goals operate the same as consciously chosen goals (Bargh et al., 2001), which means that if higher situational importance of eco-friendliness is triggered, consumers will behave in the same way of those customers who already have a positive attitude towards eco-friendliness and environmental issues.

In order to correctly apply goal primes, several principles must be followed (Papies, E.K., 2016): first, an effective goal priming operation needs to identify a target group of consumers who value the long-term investment goal. Research states that goal primes are more effective when the priming concept conveys motivation. In this case, it is important to underline how people are more and more concerned about environment issues, which means that most of the people are motivated to purchase "green" products. Consumer behaviour plays a key role in the impact that society has on the environment. Thus, a cue referring to the environment has

higher probability to trigger consumers *Situational Importance of Eco-friendliness* thanks to the higher attention that consumers pay to the environment theme.

Secondly, cues should be presented close to the decision point. In this case, the cue will be the product content itself. In particular, a book was used in the experiment and the consumer was exposed to the cover and the plot of it, which are usually the fundamental elements used to purchase this kind of product.

Thirdly, goal priming only works if the primed person knows which goal-directed behaviour can be performed to pursue the goal. The content of the product will draw the path towards the objective stimulated by the cue. In particular, environmentally friendly cues have been found to be useful in making customers engage in green behavior (Tate, Stewart, Daly, 2014): these cues should be useful to make consumers consider digital goods. Research indicates that environmental cues should also be effective even for relatively less "green-minded" people (Tate, Stewart, Daly, 2014).

Thus, when product content is related to the environment it will trigger consumers' mind developing a state of awareness that will guide their behavior. The rationale is that consumers will be triggered by the impactful environment-related content of the product and, if their awareness about the environment is enhanced, their motivation to pay more for digital goods will increase in order to act in favour of the environment. Indeed, the related to the environment content should prime consumers towards a goal of environmental sustainability, and so make them more likely to value digital goods over than physical ones.

H1a: When content is unrelated to the environment, consumers are willing to pay more for the physical goods (vs digital goods).

H1b: When content is related to the environment, consumers are willing to pay more for digital goods (vs physical goods).

Thus, unconsciously activated goals effectively guide action. In this case, cues about the environment would activate the goal to purchase products which are good for the environment. Specifically, this effect will hold for digital goods rather than physical, thanks to their eco-friendly perception.

2.3 The mediating role of *Situational Importance of Eco-Friendliness*

Past research only looked at how people are willing to pay more for physical goods than digital ones. However, would the effect described above always hold? There may be individual-level factors that affect *WTP*. Indeed, previous research on digital vs. physical products focused

on consumers' willingness to pay without taking into account something that is extremely crucial nowadays: consumers' importance of eco-friendliness . Moreover, it remains unknown whether under certain circumstances consumers are willing to pay more for digital goods.

According to previous research, the relationship between *Product Format* and WTP may be explained through *Situational Importance of Eco-Friendliness*. It is necessary to keep in mind that one of the intrinsic benefits of digital goods (such as e-books) that people perceive is that they avoid pollution (Huang, 2013). It is important to underline the term "consumers perception". Indeed, there is no absolute truth whether digital or physical goods are greener (Moodie, 2014). It depends by the context and by what you are focusing on. Take as an example the book business: companies advertised their digital goods or services as eco-friendly for years with statements like "go paperless, save trees". However, taking into account books, there are not sufficient studies to state whether paper or digital is more sustainable (Moodie, 2014). Thus, what really matter for the scope of this thesis is the perception that consumers have about digital goods. Indeed, consumers currently perceive e-books as more environmental friendly than their physical counterpart. Indeed, they recognize "environmental sustainability" as one of their attributes. (Gilbert & Fister, 2015)

Moreover, it has been observed that in recent years consumers are willing to pay more for eco-friendly goods. A recent study conducted in the USA found that most of the US consumers (54%) are willing to pay higher prices for eco-friendly products. This trend increased since the beginning of the decade: 34% in 2011 (The Integer Group – The Checkout: Issue 3.2019). These findings can be translated on a global scale thanks to another study by Nielsen (2015) which found that 66% of global consumers are willing to pay extra prices for sustainable (eco-friendly) products .

Then, if consumers perceive digital goods as eco-friendly, they will be more willing to pay for them, as previous studies demonstrated. In order to enhance the odds that these goods may be perceived as eco-friendly, *Product Content* related to the environment plays a key role in triggering consumer *Situational Importance of Eco-friendliness*. The intervention of a cue such as the content (see previous section) related to the environment, should unleash a higher *Situational Importance of Eco*-friendliness that may leads consumers to prefer digital goods compared to physical products and be more willing to pay for the digital version since they perceive it as greener. The price gap between digital and physical goods may be reversed when we are dealing with consumers who are rising their environment concerns, indeed, this study is actually predicting a reverse of *WTP* for physical vs digital goods when the condition above is met. Suddenly, the digital good assume a higher inner value for the customer. *SIEF* is

therefore a measure of the degree of activation of the goal: the more active it is, the higher the digital *WTP*. However, in order to enhance *SIEF*, the intervention of content related to the environment is necessary to trigger consumers' goal to be more environmentally aware.

H2: The effect in H1b (but not in H1a) is explained by Situational Importance of Eco-friendliness

2.4 Conceptual Model

Based on the relationships above, the following conceptual model was developed:

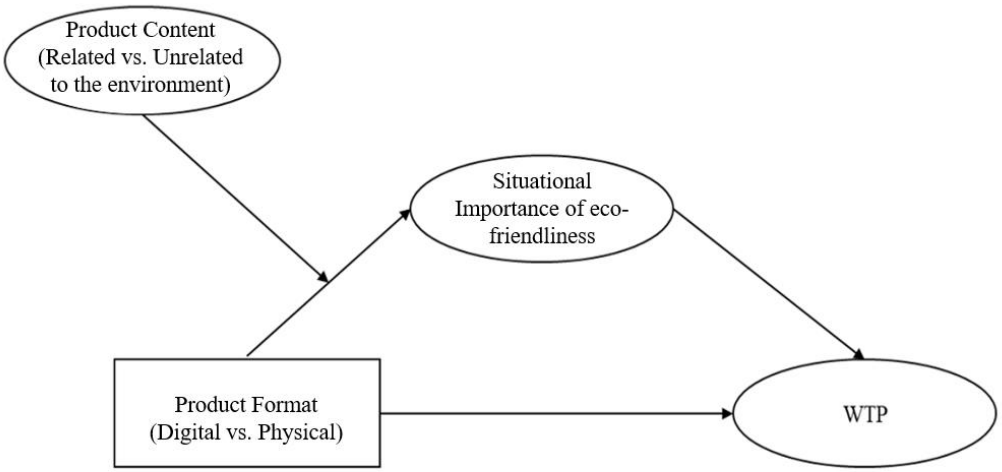


Figure 1: Conceptual Model

To recapitulate, consumers have different *WTP* (dependent variable) for digital and physical goods (independent variable). Past research found out that people are willing to spend more for a physical version of a product due to the value-enhancing effects of psychological ownership. However, what is missing in the literature is whether this relationship may be reversed. Indeed, when *Product Content* is related to the environment, the main effect is mediated by the variable called "*Situational Importance of eco-friendliness*" (*SIEF*). When the content is related to the environment it will trigger consumers by increasing their *SIEF*, which, in turn, increases WTP for digital goods. The more the product format, together with the content, enhances this *Situational Importance of Eco-friendliness*, the more the consumer is willing to pay for digital goods.

2.5 Predicted results

Hypotheses were developed referring to theory and based on the following graphs about the predictions expected from my study thanks to previous research inferences. Indeed, from previous research it is possible to expect that when things are related to the

environment, *SIEF* would be higher for digital goods and the main effect where people are willing to pay more for physical goods would be reversed.

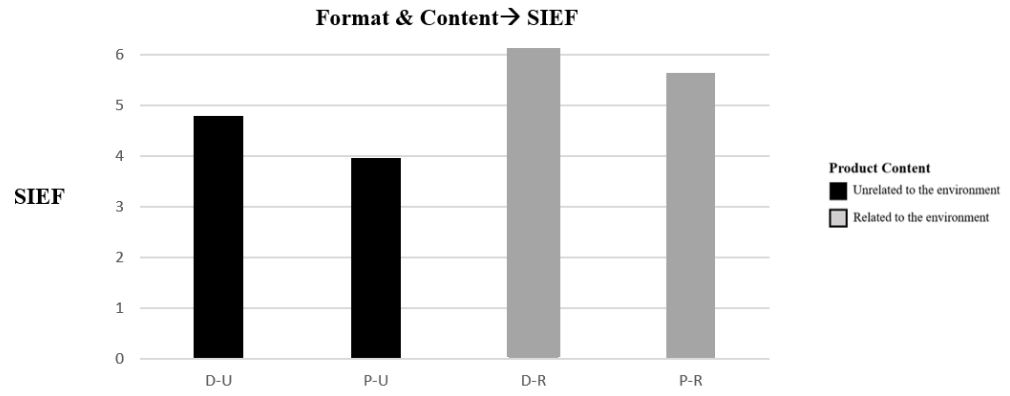


Figure 2: Predicted results (Format & Content - SIEF)

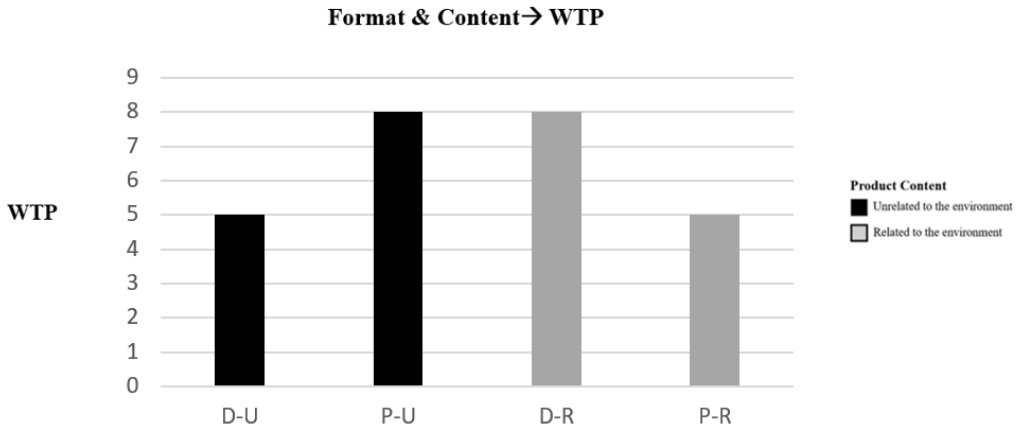


Figure 3: Predicted results (Format & Content - WTP)

3. Methodology

After an accurate review of existing literature to support the variables and their relationships in the model of this study, a research experiment was developed to measure the relationships between the conceptual model variables and to answer the research questions and demonstrate the proposed hypotheses. In particular, an online experiment was used.

3.1 Study Overview

The goal of this study is to demonstrate whether the gap between WTP for physical and digital goods may be reversed when consumers' *Situational Importance to Eco-friendliness* is activated and when the content of the product triggers some degrees of environmental concerns.

In other words, when *Product Content* is related to the environment, it may trigger consumers *SIEF* (goal priming theory). Thus, willingness to pay difference for physical and digital goods is reversed for environment-related products, due to the associated higher *SIEF*. In order to assess the above, experimental research enables to manipulate, measure and control both product format (physical vs. digital) and content (related vs. unrelated to the environment) by exposing the respondents to different conditions in order to assess how WTP changes according to these different scenarios.

Before developing the survey it was necessary to run a pre-test. The idea of a pre-test is that you have some psychological variables that you are manipulating and you want to see if that manipulation works. Are digital goods really perceived as more environmentally friendly than physical goods? This is implicit in this thesis model. Accordingly, a pre-test would provide support on the overall theorization. Through the use of pre-testing, the tension presented before about the difference of actually eco-friendliness of digital goods and how they are perceived can be resolved. Moreover, it is important to assess whether people recognize the scenario proposed in the main experiment as related or not to the environment. If they do not recognize product content as related or not to the environment, it would be feasible to slightly strengthen the manipulation thanks to some troubleshooting and, for instance, make the scenario more impactful.

3.1.2 Pre-test

The product category chosen for the study regards books. In particular, *Product Format* manipulation regarded an e-book (digital) vs a paper book (physical). Moreover, the other manipulation was referred to *Product Content*, where the book is related or unrelated to the environment. In order to assess whether the manipulation actually worked, a pre-test was run. However, since *Product Format* manipulation appears obvious and unequivocal, it was decided to pre-test only *Product Content* and whether the chosen cue for goal prime theory was actually perceived as related to the environment or not.

Participants were contacted through snowballing technique and took part on it. First, participants were divided into two conditions (*Product Content* related to the environment vs unrelated to the environment). One book per scenario was selected from the New York Times best sellers charts in order to avoid potential bias. Participants in the condition where the content is related to the environment faced a book titled “The Uninhabitable Earth: Life After Warming”. Below the summary, provided by Google Books, that was used in the manipulation and that respondents were exposed to together with the book cover (see Appendix A).

"It is worse, much worse, than you think.

The slowness of climate change is a fairy tale, perhaps as pernicious as the one that says it isn't happening at all, and if your anxiety about it is dominated by fears of sea-level rise, you are barely scratching the surface of what terrors are possible, even within the lifetime of a teenager today.

Over the past decades, the term "Anthropocene" has climbed into the popular imagination - a name given to the geologic era we live in now, one defined by human intervention in the life of the planet. But however sanguine you might be about the proposition that we have ravaged the natural world, which we surely have, it is another thing entirely to consider the possibility that we have only provoked it, engineering first in ignorance and then in denial a climate system that will now go to war with us for many centuries, perhaps until it destroys us. In the meantime, it will remake us, transforming every aspect of the way we live-the planet no longer nurturing a dream of abundance, but a living nightmare."

Further, the book not related to the environment is: “The Midnight Library”.

"When Nora Seed finds herself in the Midnight Library, she has a chance to make things right. Up until now, her life has been full of misery and regret. She feels she has let everyone down, including herself. But things are about to change.

The books in the Midnight Library enable Nora to live as if she had done things differently. With the help of an old friend, she can now undo every one of her regrets as she tries to work out her perfect life. But things aren't always what she imagined they'd be, and soon her choices place the library and herself in extreme danger.

Before time runs out, she must answer the ultimate question: what is the best way to live?"

Both the groups answered the same amount of questions about whether they consider the product in question as environmentally friendly. A 7-point Likert scale (1 = Strongly disagree; 7: Strongly agree) scale from Chen, Lin, & Weng, (2015) was used. Environmental friendliness of a product can be operationalized as the “consumers’ belief that the performance of environmental features of a product […] can reduce environmental impact.” (Chen, Lin, & Weng, 2015). The items included in the scale are: (1) You believe that this product is environmentally friendly; (2) You believe that using this product can reduce environmental impact; (3) Compared to other similar products, this product is more environmentally friendly.

One group then observed one scenario with a book related to the environment and the other one was exposed to a scenario with a book not related to the environment. Participants

were asked to look at the cover and read the adjacent summary and to indicate how much they agree on a 7-point Likert scale (1 = Strongly disagree; 7: Strongly agree) with regards the following sentence: (1) This book is related to environmental problems. The goal was to measure whether the manipulations of the product content were clear and impactful enough. Finally, age and gender were asked.

3.1.3 Pre-test results

In total, 97 respondents participated to the pre-test. The mean age of the respondents was 25-34 years old, with the youngest being 18-24 and the oldest being 65-74 years old. Moreover, 42.3% of the respondents were male, and 57.7% were female. A within-subjects (or paired-samples) t test was used to compare means differences between two dependent groups (digital vs physical) and evaluate whether digital goods are actually perceived as more eco-friendly than physical goods. Thus, through the within subjects t-test, digital good's perceived eco-friendliness was compared to physical good's perceived eco-friendliness: perceived eco-friendliness was significantly ($t(96) = 6.472$, $p = 0.000$) higher for digital products ($M = 5.03$, $SD = 1.39$) than physical goods ($M = 3.45$, $SD = 1.41$) (See Appendix B). These results confirm that people actually perceive digital goods (e-books) as more eco-friendly compared to their physical counterpart (paper books).

Moreover, an independent t-test showed that the manipulation of the product content was successful. The means were significantly different ($t(95) = -9.317$, $p = 0.000$). In particular, the product related to the environment was perceived as fairly related to the environment ($M = 5.84$, $SD = 1.11$). On the other hand, the product unrelated to the environment was legitimately perceived not related to the environment ($M = 3.19$. $SD = 1.65$) (See Appendix B).

3.2 Design

As already mentioned, an online experiment was conducted. Indeed, that type of study allows respondents to participate in the experiment in a familiar surroundings, which is believed to increase external validity (Reips, 2000). Moreover, participants were randomly allocated to one of the conditions of the experiment, reducing, in that way, extraneous influences. In this section more insights will be provided about stimuli, manipulations, measures and covariates.

3.2.1 Stimuli

The product category used in the experiment is the one referring to books. In order to compare how consumers react to digital and physical goods this is the best product category to run an experiment with. The rationale concerns companies offers and consumers behavior: digital goods such as music and video are usually distributed through digital platforms where consumers pay a subscription to get various products. On the other hand, e-books are still mostly bought per unit rather than under subscription, resulting in a more truthful comparison with their counterpart (paper books) and a more correct and prices comparison of *WTP*.

Most importantly, nowadays all music productions are available on platforms such as Spotify. Films and documentaries are usually published on DVDs and TV/digital platforms. However, the latter increased popularity in recent years: in 2019 DVD sales dropped about 86% since 2008 while, since 2011, platforms like Netflix, Hulu and HBO have seen sales balloon 1,231% to $12.9 billion (Witthen, 2018). According to the American Association of Publishers (AAP), physical books took 85.7% of the market share in 2019, while e-books took only 14.3%. Therefore, in order to compare WTP for physical vs digital goods it is more appropriate to focus on a product category which is still popular and in vogue such as books.

3.2.2 Manipulations

Choosing a within or a between design rises some issues when referring to willingness to pay (WTP) (Charness, Gneezy, & Kuhn, 2012). Undeniably, within designs offer the researcher twice as much data with the same number of individuals (Charness, Gneezy, & Kuhn, 2012). However, respondents have a reference comparison when responding to the second question. Indeed, Grice (1966) criticizes within experiments in psychological studies for non-independence of questions and tasks. Moreover, the second scenario is influenced by the first, but the first is influenced by none (Poulton ,1973).

Also, exposure to multiple scenarios has psychological consequences (Charness, Gneezy, & Kuhn, 2012), which may influence the assessment of the *Situational Importance of Eco-friendliness* variable. A within design would not make possible to assess whether the importance of eco-friendliness is actually influenced by the digital or physical version of a book.

As a result, this study focused on a 2 (digital vs physical format) x 2 (related vs unrelated to the environment) between subjects design where each participant is faced with only one of the four conditions, which are physical related, physical unrelated, digital related and digital unrelated.

Indeed, in their studies about WTP for physical vs digital products, Atasoy, & Morewedge (2018) conducted their experiments using between subject designs. Distributing participants randomly helps the researcher to account for influences that are beyond his control. In that way, the risk of these influences is spread over the experimental conditions. Random distribution of participants helps accounting for influences beyond the researcher's control by also randomly dividing these influences over the various experimental conditions, hence spreading out the risk of these influences confounding the findings over several groups (Reips, 2000). Hence, participants are randomly assigned to one of the four conditions.

3.2.3 Measures

Participants were asked to respond to questions regarding *Situational Importance of Eco-friendliness* (through continuous scale measures) in order to compare the scores across the groups. An assessment of their willingness to pay for each of the two scenarios (digital vs physical format) was conducted. I had expected that when a respondent looks at the condition with a book on the environment, willingness to pay for the digital version (vs physical) would increase thanks to the triggering function of the product content on the importance for eco-friendliness.

The main variables such as WTP (DV) and *Situational Importance of eco-friendliness* (M) are measured through the use of existing validated marketing scales. The rationale behind scales selection is explained below.

Willingness to pay (WTP): Each participant would report how much he or she is willing to pay for one out of the four scenarios. In particular, an open ended response box is provided and participants enter the maximum amount of money they would be willing to pay for the good (Atasoy, & Morewedge,2018; Homburg, Koschate, & Hoyer, 2005). This measure is based on the contingent evaluation method developed by Mitchell and Carson (1989) in economics. Consumers directly express their WTP for a product responding to the following question: "Please indicate the highest price you would accept to pay for this offer".

Situational Importance of eco-friendliness: Before selecting an appropriate scale to measure this variable it is necessary to make a distinction between "trait" and "state" variables. Trait measures are something that someone feels all the time (chronically). This is their personality trait, i.e. who they are as a person. For instance, if eco-friendliness is always important to that person, this is trait measure and if you have a trait measure your manipulation are not going to affect it very much. Nothing you tell me is going to change who I am as a person.

In contrast, a state variable is something I feel right now. It is a current situation. For example, if you just told me that over fishing is a huge problem, now I care about over fishing and I do not want to order salmon at the restaurant anymore. So, since this study wants to find a mediation effect related to the environment condition, it is necessary to find a state measure of situational eco-friendliness concern. In other words, how much does matter in this moment, four this purchase, for you right now, that the good is environmentally friendly. Indeed, *SIEF* is intended to be a measure of how active a particular goal (such as purchasing green products) is.

Therefore, *Situational Importance of Eco-friendliness* measure is evaluated using a 7 point Likert scale adapted from Böttger, Rudolph, Evanschitzky, & Pfrang, T. (2017) customer inspiration measure and referred to the eco-friendly theme by using Chen, Qiu, Xiao, He, Mou, & Siponen (2021) consumption attitude of eco-friendly product scale. The following items were used: (1) I was inspired to buy eco-friendly products; (2) I felt a desire to buy products that do little harm to the environment; (3) My interest to buy eco-friendly products was increased; (4) I was motivated to buy eco-friendly products; (5) I felt an urge to protect the environment.

3.2.4 Manipulation Check

In order to get better quality results, a manipulation check was included in the survey for *Product Content.* The scale is the same as the one used in the pre-test (see section 3.1.2). In that way, it would be possible to assess the robustness of experimental results based on the subjects' attention to the treatment (Aronow, Baron, & Pinson, 2019).

3.2.5 Covariates

It is important to add covariates to the model since, without them, it would suffer from "omitted variable bias", which would be harmful for the research itself. Indeed, omitted variable bias could inflate or deflate the size of effects and reverse their sign. Statistically control for potential covariates is the solution to that issue. As a result, it is necessary to select and include them as control variables, which are defined as variables that may affect the result of what is being studied. These variables are not influenced by any of the variables in the model but influence those. In this research, the following covariates were selected: *Attitude towards the product; Attitude towards the format (physical vs. digital); Attitude towards the content (related to the environment); Gender; Age.*

Attitude (i.e. towards the product, format, content) can be defined as a set of beliefs and emotions that consumers have and that lead to changes in their behavior, meaning that it can affect *WTP*. Attitude towards the product, format and content was measured through four statements on a 7-point Likert scale (1=Strongly Disagree; 7=Strongly Agree) used by Chang (2017). That scale is "general" since the statements are usable with a wide range of objects and can be adapted for product; format and content.

However, a good covariate should respect several criteria (Meyvis, & Van Osselaer, 2018), also known as the assumptions of using covariates and test for them. First, it should be strongly correlated with the dependent variable ($r > 0.2$). A priori, it is necessary to select covariates that are expected to be highly correlated with the DV.

Next, the manipulation of the independent variable should not cause differences in the level of the covariate. Therefore, it is necessary to measure the covariate before the manipulation or use covariates that are not likely to be influenced by the manipulation. In this study, the covariates used refer to the general traits of the person, which are not influenced by the single manipulation (product/content) at the moment respondents are exposed to it.

Moreover, the measurement of the covariate should not influence the measure of the dependent variable. That is not the case since covariates are measured after the dependent variable.

Finally, there should be no interaction between covariate and manipulation, meaning that the relationship between the covariate and the dependent variable should not differ between conditions.

3.2.6 Procedure

The main experiment was structured through the online software Qualtrics. First, an introduction to the study is presented to the respondents, who are next exposed to one out of the four random conditions. Then, an attention check was included to monitor whether the participants were focused or not and to improve the quality of the answers. After that, the situational importance of eco-friendliness and WTP were assessed (in random order). Furthermore, a manipulation check was added to test the effectiveness of the content manipulation. Finally, questions regarding the covariates concluded the questionnaire. Participants were thanked and informed that they had successfully completed the survey.

3.3 Sampling

Selecting the correct sample in order to gather higher quality data is key. The target population for this study includes all people 18 years old or older. At this age people are adult enough to diligently consider how much they are willing to pay for a product. Moreover, interviewing people from different countries would cause a lack of sample homogeneity and non-sampling error would arise. Books prices vary depending on the country, as well as people's salaries and habits, resulting in a biased measure of *WTP*. A Homogeneous sample might help *WTP* showing significant results. Consequently, respondents were collected from the same country (Italy).

3.3.1 Size

In order to determine which sample size to rely on, establishing the expected effect size, the desired significance level (alpha) and the number of groups within the experiment is essential.

In this experiment an F-test for ANOVA was used, which means that Cohen's effect size was selected. In this case an effect size of 0.25 was estimated as it indicates a medium difference between the mean of treatment group and the mean of control group. Research often uses a 0.05 value for alpha level (significance level), which is the probability of a type I error, which consists of supporting the alternate hypothesis when the null hypothesis is true. Moreover, a high beta level, which represents the probability of a type II error (not supporting the alternate hypothesis when the alternate hypothesis is true), lowers the probability that this error type occurs. A power of the test equal to 0.95 was presumed. Finally, the experiment was distributed among four different groups.

Thus, through the use of G*Power a sample size of 212 respondents was determined, which satisfies the rule of thumb of having at least 50 participants per cell for a 2x2 between subjects design.

3.3.2 Source

The sampling technique applied in this study to gather responses is the snowball non-probability sampling, for which the selection of additional respondents is based on referrals from initial respondents chosen on personal network. Respondents were mainly invited through WhatsApp links, but also other social networks.

3.4 Analysis

First, a preliminary data analysis was conducted in order to check whether data cleaning was needed. Then, the analysis focused on the reliability of measurement scales. To assess whether the manipulation worked, a manipulation check was run through ANOVA. Then, it was assessed whether randomization was sufficient.

As regards the main analysis, assumptions for ANOVA, moderated mediation analysis and significance of covariates were checked. Finally, to determine the effect of product format (IV), product content (W) and the importance of eco-friendliness (M) on WTP (DV) a 2x2 between subjects ANOVA moderated mediation analysis was run. The analysis was first conducted through ANOVA and then through the use of Process Model 7 on SPSS.

4. Results

4.1 Overall Structure

Throughout this chapter, the results of the data analysis are exhibited: after a brief focus on sampling, it follows preliminary data analysis, where data cleaning, manipulation, and randomisation checks were performed. After this, the assumptions for the analysis and the analysis itself were run. Finally, results are showed and discussed focusing on the model's relationships and hypotheses.

4.1.2 Second Pre-test

Before running the experiment a pre-test consisting of a check of the comprehensiveness and flow of the questionnaire was conducted. Ten respondents gave personal feedback about the survey and results showed that the questionnaire worked fine and questions were clear enough to gather reasoned and truthful responses. The only weakness of the questionnaire was the length of the text for the conditions. However, decision was made to keep it as it was presented since respondents completed the survey in a focused and proactive way.

4.1.3 Study

The main study represents a conclusive and causal research design that follows a 2 (digital vs physical good) x 2 (related vs unrelated to the environment) between-subjects design. Indeed, each participant is faced with only one of the four conditions.

The experiment consisted of a Qualtrics experimental survey. Participants were first exposed to one of the four conditions and asked to carefully look at the book cover and read the plot right below. Then, participants had to take an attention check with those failing it excluded from the analysis. Next, respondents answered questions regarding the *Situational Importance of Eco-friendliness* and their *Willingness to Pay* for the product in the condition they were exposed to. The order of the mediator and the dependent variable was randomised. Indeed, measuring the mediator before the DV might have affected the responses. Then, the manipulation check used in the first pre-test was repeated, and finally the covariates were assessed.

4.2 Sample

As explained above, only consumers aged 18 and above were interviewed due to their ability to make thoughtful choices. Thus, 671 responses from Italian consumers were collected over a period of 5 days. As assessed in the previous chapter, at least 212 participants were needed for the experiment. However, only 343 out of 671 respondents actually completed the questionnaire. Moreover, 5 responses were deleted due to their "preview" nature (they were not real data but checks to assess whether the survey worked fine) and 3 participants were excluded from the analysis as they were under 18 years of age.

4.3 Data and analysis

4.3.1 Preliminary data analysis

4.3.1.2 Data Inspection and Sampling

The first thing to do before starting any analysis is to observe the data and check whether it is necessary to clean the data set in order to manage information in a proper way. In fact, the collected raw data could have issues to be solved, such as respondents not paying attention to the questions and/or possible outliers that may affect results.

To measure whether the participants were paying attention to the stimuli, an attention check was included in the questionnaire in order to exclude participants who answered without focusing sufficiently. In this way it is possible to get better quality responses and results. Knowing that an attention check should be used only if, without it, the task could not be completed properly (Prolific, 2018), as it was in this case, people were asked which product format they had just been exposed to (physical paper book; digital e-book; not sure). If their answer was wrong they were excluded from the analysis. If they were not sure they were also

excluded to prevent any chance answers. Participants should not be differentially excluded between conditions (Meyvis & Van Osselaer, 2018). In this way, a chi-square test was performed to examine the relationship between those who passed the attention check and those who failed it amongst the different groups. The relationship was not significant, X^2 (1, N = 342) = 3.1, p = 0.371, which means that if the responses were deleted for those who failed the attention check, there was not differential exclusion of participants between conditions (see Appendix C.1). Thus, 225 respondents were retained after the attention check.

At this point, potential outliers present in the *WTP* measure were checked through the inspection of a boxplot of the dependent variable values. As a result, 3 outliers were excluded from the study (WTP = 65.00 €; 89.00 €; 100.00 €) (see Appendix C.2)

After data cleaning, the remaining sample size for the analysis was 222 respondents, which is above the minimum (n = 212) established through the use of G*Power. Moreover, a minimum of 53 and a maximum of 59 participants was assigned to each condition, resulting a fairly equal partition of the treatment groups (C1 = 57; C2 = 53; C3 = 53; C4 = 59). The minimum age of the respondents was 18 years old and the maximum 81 years old. The mean age was 43,30 (SD = 15,67). In addition, 35.6% of the respondents were male (n = 79) and 62.6% were female (n =139) (see Appendix C.3).

4.3.1.3 Reliability of Measurement Scales

A reliability and validity test of the multi-item scale for *Situational Importance of Eco-friendliness* was performed through the following steps. First, a check was taken to see whether any missing values were present and this check proved negative. Next, Cronbach's Alpha of the multi item scale is $\alpha = 0.934$, which means that the scale provides good internal and external consistency ($\alpha \geq 0.9$) (George & Mallery, 2003) (see Appendix C.4).

4.3.1.4 Manipulation Check

This study consisted of four conditions composed by two levels of *Product Format* x two levels of *Product Content.* In order to assess whether the manipulation was successful, a manipulation check such as the one in the first pre-test was conducted.

To analyse the manipulation check a two-way ANOVA was run to compare means across different groups (see Appendix C.5). The effect of Format ($F(1,218) = 0.290$, $p = 0.591$) and its interaction with Content ($F(1,218) = 0.713$, $p = 0.399$) were not significant, whereas Content was significant ($F(1,218) = 173.251$, $p = 0.000$), meaning that the content manipulation was successful. In particular, those who experienced the scenario with a paper book unrelated

to climate change expressed a perceived relativeness to climate change where M = 3.23 (SD = 1.857). Meanwhile, results from those exposed to the related to climate change paper book evidenced M = 6.05 (SD = 1.999). Moreover, when e-book was unrelated to the environment showed M = 3.26 (SD = 1.849) while the mean score was higher when the book was related to the environment (M = 5.77, SD = 1.203). Thereby, subjects included in the unrelated to the environment condition did indeed perceive the book as unrelated to the environment. Instead, those exposed to the related to the environment condition recognized it as related to climate change.

4.3.1.5 Randomisation Check

Assessing whether there are significant differences for what concern participants demographics between the experimental groups is necessary. If it is not the case the results might be confounded. ANOVA was performed with *Age* as the dependent variable (see Appendix C.6). No significant difference was revealed (*Age*) between the groups. Indeed the effect of *Format* ($F(1,218) = 0.282$, $p = 0.596$), *Content* ($F(1,218) = 0.105$, $p = 0.747$), and their interaction ($F(1,218) = 0.001$, $p = 0.974$) are not statistically significant.

Differences in gender were checked by means of chi-squared tests. The Likelihood-ratio test could accept the null hypothesis with a 95% confidence level ($LR (9, n=222) = 16.727$, $p = 0.053$). I accept H0 (There is not a significant difference). There is no difference between the four groups proving that randomisation was successful.

4.3.2 Main Analysis

4.3.2.1 Assumptions for ANOVA

In order to analyse data using a two-way ANOVA, data must be checked to make sure it meets the six assumptions required to run a two-way ANOVA.

First, the dependent variable should be measured at the continuous level. Which is the case, both when considering *SIEF* and *WTP* as the DV.

Secondly, the independent variables should each consist of two or more categorical, independent group. Thus, the assumption was met. Indeed, *Product Format* and *Product Content* both consist of two independent levels.

Thirdly, it is necessary to have independence of observations. Indeed, observations in each group should have no relationship. Thus, given the between-subjects design of this study, observations were assumed to be independent.

Fourthly and fifthly, there should be no significant outliers and the dependent variable should be approximately normally distributed for each group combination. For every combination of independent variables, the DV (*SIEF*) is not normally distributed. Moreover, 5 outliers were detected (see Appendix D.1.2). According to Hawkins (1980), data should be trimmed when there are typographical errors, measurement errors and/or contaminated distribution. From the data, it cannot be affirmed that these outliers derive from those errors. Indeed, they are all legitimate values. It is just the nature of data. There was no legitimate reason to delete those cases. I ran Cook's Distance, where if any values exceed 1 it is considered an influential outlier (see Appendix D.1.2). None of the outliers exceed 1, which means that there were no influential outliers. So there was no justification or reason to drop those cases. As for normality, there is no problem is this assumption is not met since the DV should be approximately normal. Indeed, two-way ANOVA is quite robust to violations of normality. Hence, the assumption can be violated and still provide valid results.

A check for normality and outliers was made when considering *WTP* as the dependent variable (see Appendix D.1.3). Normality assumption was violated for all the conditions apart from the first. However, again, two-way ANOVA is robust enough to deal with normality assumption being violated. Cook's Distance was run to check whether the seven outliers detected were influential or not, and the result proved that they were not influential. No outlier had a distance larger than 1. So there was no legitimate reason to exclude them. Consequently, they were not outliers but extreme, legitimate, observations with a low impact on the computational results.

Sixthly, as regards the two way ANOVA for Product Format, Content and SIEF, when Checking Levene's Test of Equality of Error Variances, the null hypothesis is rejected ($p < 0.05$), which means that the assumption of homogeneity of variance was being violated for this analysis (see Appendix D.1.4). The error variance for the independent variable was not equal across the groups. This was a limitation for the analysis but two way ANOVA is robust enough to violate that assumption. Thus, it would not stop the analysis but it is something to be aware of. On the other hand, the assumption of homogeneity of variance was met through a Leven's Test check ($p > 0.05$) for the two-way ANOVA with *WTP* as the dependent variable (see Appendix D.1.4).

4.3.2.2 Assumptions For PROCESS

Using Hayes PROCESS Macro for SPSS assumptions have to be tested as well. In particular, there are three important assumptions to consider: Normality, Homoscedasticity and

Linearity. In order not to be troubled by normality, bootstrapping was used for all regression coefficients. Next, it is not necessary to worry about homoscedasticity if robust standard errors (HC4) are used. Finally, linearity is automatically met for binary (dummy) variables.

4.3.2.3 Covariates

In order to include covariates in the analysis, it is necessary to first test whether the following statistical assumptions held: the dependent variable should be measured at the continuous level, which is the case of *WTP*. Independent variables should consist of two or more categorical independent groups, which is the case of *Product Format* and *Content* manipulations. The covariates have to be continuous but, if they are categorical it is necessary to create dummy variables, as in the case of *Gender.* Finally, there should be independence of observations, as in the case of between subjects design. Moreover, other assumptions should be met (Meyvis, & Van Osselaer, 2018): correlation with the dependent measure ($r > 0.2$), no interaction with manipulation and no influence of the manipulation on the covariate if the latter is measured after the former.

A correlation analysis was run between each covariate and the dependent variable (see Appendix D.1.5). The correlation between the dependent variable and *Attitude towards the product* ($r(220) = -0.037$, $p = 0.583$), *Attitude towards the Format (physical)* ($r(493) = 0.094$, $p = 0.165$), *Attitude towards the content (Related)* ($r(220) = 0.097$, $p = 0.149$), were not significant. On the other hand, the correlation between *Attitude towards the Format (digital)* ($r(220) = -0.172$, $p = 0.010$) and the dependent variable was significant but the variables were not strongly correlated. Thus, all the covariates above violated the first assumption. Moreover, the correlation between Age and *WTP* was not significant ($r(220) = 0.092$, $p = 0.172$), as well as *Gender*: *male* ($r(220) = -0.032$, $p = 0.638$), *female* ($r(220) = 0.006$, $p = 0.934$), and p*refer not to say* ($r(220) = -0.097$, $p = 0.151$). However, *third gender* showed a significant strong correlation with the dependent variable ($r(220) = 0.229$, $p = 0.01$). In the end, none of the covariates apart from *Third Gender* met the first assumption, meaning that they had to be excluded from the analysis (Meyvis, & Van Osselaer, 2018).

Now, it was necessary to check whether *Third Gender* also held the assumption regarding no interaction with manipulation and a three way ANOVA was necessary. However, *Third Gender* only had two observations in the total sample, making impossible to run the analysis on it. Accordingly, none of the covariates were included in the analysis.

4.3.2.4 ANOVA

First, the relationships in the model by means of ANOVA was analysed. Then, the whole model was tested through PROCESS.

Format – Importance of Eco-friendliness (Moderated by Content)

A two-way ANOVA with *Situational Importance of Eco-friendliness* as the dependent variable was run.

When *Product Content* was related to the environment, *SIEF* was higher (M = 5.47, SD = 1.00) than when the content of the product was unrelated to the environment (M = 4.39, SD = 1.58). However, this score was even higher when the product related to the environment was presented in the physical format (M = 5.64, SD = 0.83) rather than digital (M = 5.30, SD = 1.14), which was not what was expected.

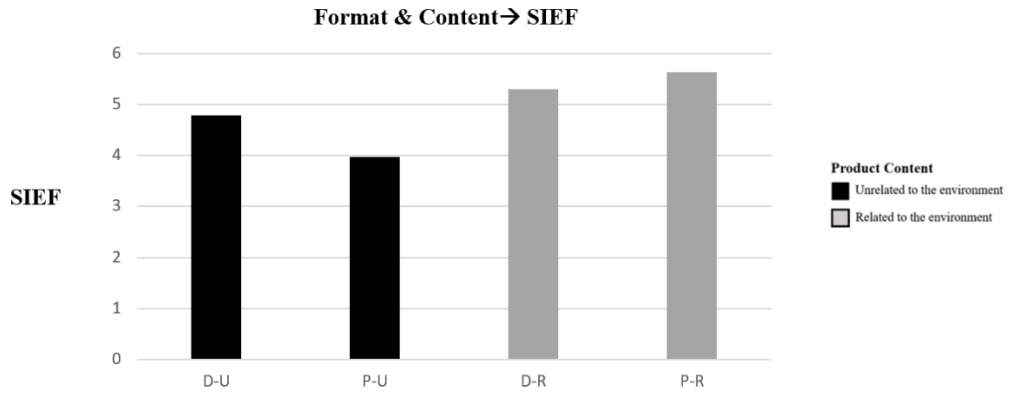


Figure 4: SIEF mean scores

The two-way ANOVA with *Situational Importance of Eco-friendliness* as the dependent variable (R^2 = 0.191) showed a not-significant main effect between *Product Format* and *SIEF* (F(1,218) = 1.932, p = 0.166). However, the results showed a significant main effect of the *Product Content* (F(1.218)=39.508; p = 0.000.) and its interaction with *Product Format* (F(1,218)=11.063; p=0.001) on the mean *Situational Importance of Eco-friendliness* score (see Appendix D.2.1). Thus, *Product Format* alone does not impact *Situational Importance of Eco-friendliness*. However, when *Product Content* is taken into consideration, their interaction has an impact on *Situational Importance of Eco-friendliness*.

Since there was a significant interaction, it was necessary to look at simple effects, by first looking at the two levels of *Format* and then of *Content*. In practice, looking at the two levels of *Product Content*, when content is unrelated to the environment, there was a significant effect (F(1,218) = 11.213, p = 0,001), which means that there is a significant difference in *Product Format* levels (physical vs digital) on *SIEF*. Indeed, digital goods (vs physical) unrelated to the environment, lead to higher *SIEF*, which can be explained by the fact that

digital goods are actually perceived as eco-friendly (Huang, 2013; Gilbert & Fister, 2015). However, when *Content* was related to the environment, the effect was not significant ($F(1,218) = 1.859$, $p = 0.174$), meaning that for this level, there is no significant difference between physical and digital goods on *SIEF*. Both digital and physical goods lead to higher levels of *SIEF* when related to the environment.

When looking at *Format* levels across *Content*, the simple effect was significant both when it was physical ($F(1,218) = 45.815$, $p = 0.000$) and digital ($F(1,218) = 4.415$, $p = 0.037$), which means that both physical and digital goods have a positive impact on *SIEF* when content is related to the environment. In sum, both related to the environment physical and digital goods lead to higher levels of *Situational Importance of Eco-friendliness*. This means that goal priming intervention did work, leading to higher levels of situational importance of eco-friendliness. In contrast to what it was assumed, this effect was not enhanced only for digital goods, but also for physical ones.

In sum, either a digital product or a product that is related to the environment is enough to trigger *SIEF*. In fact, digital goods unrelated to the environment triggers *SIES.* Moreover, comparing physical unrelated to the environment and physical goods related to the environment, the latter lead to higher *SIEF*. Equally, comparing digital goods unrelated to the environment and digital goods related to the environment, the latter trigger *SIEF*. Hence, when content is related to the environment, it triggers *SIEF*, regardless of the format of the product, which means that content is playing such a huge role as a cue to trigger *Situational Importance of Eco-friendliness*. The only case were people do not care about the environment, is when nothing triggers them, neither content and format.

Product Format - Content* and *WTP

At this point, Two-way ANOVA with *WTP* as the dependent variable was conducted. (see Appendix D.2.2). The effect of *Product Format* on *WTP* was significant ($F(1,218) = 9.203$ $p = 0.003$), in particular *Willingness to Pay* was higher for the physical product ($M =$ euro 16.46, $SD = 7.75$) than the digital one ($M = 13.26$, $SD = 7.97$). Moreover, *Content* ($F(1,218) = 3.175$, $p = 0.076$) had a marginally significant effect on *WTP*, meaning that consumers are willing to pay more for products related to the environment ($M = 15.87$, $SD = 9.29$) compared to goods unrelated to the environment ($M = 13.85$, $SD = 6.39$). However, the interaction between *Format* and *Content* ($F(1,218) = 0.000$, $p = 0.999$) did not show a significant effect on the dependent variable, meaning that the gap in WTP was exactly the same when comparing physical and digital goods (unrelated and related to the environment).

Even though there was no significant interaction effect, it is still interesting to look deeper into the simple effects (Appendix D.2.2) to understand whether the effect of one factor on the outcome measure is different depending on the levels of the other factor. In particular, when product format was physical ($F(1,218) = 1.577$, $p = 0.210$) there was no difference in willingness to pay for content unrelated or related to the environment. Same results were showed for digital goods ($F(1,218) = 1.598$, $p = 0.208$). In other words, both when the format is physical and digital, there is no difference in willingness to pay for unrelated or related to the environment goods.

On the other hand, both when the content was unrelated ($F(1,218) = 4.408$, $p = 0.037$) or related to the environment ($F(1,218) = 4.345$, $p = 0.038$), there was a significant difference on *WTP* for physical and digital goods, in particular consumers are willing to pay more for physical products than digital ones, both when content is unrelated and related to the environment.

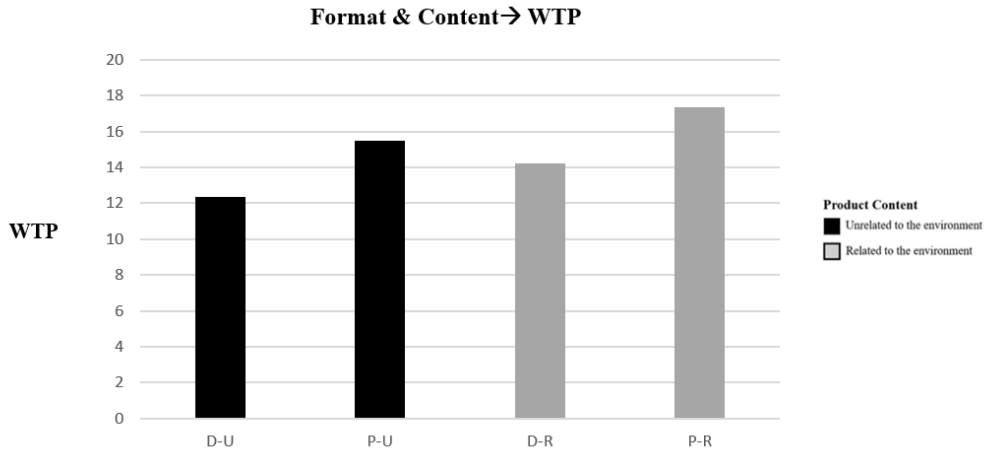


Figure 5: WTP mean scores

4.3.2.5 Moderated Mediation Analysis

At this point, to assess the entire model, a moderated mediation analysis with *Situational Importance of Eco-friendliness* as the proposed mediator and *Product Content* as the moderator was conducted.

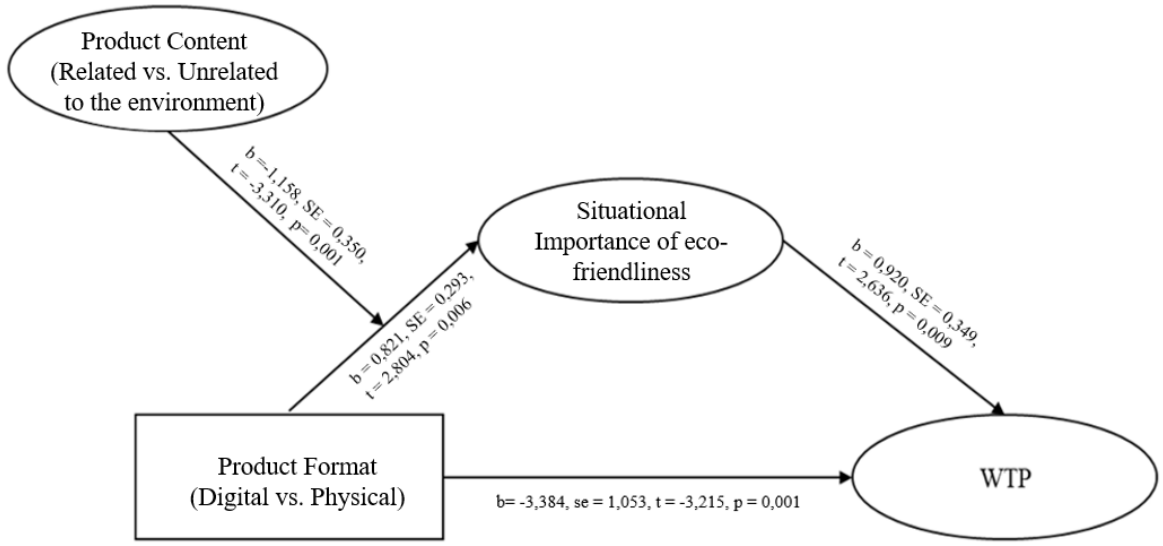


Figure 6: Model and respective results

From the results of the PROCESS Model 7 matrix (see Appendix D.3), the index of moderated mediation was observed first. This index tests whether the indirect effect is moderated by the moderator. To test whether this index is significantly different from 0, PROCESS constructs a bootstrap confidence interval., if this is significant (0 is not part of the interval) then it means that there is a significant index of moderated mediation and then a moderated mediation occurs. In particular, if both limits are positive or negative, it is significant and a moderated mediation is confirmed. In this case, that index was significant (95% CI: [-2.140, -0.163]. Thus, it was necessary to look at the indirect effect (*Format → SIEF → WTP)* at different values of the moderator *(Content)*. When the *Content* was related to the environment, there was not a significant effect (95% CI: [-0.785, 0.044] and SIEF did not explain the difference in WTP. However, when *Content* is unrelated to the environment, there was a significant effect [95% CI: [0.095, 1.587], thus *SIEF* did explain the difference in WTP (H2 rejected). Apparently, goal priming through the content related to the environment cue was not necessary as a means of increasing *Situational Importance of Eco-friendliness*. Indeed, being exposed to a digital good may enhance *SIEF* due to its inner eco-friendly perception, confirming results from ANOVA. Overall, consumers' *Situational Importance of Eco-friendliness* explains the relationship between Product Format and WTP only when the content is unrelated to the environment (H1b rejected). Moreover the direct effect of *Product Format* on *WTP* was significant and negative (b = -3.384, SE = 1.053, t = -3.215, p = 0.001). Thus, as expected from theory, generally digital format has a negative effect on WTP, while physical goods have higher *WTP* (H1a confirmed).

Now, the focus here was on the "a path" of the model, where the outcome variable is the mediator *Situational Importance of Eco-friendliness.* In particular, *Product Format* had a significantly positive effect on mediator (b = 0.821, SE = 0.293, t = 2.804, p = 0.006). Showing that digital goods lead to higher *SIEF* thanks to their inner benefits. The interaction between the independent variable and the moderator was negatively significant (b =-1.158, SE = 0.350, t = -3.310, p= 0.001), so there is a moderated a path, and 4.1% of the variance of the mediator was explained by the interaction between IV and W. However, looking at the indirect effect at different values of the moderator, content unrelated to the environment was significant with a positive effect (b = 0.821, SE = 0.293, t = 2.804, p = 0.006) meaning that when content is unrelated to the environment there is a difference in *SIEF* measure for physical and digital goods, in particular, digital goods unrelated to the environment increase consumers' *Situational Importance of Eco-friendliness*. Moreover, content related to the environment had a marginally significant negative effect (b = -0.337, SE = 0.191, t = -1.761, p = 0.08), in contrast to the ANOVA results. In other words, when the interaction coefficient is negative, as in the case of that a path, the effect of the combined action of two predictors is less than the sum of the individual effects: the association between one of the predictors (IV) and the DV decreases if the other predictor increases, meaning that when the content is related to the environment, there is a difference in *SIEF* when dealing with physical or digital goods, in particular consumers situational importance of eco-friendliness is higher when facing physical products related to the environment rather than digital ones. In this study it was hypothesised that when content is related to the environment, digital goods leads to higher *SIEF*, however, what happens is that, when related to the environment, physical goods lead to higher levels of *SIEF* (H1b and H2 rejected).

Next, it is necessary to examine at the "b-path" and "c'-path". First, as already reported, significant positive mediation (b-path) was assessed (b = 0.920, SE = 0.349, t = 2.636, p = 0.009), which means that *SIEF* is a significant predictor of *WTP*. As already explained above, also the direct effect (c' path) was significant (b= -3.384, se = 1.053, t = -3.215, p = 0.001), confirming previous research findings about higher *WTP* for physical goods (H1a confirmed). Bootstrap results assesses whether the results looked at previously for the two parts of the model are robust when it comes to possible violations of normality. In particular, each result has been confirmed. Indeed, a-path (95% CI [-1.843, -0.465]), b-path(95% CI [0.186, 1.564]) and c'-path (95% CI [-5.388, -1.270]) were significant.

Overall, among the hypotheses, H1a was the only one confirmed. Indeed, H1b and H2 had to be rejected. However, in the next section a discussion about interesting results worthy of consideration is presented.

4.4 Discussion

Contradictions emerged when comparing the results of ANOVA with those of bootstrapping. ANOVA revealed that *Product Format* effect on *Situational Importance of Eco-friendliness* was not significant. On the other hand, bootstrapping revealed that there was a positive significant effect between these two variables, with digital goods (vs physical) leading to higher levels of *SIEF*. Moreover, ANOVA revealed that when the content of the product is related to the environment, the outcome on *SIEF* shows no difference for physical and digital products. On the other hand, bootstrapping revealed that there is a marginally significant difference and, in particular, when physical products (vs digital) related to the environment lead to higher *SIEF* levels. Thus, it is necessary to keep in mind that Hayes PROCESS analysis is characterized by more statistical power and more accurate results thanks to bootstrapping test (DiCiccio & Efron, 1996).

The interaction between *Product Format* and *Product Content* has a significant impact on the *Situational Importance of Eco-friendliness* (both from ANOVA and bootstrapping) with related to the environment goods leading to higher *SIEF* both when the product is physical and digital, which means that *Product Content* (related to the environment) is an efficient cue to trigger *SIEF*, as it was predicted. Moreover, it is interesting highlight that digital goods can provoke higher *Importance of Eco-friendliness* due to their inner state and benefits (i.e. perceived eco-friendliness), without the need of external cues (such as content), as shown by the significance interaction of *Format* and *Content*, where digital products unrelated to the environment lead to higher *SIEF*. Finally, *Situational Importance of Eco-friendliness* positively mediates the effect of *Product Format* on *WTP*, explaining the difference in willingness to pay for physical and digital goods when the content is unrelated to the environment. Contrary to what was predicted, *SIEF* does not explain difference in *WTP* for different product formats when the goods are related to the environment.

Finally, results show that it is true that consumers are generally willing to pay more for physical goods rather than digital ones. Furthermore, physical goods lead to higher *WTP* both when they are unrelated and related to the environment, meaning that willingness to pay for physical vs digital goods is not reversed when content is related to the environment (H1b and H2 have to be rejected). However, when products content is related to the environment,

consumers are marginally willing to pay more for these goods both when the format is physical and digital.

5. Conclusion

This study explored the relationship between physical goods, digital goods and consumers' willingness to pay for them. The aim was to research when and how, willingness to pay for digital goods could increase, inverting the gap with WTP for physical and digital goods. In order to assess these effects, the research questions below were developed.

The first focused on when the relationship between *Product Format and Situational Importance of eco-friendliness* would be enhanced, wondering whether the intervention of *Product* Content related to the environment could increase *SIEF* for digital goods (vs physical goods). The second research question regarded how do consumers decide how much they are willing to pay for products. Asking whether *SIEF*, which is affected by the interaction between format (physical vs digital) and content (unrelated vs related), explains *WTP* for different product formats. In particular, it was hypothesised that digital goods related to the environment would have triggered higher levels of *SIEF*, which, in turns, would have led to higher *WTP*.

However, results from ANOVA showed that when the product is related to the environment, *SIEF* increases both for physical and digital (there is no difference), which is not what was expected. Alternatively, bootstrapping revealed that when products are related to the environment, *SIEF* marginally increases for physical goods, which is the opposite of what was supposed. This might happen because, generally speaking, consumers trust information provided by paper more than when it is provided through digital format (Two Sides, 2017), meaning that cues such as how people are destroying hearts trigger consumers environmental concerns when that information is provided through paper rather than digital. At the same time, content is still a good cue to trigger higher levels of *SIEF* both for physical and digital goods.

Furthermore, when the product is unrelated to the environment, *SIEF* is higher for digital goods (vs physical). This effect is especially interesting, and can be explained by digital products inner benefits of being perceived as more eco-friendly compared to physical products, reducing the need for cue such as content related to the environment to trigger higher *SIEF*.

Next, results showed that consumers are generally willing to pay more for physical goods rather than digital ones. On the other hand, *Situational Importance of Eco-friendliness* has a significant positive effect on *Willingness to Pay*. The value that consumers associate with a certain products relies on the situational inspiration/motivation to behave in a eco-friendly

way starting from the moment that they are exposed to the product, thus, when *SIEF* is enhanced, *WTP* increases as well. However, *SIEF* explains the difference in *WTP* only when product content is unrelated to the environment, with digital goods leading to higher *SIEF*. Hence, when digital goods are unrelated to the environment, the digital format alone is enough to trigger *SIEF* and, in turn, increase willingness to pay. However, this higher *WTP* is not reflected in the mean scores where physical goods unrelated to the environment have higher *WTP* compared to digital ones. Probably, *WTP* is actually influenced by other factors stronger than *Situational Importance of Eco-friendliness* (i.e. perceived ownership, as assessed by Atasoy & Morewedge, 2018).

In sum, *Product Content* was a good cue to trigger *SIEF*, but, *Situational Importance of Eco*-friendliness does not explain the difference in *WTP* for different formats when they are related to the environment. On the other hand, there is an interesting result where digital format alone is enough to trigger *SIEF*. Even if people are willing to pay more for physical goods, digital goods lead to higher *SIEF,* which in turn should increases *WTP*. So, even though people in general are willing to pay more for physical goods, there are aspects of digital products that can increase WTP.

5.1 Theoretical Implications

This study provides important academic implications. It could be placed among the literature regarding willingness to pay for physical and digital goods and goal priming, filling the gap about when and how willingness to pay for digital goods may increase.

In particular, this study builds on past research about *WTP* for physical vs digital goods and goal priming theory, differing itself from prior research since it examines the effect of *Product Content* and *Situational Importance of Eco-friendliness* on *WTP*, which was not considered in previous research. Even though people are willing to pay less for digital goods (vs. physical goods), SIEF might boost WTP for digital goods.

The main goal of this study was to assess whether under certain psychological conditions people value digital goods more. In particular, the focused was on the state variable regarding *Situational Importance of Eco-friendliness* that depend on a person's motives at a particular time (after being exposed to the product). The idea behind the study is that through higher levels of *Situational Importance of Eco-friendliness,* consumers' willingness to pay for the digital products increases. Moreover, through goal priming theory it was hypothesised that product content related to the environment might trigger environmental concern. However, it was shown that although product content is a good cue to trigger *SIEF*, willingness to pay is

not explained by *SIEF* for products related to the environment. On the other hand, digital goods unrelated to the environment lead to higher levels of *SIEF* without the need of a cue such as content related to the environment, resulting in higher *WTP*.

5.2 Managerial/Practical Implications

Since *Situational Importance of Eco-friendliness* has a significative positive effect on WTP for digital goods unrelated to the environment, companies could try to enhance *SIEF* in order to apply higher mark ups when offering digital goods. Indeed, trying to enhance a *Situational Importance of Eco-friendliness* when a consumers is being exposed to the digital product would enhance the value that the consumers associate to the product itself. Digital products have a positive significant effect on *Situational Importance of Eco-friendliness* without the intervention of another factor such as product content. Practitioners should exploit this effect, trying to enhance *SIEF* and applying higher prices on digital products.

In practice, due to the greener perception of digital goods and the results of this study, managers now know that digital goods lead to higher environmental concerns. As it has been showed, content related to the environment enhances this effect, however, when content is related to the environment, *SIEF* does not explain differences in *WTP*. On the other hand, *SIEF* explains differences in *WTP* for digital goods unrelated to the environment. Hence, practicians can now start looking for cues that enhance and exploit the already existing positive relationship between digital goods and situational importance of eco-friendliness assessing whether higher levels of *WTP* may be reached.

5.3 Limitations and further research

Some limitations need to be highlighted. Indeed, they could also offer interesting hints for future research. First, the conditions resulted to be too cognitive demanding for respondents. The text was quite complicated and difficult to read. Some respondents may have skipped it rather than actually reading it. Including a textbox below the manipulation, where people are asked to summarize the plot of the book, would have helped to separate quality responses from bad ones. Secondly, *WTP* can be measured in different ways. For this study a survey where respondents were asked to express how much they value the product was implemented. However, customers may not respond truthfully. A particular analysis that could be used for future research is Conjoint Analysis, which suggest the correct price that consumers are willing to pay by simulating the trade-off decisions they usually make in the real world. Thirdly, this research only pertains to the comparison between paper and digital books. The assumptions

behind this choice were explained in the previous chapter, however, it could be expanded to other product categories to check the similarities and differences within the model relationships. Fifthly, this study may be developed through possible extensions. Indeed, it would be interesting to know whether there could be other moderators capable of influencing the relationship between *Product Format* and *Situational Importance of Eco-friendliness.* Sixthly, the higher *SIEF*, the more people are willing to pay for digital goods unrelated to the environmet. However, a contradiction has emerged. the mean scores show that *WTP* is higher for physical goods even though digital goods have higher *SIEF*. Other elements may have a stronger influence on *WTP* than *SIEF*.

Moreover, *SIEF* may also be a mediator of other relationship between other products rather than physical and digital goods. Cues regarding the importance of eco-friendly actions may manage consumers behaviors in one direction rather than another for several other products. For instance, consider a completely different category as automotive: buying a car or rely on car sharing decision may be explained through situational importance of eco-friendliness. If consumers' environmental concerns are triggered near the decision point, car sharing may be the preferred option, due to its "green" nature.

Furthermore, there are several moderators that could influence the direct effect between *Product Format* and *WTP*. For instance, digital goods fits the living style of consumers in an increasingly mobile and liquid world (Bardhi et al., 2012). Thus, the *Need for Fast Paced Lifestyle* could moderate the above relationship in favour of higher *WTP* for digital goods. One of the main benefits of digital goods is that they are available at any place at any moment (on-demand economy). Thus, people with the particular need to have everything they want at that moment may be willing to pay more for digital goods rather than physical ones. Consumers are becoming more and more informed, independent, and demanding thanks to the instantaneous access that they have towards goods through mobile devices (Faulds, Mangold, Raju & Valsalan, 2018). One of the main benefits of digital goods, like eBooks, is "convenience" or practicality. Indeed, e-books are always in stock. No disappointment and trips to libraries or bookstores, no inventory storage worries and no waiting (Rao, S. S., 2003) This seems like the perfect solution for people who live a fast paced life. Digital goods are more practical and people with a fast life style may prefer them in order to match their busy and fast way of living. Those people may prefer to pay more for a digital good, which is accessible anywhere and whenever you need rather than looking physically for it. It is just more fast, just as their life. Moreover, these people move around very often and can't bring with them any good. In sum,

future research could focus on ways to increase the willingness to pay for digital goods, providing relevant insights for companies that are currently investing in this domain.

Appendix

Appendix A (Questionnaire)

Block: Introduction (1 Question)

BlockRandomizer: 1 - Evenly Present Elements

- Standard: C1 (1 Question)
- Standard: C2 (1 Question)
- Standard: C3 (1 Question)
- Standard: C4 (1 Question)

Standard: Attention Check (1 Question)

BlockRandomizer: 2 -

- Standard: M (Importance of eco-friendliness) (1 Question)
- Standard: DV (1 Question)

Standard: Manipulation Check (1 Question)
Standard: Covariates (3 Questions)
Standard: Greetings (1 Question)

Page Break

Start of Block: Introduction

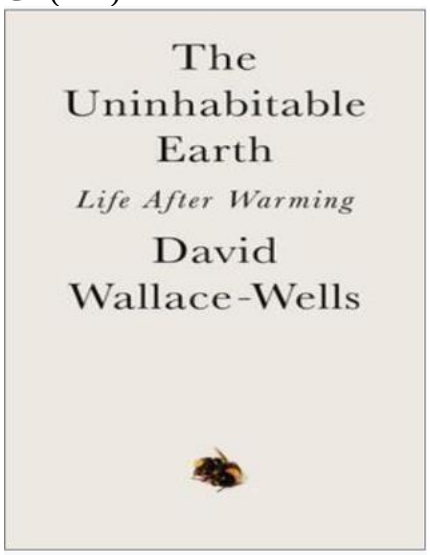
Intro | Dear respondent, Thank you for agreeing to take part in this research. I'm a Marketing Analytics student at Tilburg University, and I am currently writing my Master's Thesis. Your answers to this research will be only used for academic purposes, and will be kept anonymous. Please answer as openly and truthfully as you can - there are no right or wrong answers! It will take you less than 4 minutes to complete this survey. Thank you again for your time and effort. If you have any questions or comments, feel free to contact me at r.locchi@tilburguniversity.edu or +39 3480861146

Intro | Grazie per aver accettato di partecipare a questa ricerca. Sono uno studente del corso di laurea in Marketing Analytics presso la Tilburg University e, attualmente, sto lavorando alla mia tesi. Le tue risposte a questo questionario verranno usate solamente per scopi accademici e saranno **anonime**. Rispondi in modo più **aperto** e **veritiero** possibile - non ci sono risposte **giuste** o **sbagliate**! Ci vorranno meno di 4 minuti per completare il questionario. Grazie di nuovo per la tua disponibilità. Per domande o commenti sentiti libero di contattarmi: r.locchi@tilburguniversity.edu +39 3480861146

End of Block: Introduction

Start of Block: C1

C1 (P-R)



Imagine you are looking for a book by scrolling through an online book store on your phone or tablet. In the picture you can see a traditional paper book.
Please look at the book cover and read the following summary, then click on the button below to answer questions:
"It is worse, much worse, than you think.
The slowness of climate change is a fairy tale, perhaps as pernicious as the one that says it isn't happening at all, and if your anxiety about it is dominated by fears of sea-level rise, you are barely scratching the surface of what terrors are possible, even within the lifetime of a

teenager today.

Over the past decades, the term "Anthropocene" has climbed into the popular imagination - a name given to the geologic era we live in now, one defined by human intervention in the life of the planet. But however sanguine you might be about the proposition that we have ravaged the natural world, which we surely have, it is another thing entirely to consider the possibility that we have only provoked it, engineering first in ignorance and then in denial a climate system that will now go to war with us for many centuries, perhaps until it destroys us. In the meantime, it will remake us, transforming every aspect of the way we live-the planet no longer nurturing a dream of abundance, but a living nightmare."

C1 (P-R)

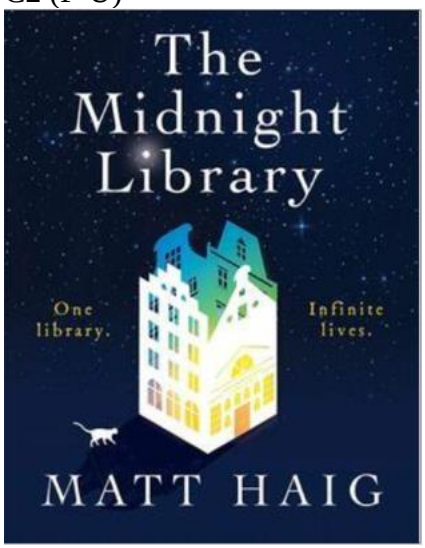
Immagina di cercare un libro scorrendo su uno store online di libri sul tuo cellulare o tablet. Nella figura puoi vedere un <u>tradizionale libro cartaceo</u>.
Osserva la copertina ("La terra inabitabile: La vita dopo il riscaldamento") e leggi il seguente riassunto. In seguito, clicca sul pulsante in basso per rispondere alle domande:
"È peggio, molto peggio, di quanto si pensi.
La lentezza del cambiamento climatico è una favola, forse perniciosa quanto quella che dice che non sta accadendo affatto, e se la vostra ansia al riguardo è dominata dalle paure dell'innalzamento del livello del mare, vi trovate appena sulla superficie dei possibili terrori, anche nella vita di un adolescente di oggi.

Negli ultimi decenni, il termine "Antropocene" è entrato nell'immaginario popolare - un nome dato all'era geologica in cui viviamo ora, definita dall'intervento umano nella vita del pianeta. Ma per quanto si possa essere ottimisti sull'affermazione secondo la quale abbiamo devastato il mondo naturale, cosa che sicuramente abbiamo fatto, è tutta un'altra cosa considerare la possibilità che l'abbiamo solo provocato, prendendo forma prima nell'ignoranza e poi nella negazione un sistema climatico che ora andrà in guerra con noi per molti secoli, forse fino a quando non ci distruggerà. Nel frattempo, ci rifarà come uomini, trasformando ogni aspetto del nostro modo di vivere - il pianeta non alimenta più un sogno di abbondanza, ma un incubo vivente".

End of Block: C1

Start of Block: C2

C2 (P-U)



Imagine you are looking for a book by scrolling through an online book store on your phone or tablet.
In the picture you can see a traditional paper book.
Please look at the book cover and read the following summary, then click on the button below to answer questions:

"When Nora Seed finds herself in the Midnight Library, she has a chance to make things right. Up until now, her life has been full of misery and regret. She feels she has let everyone down, including herself. But things are about to change.

The books in the Midnight Library enable Nora to live as if she had done things differently. With the help of an old friend, she can now undo every one of her regrets as she tries to work out her perfect life. But things aren't always what she imagined they'd be, and soon her choices place the library and herself in extreme danger.

Before time runs out, she must answer the ultimate question: what is the best way to live?"

C2 (P-U)

Immagina di cercare un libro scorrendo su uno store online di libri sul tuo cellulare o tablet. Nella figura puoi vedere un tradizionale libro cartaceo.
Osserva la copertina ("La Biblioteca di Mezzanotte") e leggi il seguente riassunto. In seguito, clicca sul pulsante in basso per rispondere alle domande:

"Quando Nora Seed si ritrova nella Biblioteca di Mezzanotte, ha la possibilità di mettere le cose a posto. Fino ad ora, la sua vita è stata piena di infelicità e rimpianti. Sente di aver deluso tutti, compresa se stessa. Ma le cose stanno per cambiare.

I libri della Biblioteca di Mezzanotte permettono a Nora di vivere come se avesse fatto le cose diversamente. Con l'aiuto di una vecchia amica, ora può disfare tutti i suoi rimpianti mentre cerca di elaborare la sua vita perfetta. Ma le cose non sono sempre come le immaginava, e presto le sue scelte mettono la biblioteca e se stessa in estremo pericolo.

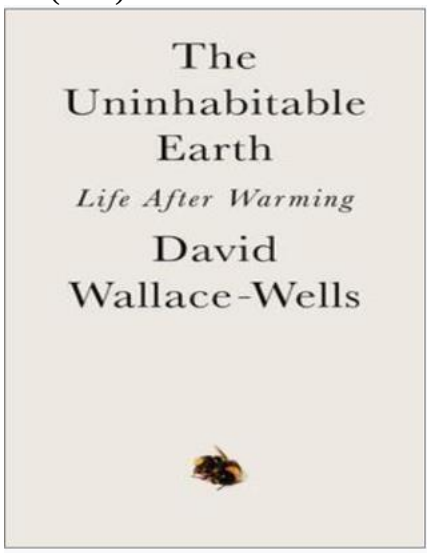
Prima che scada il tempo, deve rispondere alla domanda definitiva: qual è il modo migliore

di vivere?"

End of Block: C2

Start of Block: C3

C3 (D-R)



Imagine you are looking for a book by scrolling through an online book store on your phone or tablet. In the picture you can see a digital e-book.

Please look at the book cover and read the following summary, then click on the button below to answer questions:

"It is worse, much worse, than you think.

The slowness of climate change is a fairy tale, perhaps as pernicious as the one that says it isn't happening at all, and if your anxiety about it is dominated by fears of sea-level rise, you are barely scratching the surface of what terrors are possible, even within the lifetime of a teenager today.

Over the past decades, the term "Anthropocene" has climbed into the popular imagination - a name given to the geologic era we live in now, one defined by human intervention in the life of the planet. But however sanguine you might be about the proposition that we have ravaged the natural world, which we surely have, it is another thing entirely to consider the possibility that we have only provoked it, engineering first in ignorance and then in denial a climate system that will now go to war with us for many centuries, perhaps until it destroys us. In the meantime, it will remake us, transforming every aspect of the way we live-the planet no longer nurturing a dream of abundance, but a living nightmare."

C3 (D-R)

Immagina di cercare un libro scorrendo su uno store online di libri sul tuo cellulare o tablet. Nella figura puoi vedere un e-book digitale.
Osserva la copertina ("La terra inabitabile: La vita dopo il riscaldamento") e leggi il seguente riassunto. In seguito, clicca sul pulsante in basso per rispondere alle domande:

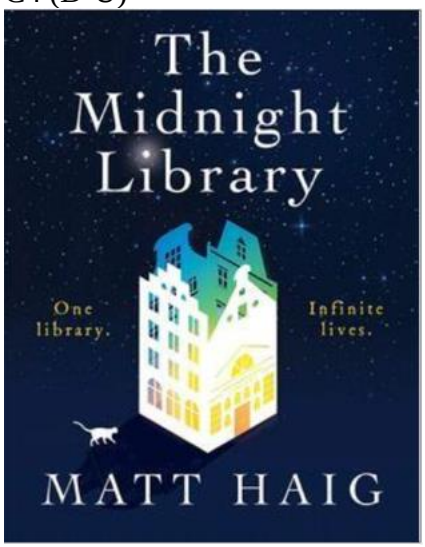
"È peggio, molto peggio, di quanto si pensi.
La lentezza del cambiamento climatico è una favola, forse perniciosa quanto quella che dice che non sta accadendo affatto, e se la vostra ansia al riguardo è dominata dalle paure dell'innalzamento del livello del mare, vi trovate appena sulla superficie dei possibili terrori, anche nella vita di un adolescente di oggi.

Negli ultimi decenni, il termine "Antropocene" è entrato nell'immaginario popolare - un nome dato all'era geologica in cui viviamo ora, definita dall'intervento umano nella vita del pianeta. Ma per quanto si possa essere ottimisti sull'affermazione secondo la quale abbiamo devastato il mondo naturale, cosa che sicuramente abbiamo fatto, è tutta un'altra cosa considerare la possibilità che l'abbiamo solo provocato, prendendo forma prima nell'ignoranza e poi nella negazione un sistema climatico che ora andrà in guerra con noi per molti secoli, forse fino a quando non ci distruggerà. Nel frattempo, ci rifarà come uomini, trasformando ogni aspetto del nostro modo di vivere - il pianeta non alimenta più un sogno di abbondanza, ma un incubo vivente".

End of Block: C3

Start of Block: C4

C4 (D-U)



Imagine you are looking for a book by scrolling through an online book store on your

phone or tablet. In the picture you can see a digital e-book. Please look at the book cover and read the following summary, then click on the button below to answer questions:

"When Nora Seed finds herself in the Midnight Library, she has a chance to make things right. Up until now, her life has been full of misery and regret. She feels she has let everyone down, including herself. But things are about to change.

The books in the Midnight Library enable Nora to live as if she had done things differently. With the help of an old friend, she can now undo every one of her regrets as she tries to work out her perfect life. But things aren't always what she imagined they'd be, and soon her choices place the library and herself in extreme danger.

Before time runs out, she must answer the ultimate question: what is the best way to live?"

C4 (D-U)

Immagina di cercare un libro scorrendo su uno store online di libri sul tuo cellulare o tablet. Nella figura puoi vedere un e-book digitale.
Osserva la copertina ("La Biblioteca di Mezzanotte") e leggi il seguente riassunto. In seguito, clicca sul pulsante in basso per rispondere alle domande:

"Quando Nora Seed si ritrova nella Biblioteca di Mezzanotte, ha la possibilità di mettere le cose a posto. Fino ad ora, la sua vita è stata piena di infelicità e rimpianti. Sente di aver deluso tutti, compresa se stessa. Ma le cose stanno per cambiare.

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Prima che scada il tempo, deve rispondere alla domanda definitiva: qual è il modo migliore di vivere?"

End of Block: C4

Start of Block: Attention Check

MemoryTask | Which book format have you just seen?

- ○ Traditional paper book (1)
- ○ Digital e-book (2)
- ○ I am not sure (3)

MemoryTask | Che tipo di formato hai appena visto?

- ○ Libro cartaceo tradizionale (1)
- ○ E-book digitale (2)
- ○ Non ne sono sicuro (3)

End of Block: Attention Check

Start of Block: M (Importance of eco-friendliness)

Inspired-to | Please, indicate how much you agree with the following statements after being exposed to the the book:

	Strongly disagree (1)	*Disagree (2)*	*Somewhat disagree (3)*	*Neither agree nor disagree (4)*	*Somewhat agree (5)*	*Agree (6)*	*Strongly agree (7)*
I was inspired to buy eco-friendly products (1)	○	○	○	○	○	○	○
I felt a desire to buy products that do little harm to the environment (2)	○	○	○	○	○	○	○
My interest to buy eco-friendly products was increased (3)	○	○	○	○	○	○	○
I was motivated to buy eco-friendly products (4)	○	○	○	○	○	○	○
I felt an urge to protect the environment (5)	○	○	○	○	○	○	○

Inspired-to Indica quanto sei d'accordo con le seguenti frasi dopo aver visto il libro:

	In completo disaccordo (1)	*In disaccordo (2)*	*Abbastanza in disaccordo (3)*	*Incerto (4)*	*Abbastanza d'accordo (5)*	*D'accordo (6)*	*Completamente d'accordo (7)*
Sono stato ispirato a comprare prodotti eco-friendly (1)	○	○	○	○	○	○	○
Ho sentito il desiderio di comprare prodotti che provocano poco danno all'ambiente (2)	○	○	○	○	○	○	○
Il mio interesse a comprare prodotti eco-friendly è aumentato (3)	○	○	○	○	○	○	○
Sono stato motivato a comprare prodotti eco-friendly (4)	○	○	○	○	○	○	○

Ho sentito una spinta a proteggere l'ambiente (5)	○	○	○	○	○	○	○

End of Block: M (Importance of eco-friendliness)

Start of Block: DV

*

WTP | Please indicate the highest price you would accept to pay for the product you have seen at the beginning of the survey.

Provide your answer using numbers with 2 decimal points separated by a comma (","). Also consider to answer in respect of euro currency.

_____

WTP | Indica il prezzo più alto che saresti disposto a pagare per il prodotto che hai visto all'inizio del questionario.

Rispondi usando numeri con due cifre decimali separate da una virgola (","). Inoltre, rispondi considerando l'euro come valuta.

_____

End of Block: DV

Start of Block: Manipulation Check

ManCheck Please answer to the following question:

	Strongly disagree (1)	*Disagree (2)*	*Somewhat disagree (3)*	*Neither agree nor disagree (4)*	*Somewhat agree (5)*	*Agree (6)*	*Strongly agree (7)*
The proposed book is related to climate change (1)	○	○	○	○	○	○	○

ManCheck | Rispondi alla seguente domanda:

	In completo disaccordo (1)	*In disaccordo (2)*	*Abbastanza in disaccordo (3)*	*Incerto (4)*	*Abbastanza d'accordo (5)*	*D'accordo (6)*	*Completamente d'accordo (7)*
Il libro proposto riguarda il cambiamento climatico (1)	○	○	○	○	○	○	○

End of Block: Manipulation Check

Start of Block: Covariates

Attitude | Please, indicate how much you agree with the following statemens:

	Strongly disagree (1)	*Disagree (2)*	*Somewhat disagree (3)*	*Neither agree nor disagree (4)*	*Somewhat agree (5)*	*Agree (6)*	*Strongly agree (7)*
I like reading (1)	○	○	○	○	○	○	○
I like traditional paper books (2)	○	○	○	○	○	○	○
I like digital e-books (3)	○	○	○	○	○	○	○
I like reading about evironmental problems (4)	○	○	○	○	○	○	○

Attitude | Indica quanto sei d'accordo con le seguenti frasi:

	In completo disaccordo (1)	*In disaccordo (2)*	*Abbastanza in disaccordo (3)*	*Incerto (4)*	*Abbastanza d'accordo (5)*	*D'accordo (6)*	*Completamente d'accordo (7)*
Mi piace leggere (1)	○	○	○	○	○	○	○
Mi piacciono i libri cartacei tradizionali (2)	○	○	○	○	○	○	○
Mi piacciono gli e-books digitali (3)	○	○	○	○	○	○	○
Mi piace leggere riguardo i problemi ambientali (4)	○	○	○	○	○	○	○

*

Age | What is your age?

_____

Age | Qual è la tua età?

_____

Gender | Please, select your gender:

- ○ Male (1)
- ○ Female (2)
- ○ Non-binary / third gender (3)
- ○ Prefer not to say (4)

Gender | Sesso:

- ○ Maschio (1)
- ○ Femmina (2)
- ○ Terzo genere (3)
- ○ Preferisco non dirlo (4)

End of Block: Covariates

Start of Block: Greetings

Greetings |
Thank you for your participation, now please press the button below on your right to submit your answers.

If you do not, your answers will not be saved.

Greetings |
Grazie per la partecipazione. Premi il pulsante in basso a destra per inviare le risposte.

Se non lo fai, le tue risposte non verranno salvate.

End of Block: Greetings

Appendix B (Pre-test)

Statistics			
		Please, select your age:	Please, select your gender:
N	Valid	97	97
	Missing	0	0

Table 1: Pre-test sample

Age					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18 - 24	42	43.3	43.3	43.3
	25 - 34	31	32.0	32.0	75.3
	35 - 44	8	8.2	8.2	83.5
	45 - 54	4	4.1	4.1	87.6
	55 - 64	9	9.3	9.3	96.9
	65 - 74	3	3.1	3.1	100.0
	Total	97	100.0	100.0	

Table 2: Pre-test demographics (Age)

Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	41	42.3	42.3	42.3
	Female	56	57.7	57.7	100.0
	Total	97	100.0	100.0	

Table 3: Pre-test demographics (Gender)

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Digital_Perception	5.0309	97	1.39201	.14134
	Physical_Perception	3.4467	97	1.41002	.14317

Table 4

Paired Samples Correlations				
		N	Correlation	Sig.
Pair 1	Digital_Perception & Physical_Perception	97	-.481	.000

Table 5

Paired Samples Test									
		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Digital_Perception - Physical_Perception	1.58419	2.41093	.24479	1.09828	2.07010	6.472	96	.000

Table 6: Pre-test Paired Samples T Test

Group Statistics					
	IV	N	Mean	Std. Deviation	Std. Error Mean
DV	Unrelated	47	3.1915	1.65027	.24072
	Related	50	5.8400	1.11319	.15743

Table 7: Pre-test Content Related Statistics

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
DV	Equal variances assumed	10.201	.002	-9.317	95	.000	-2.64851	.28428	-3.21287	-2.08415
	Equal variances not assumed			-9.208	80.022	.000	-2.64851	.28763	-3.22090	-2.07612

Table 8: Pre-test Content Related T-Test

Appendix C (Preliminary Data Analysis)

C.1 Attention Check

Results						
	Passed	Failed				***Row Totals***
Group 1	60 (62.94) [0.14]	34 (31.06) [0.28]				94
Group 2	54 (57.58) [0.22]	32 (28.42) [0.45]				86
Group 3	56 (50.22) [0.67]	19 (24.78) [1.35]				75
Group 4	59 (58.25) [0.01]	28 (28.75) [0.02]				87
Column Totals	229	113				**342 (Grand Total)**

Table 9: Chi-Square (Attention Check)

C.2 Outliers:

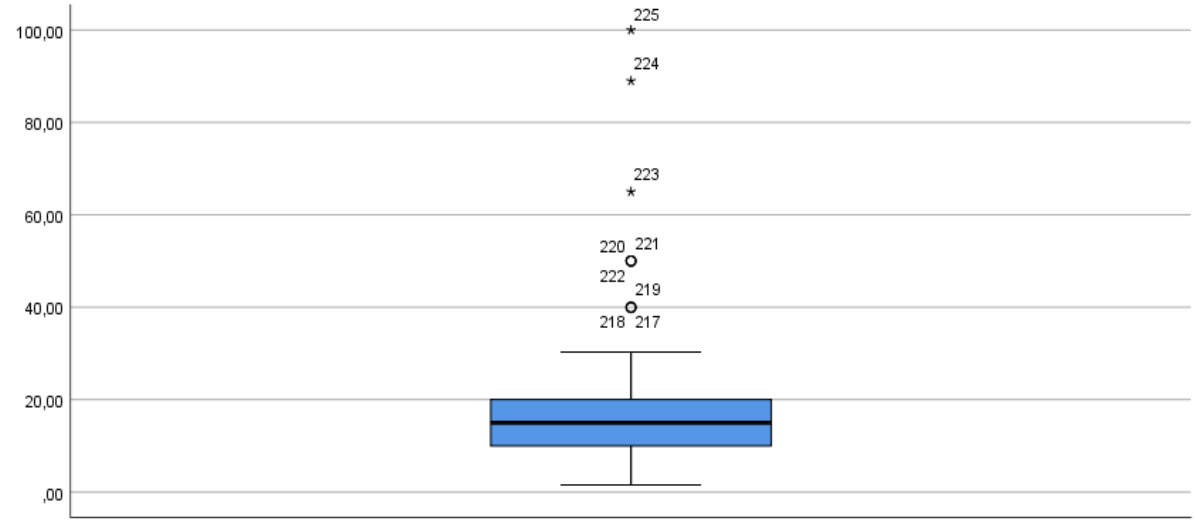

Figure 7: Check for outliers in WTP value scores

C.3 Demographics:

Age					
	N	Minimum	Maximum	Mean	Std. Deviation
Age	222	18.00	81.00	43.3018	15.67238
Valid N (listwise)	222				

Table 10: Age

Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	79	35.6	35.6	35.6
	Female	139	62.6	62.6	98.2
	Non-binary / third gender	2	.9	.9	99.1
	Prefer not to say	2	.9	.9	100.0
	Total	222	100.0	100.0	

Table 11: Gender

C.4 Scale reliability and validity:

Situational Importnace of Eco-friendliness scale: missing values check			
		N	%
Cases	Valid	222	100.0
	Excluded[a]	0	.0
	Total	222	100.0

a. Listwise deletion based on all variables in the procedure.

Table 12: Scale reliability: missing values check

Situational Importance of Eco-friendliness: **Reliability**		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.934	.935	5

Table 13: Scale reliability: should be > 0,70. If less than 10 items, > 0,5.

Item Statistics			
	Mean	Std. Deviation	N
Please. indicate how much you agree with the following statements after being exposed to the the book: I was inspired to buy eco-friendly products	4.81	1.516	222
Please. indicate how much you agree with the following statements after being exposed to the the book: I felt a desire to buy products that do little harm to the environment	4.96	1.673	222
Please. indicate how much you agree with the following statements after being exposed to the the book: My interest to buy eco-friendly products was increased	4.85	1.615	222
Please. indicate how much you agree with the following statements after being exposed to the the book: I was motivated to buy eco-friendly products	4.89	1.575	222
Please. indicate how much you agree with the following statements after being exposed to the the book: I felt an urge to protect the environment	5.14	1.650	222

Table 14: Situational Importance of Eco-friendliness items (1: strongly disagree; 7: strongly agree)

Inter-Item Correlation Matrix					
	Please. indicate how much you agree with the following statements after being exposed to the the book: I was inspired to buy eco-friendly products	Please. indicate how much you agree with the following statements after being exposed to the the book: I felt a desire to buy products that do little harm to the environment	Please. indicate how much you agree with the following statements after being exposed to the the book: My interest to buy eco-friendly products was increased	Please. indicate how much you agree with the following statements after being exposed to the the book: I was motivated to buy eco-friendly products	Please. indicate how much you agree with the following statements after being exposed to the the book: I felt an urge to protect the environment
Please. indicate how much you agree with the following statements after being exposed to the the book: - I was inspired to buy eco-friendly products	1.000	.718	.774	.758	.717
Please. indicate how much you agree with the following statements after being exposed to the the book: - I felt a desire to buy products that do little harm to the environment	.718	1.000	.668	.651	.661
Please. indicate how much you agree with the following statements after being exposed to the the book: - My interest to buy eco-friendly products was increased	.774	.668	1.000	.883	.802

Please. indicate how much you agree with the following statements after being exposed to the the book: - I was motivated to buy eco-friendly products	.758	.651	.883	1.000	.796
Please. indicate how much you agree with the following statements after being exposed to the the book: - I felt an urge to protect the environment	.717	.661	.802	.796	1.000

Table 15: The correlation of every item in the scale with every other item. They all should be positive.

Summary Item Statistics							
	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	4.929	4.811	5.135	.324	1.067	.016	5
Inter-Item Correlations	.743	.651	.883	.232	1.357	.005	5

Table 16: Summary item statistics

Corrected item-total correlation					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Please. indicate how much you agree with the following statements after being exposed to the the book: - I was inspired to buy eco-friendly products	19.83	34.203	.826	.688	.920

Please. indicate how much you agree with the following statements after being exposed to the the book: - I felt a desire to buy products that do little harm to the environment	19.68	34.018	.734	.564	.937
Please. indicate how much you agree with the following statements after being exposed to the the book: - My interest to buy eco-friendly products was increased	19.79	32.373	.880	.822	.909
Please. indicate how much you agree with the following statements after being exposed to the the book: - I was motivated to buy eco-friendly products	19.76	32.981	.867	.809	.912
Please. indicate how much you agree with the following statements after being exposed to the the book: - I felt an urge to protect the environment	19.51	32.767	.828	.701	.919

Table 17: Corrected item-total correlation. The correlation of each item with all other items combined. Should be > 0.40.

Scale Statistics			
Mean	Variance	Std. Deviation	N of Items
24.64	51.144	7.152	5

Table 18: Scale statistics

C.5 Manipulation Check:

Between-Subjects Factors		
		N
Format	Physical	110
	Digital	112
Content	Unrelated	112
	Related	110

Table 19: Manipulation Check Sample

Descriptive Statistics				
Dependent Variable: Content Related				
Format	Content	Mean	Std. Deviation	N
Physical	Unrelated	3.23	1.857	53
	Related	6.05	.811	57
	Total	4.69	1.999	110
Digital	Unrelated	3.29	1.857	59
	Related	5.77	1.203	53
	Total	4.46	2.009	112
Total	Unrelated	3.26	1.849	112
	Related	5.92	1.024	110
	Total	4.58	2.002	222

Table 20: Manipulation Check Descriptive

Levene's Test of Equality of Error Variances[a.b]					
		Levene Statistic	df1	df2	Sig.
	Based on Mean	35.234	3	218	.000

The proposed book is related to climate change	Based on Median	26.541	3	218	.000
	Based on Median and with adjusted df	26.541	3	194.644	.000
	Based on trimmed mean	34.053	3	218	.000
Tests the null hypothesis that the error variance of the dependent variable is equal across groups.					
a. Dependent variable: Please answer to the following question: - The proposed book is related to climate change					
b. Design: Intercept + Format + Content + Format * Content					

Table 21: Manipulation Check Test Homogeneity of Variance

Tests of Between-Subjects Effects								
Dependent Variable: Content Related								
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[b]
Corrected Model	394.688[a]	3	131.563	58.352	.000	.445	175.057	1.000
Intercept	4657.193	1	4657.193	2065.611	.000	.905	2065.611	1.000
Format	.654	1	.654	.290	.591	.001	.290	.084
Content	390.617	1	390.617	173.251	.000	.443	173.251	1.000
Format * Content	1.608	1	1.608	.713	.399	.003	.713	.134
Error	491.510	218	2.255					
Total	5536.000	222						
Corrected Total	886.198	221						

a. R Squared = .445 (Adjusted R Squared = .438)
b. Computed using alpha = .05

Table 22: Manipulation Check Significance

2. Format				
Dependent Variable: Content Related				
			95% Confidence Interval	
Format	Mean	Std. Error	Lower Bound	Upper Bound
Physical	4.640	.143	4.357	4.922
Digital	4.531	.142	4.251	4.811

Table 23: Manipulation Check Mean (Format)

3. Content				
Dependent Variable: Content Related				
			95% Confidence Interval	
Content	Mean	Std. Error	Lower Bound	Upper Bound
Unrelated	3.257	.142	2.977	3.537
Related	5.913	.143	5.631	6.195

Table 24: Manipulation Check Mean (Content)

4. Format * Content					
Dependent Variable: Content Related					
				95% Confidence Interval	
Format	Content	Mean	Std. Error	Lower Bound	Upper Bound
Physical	Unrelated	3.226	.206	2.820	3.633
	Related	6.053	.199	5.661	6.445
Digital	Unrelated	3.288	.195	2.903	3.673

	Related	5.774	.206	5.367	6.180

*Table 25: Manipulation Check Mean (Format * Content)*

C.6 Randomization check:

Between-Subjects Factors		
		N
Format	Physical	110
	Digital	112
Content	Unrelated	112
	Related	110

Table 26: Randomization Check Sample

Descriptive Statistics				
Dependent Variable: Age				
Format	Content	Mean	Std. Deviation	N
Physical	Unrelated	44.2453	15.87803	53
	Related	43.4912	17.12363	57
	Total	43.8545	16.46394	110
Digital	Unrelated	43.0508	15.50798	59
	Related	42.4340	14.35204	53
	Total	42.7589	14.90828	112
Total	Unrelated	43.6161	15.62468	112
	Related	42.9818	15.78583	110
	Total	43.3018	15.67238	222

Table 27: Randomization Check Descriptive

Levene's Test of Equality of Error Variancesa.b					
		Levene Statistic	df1	df2	Sig.
Age	Based on Mean	1.760	3	218	.156
	Based on Median	1.626	3	218	.184
	Based on Median and with adjusted df	1.626	3	217.074	.184
	Based on trimmed mean	1.739	3	218	.160
Tests the null hypothesis that the error variance of the dependent variable is equal across groups.					
a. Dependent variable: What is your age?					
b. Design: Intercept + Format + Content + Format * Content					

Table 28: Randomization Check Homogeinity of Variance

Tests of Between-Subjects Effects								
Dependent Variable: Age								
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[b]
Corrected Model	92.856[a]	3	30.952	.125	.946	.002	.374	.072
Intercept	415424.326	1	415424.326	1671.206	.000	.885	1671.206	1.000
Format	70.196	1	70.196	.282	.596	.001	.282	.083
Content	26.021	1	26.021	.105	.747	.000	.105	.062
Format * Content	.260	1	.260	.001	.974	.000	.001	.050
Error	54189.923	218	248.578					
Total	470543.000	222						
Corrected Total	54282.779	221						
a. R Squared = .002 (Adjusted R Squared = -.012)								
b. Computed using alpha = .05								

Table 29: Randomization Check Significance

1. Grand Mean			
Dependent Variable: Age			
		95% Confidence Interval	
Mean	Std. Error	Lower Bound	Upper Bound
43.305	1.059	41.218	45.393

Table 30: Randomization Check Mean

2. Format				
Dependent Variable: Age				
			95% Confidence Interval	
Format	Mean	Std. Error	Lower Bound	Upper Bound
Physical	43.868	1.504	40.904	46.833
Digital	42.742	1.492	39.802	45.683

Table 31: Randomization Check Mean (Format)

3. Content				
Dependent Variable: Age				
			95% Confidence Interval	
Content	Mean	Std. Error	Lower Bound	Upper Bound
Unrelated	43.648	1.492	40.708	46.589
Related	42.963	1.504	39.998	45.927

Table 32: Randomization Check Mean (Content)

4. Format * Content					
Dependent Variable: Age					
				95% Confidence Interval	
Format	Content	Mean	Std. Error	Lower Bound	Upper Bound
Physical	Unrelated	44.245	2.166	39.977	48.514
	Related	43.491	2.088	39.375	47.607
Digital	Unrelated	43.051	2.053	39.005	47.096

	Related	42.434	2.166	38.166	46.702

*Table 33: Randomization Check Mean (Format * Content)*

Chi-Square			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	15.330[a]	9	.082
Likelihood Ratio	16.727	9	.053
Linear-by-Linear Association	2.837	1	.092
N of Valid Cases	222		
a. 8 cells (50.0%) have expected count less than 5. The minimum expected count is .48.			

Table 34: Randomization Check: Likelihood-ratio test

Appendix D (Main Analysis)

D.1 Assumptions

D.1.2 Format – Content → SIEF

P-U:

Tests of Normality[a]							
		Kolmogorov-Smirnov[b]			Shapiro-Wilk		
	Format	Statistic	df	Sig.	Statistic	df	Sig.
SIEF	Physical	.113	53	.089	.945	53	.017
a. Format = Physical. Content = Unrelated							
b. Lilliefors Significance Correction							

Table 35: Assumption violated; no outliers

P-R:

Tests of Normality[a]							
		Kolmogorov-Smirnov[b]			Shapiro-Wilk		
	Format	Statistic	df	Sig.	Statistic	df	Sig.
SIEF	Physical	.143	57	.005	.923	57	.001
a. Format = Physical. Content = Related							
b. Lilliefors Significance Correction							

Table 36: Assumption violated; 2 outliers

D-U:

Tests of Normality[a]							
		Kolmogorov-Smirnov[b]			Shapiro-Wilk		
	Format	Statistic	df	Sig.	Statistic	df	Sig.
SIEF	Digital	.161	59	.001	.923	59	.001
a. Format = Digital. Content = Unrelated							
b. Lilliefors Significance Correction							

Table 37: Assumption violated, 2 outliers

D-R:

Tests of Normality[a]							
		Kolmogorov-Smirnov[b]			Shapiro-Wilk		
	Format	Statistic	df	Sig.	Statistic	df	Sig.
SIEF	Digital	.102	53	.200*	.940	53	.010

*. This is a lower bound of the true significance.
a. Format = Digital. Content = Related
b. Lilliefors Significance Correction

Table 38: Assumption violated, 1 outliers

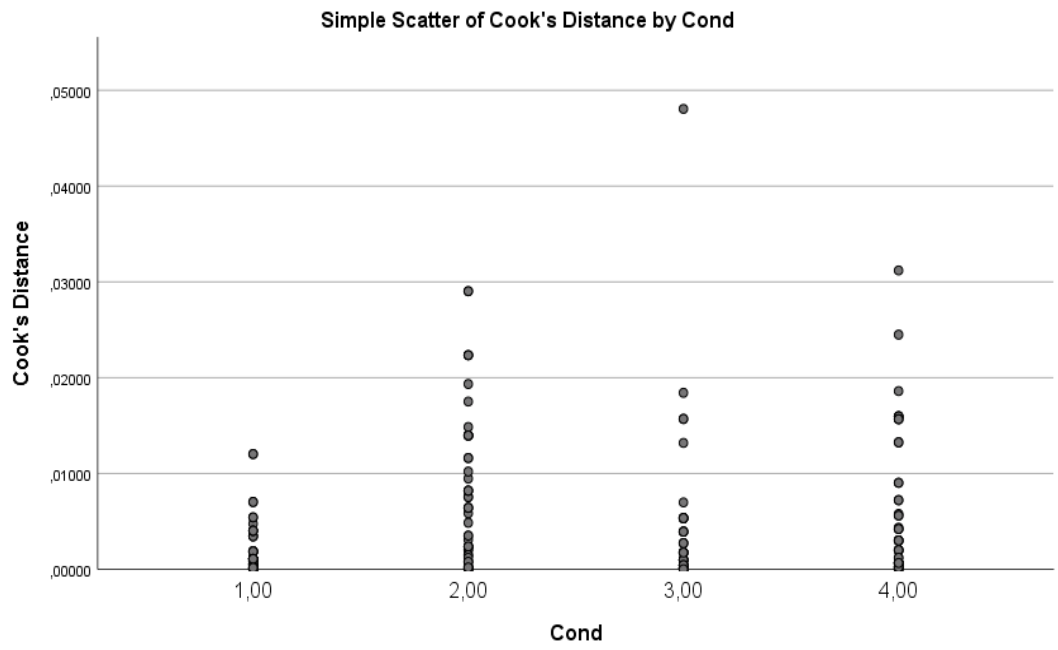

Figure 8: Potential Outliers (SIEF)

D.1.3 Format – Content → WTP

P-U:

Tests of Normality[a]							
		Kolmogorov-Smirnov[b]			Shapiro-Wilk		
	Format	Statistic	df	Sig.	Statistic	df	Sig.
WTP	Physical	.138	53	.013	.971	53	.222
a. Format = Physical. Content = Unrelated							

b. Lilliefors Significance Correction

Table 39: Assumption met; no outliers

P-R:

Tests of Normality[a]							
		Kolmogorov-Smirnov[b]			Shapiro-Wilk		
	Format	Statistic	df	Sig.	Statistic	df	Sig.
WTP	Physical	.195	57	.000	.830	57	.000
a. Format = Physical. Content = Related							
b. Lilliefors Significance Correction							

Table 40: Assumption violated; 3 outliers

D-U:

Tests of Normality[a]							
		Kolmogorov-Smirnov[b]			Shapiro-Wilk		
	Format	Statistic	df	Sig.	Statistic	df	Sig.
WTP	Digitial	.131	59	.014	.887	59	.000
a. Format = Digital. Content = Unrelated							
b. Lilliefors Significance Correction							

Table 41: Assumption violated; 2 outliers

D-R:

Tests of Normality[a]							
		Kolmogorov-Smirnov[b]			Shapiro-Wilk		
	Format	Statistic	df	Sig.	Statistic	df	Sig.
WTP	Digital	.203	53	.000	.857	53	.000
a. Format = Digital. Content = Related							
b. Lilliefors Significance Correction							

Table 42: Assumption violated; 2 outliers

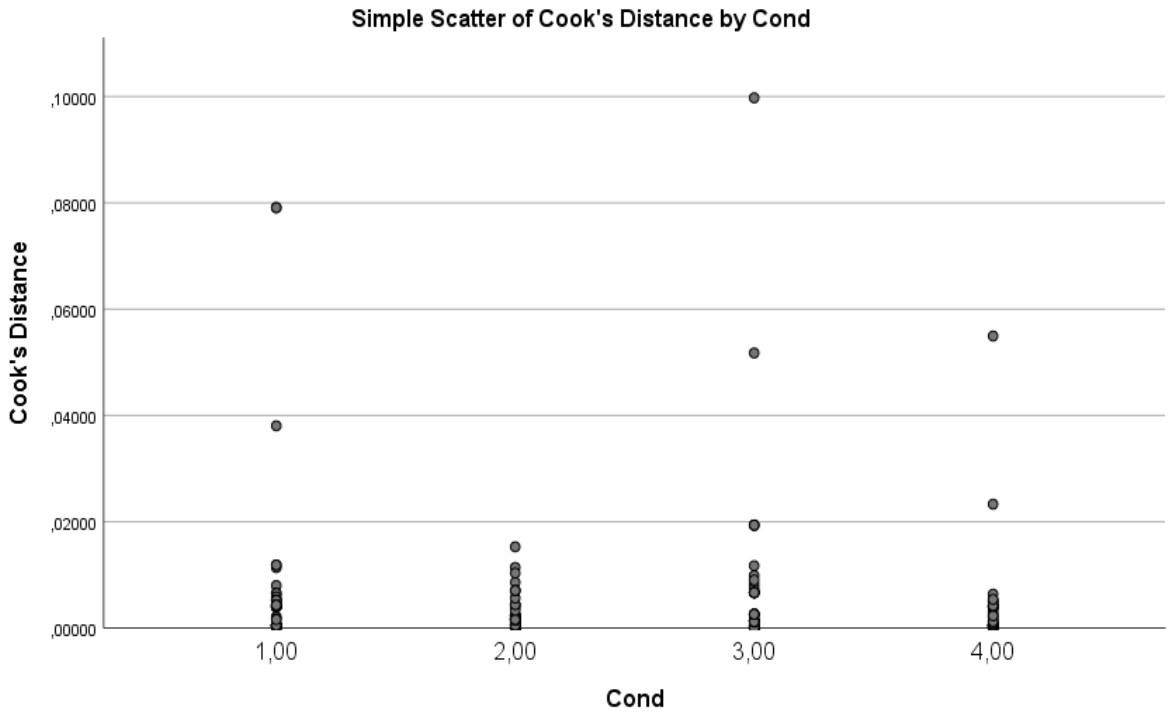

Figure 9: Potential Outliers (WTP)

D.1.4 Homogeneity of variance

Format – Content → SIEF

Levene's Test of Equality of Error Variances[a,b]					
		Levene Statistic	df1	df2	Sig.
SIEF	Based on Mean	9.502	3	218	.000
	Based on Median	8.528	3	218	.000
	Based on Median and with adjusted df	8.528	3	191.447	.000
	Based on trimmed mean	9.362	3	218	.000
Tests the null hypothesis that the error variance of the dependent variable is equal across groups.					
a. Dependent variable: SIEF					
b. Design: Intercept + Format + Content + Format * Content					

Table 43: Homogeneity of Variance (SIEF)

Format – Content → WTP

Test of Homogeneity of Variances					
		Levene Statistic	df1	df2	Sig.
WTP	Based on Mean	.004	1	220	.952
	Based on Median	.074	1	220	.786
	Based on Median and with adjusted df	.074	1	219.979	.786
	Based on trimmed mean	.015	1	220	.903

Table 44: Homogeneity of Variance (WTP)

D.1.5 Covariates

Correlations			
		WTP	Attitude towards the Product
WTP	Pearson Correlation	1	.037
	Sig. (2-tailed)		.583
	N	222	222

Attitude towards the product	Pearson Correlation	.037	1
	Sig. (2-tailed)	.583	
	N	222	222

Table 45: Correlation 1

Correlations			
		WTP	*Attitude towards the Format (physical)*
WTP	Pearson Correlation	1	.094
	Sig. (2-tailed)		.165
	N	222	222
Attitude towards the Format (physical)	Pearson Correlation	.094	1
	Sig. (2-tailed)	.165	
	N	222	222

Table 46: Correlation 2

Correlations			
		WTP	*Attitude towards the Format (digital)*
WTP	Pearson Correlation	1	-.172*
	Sig. (2-tailed)		.010
	N	222	222
Attitude towards the Format (digital)	Pearson Correlation	-.172*	1
	Sig. (2-tailed)	.010	
	N	222	222

*. Correlation is significant at the 0.05 level (2-tailed).

Table 47: Correlation 3

Correlations			
		WTP	*Attitude towards the content (Related)*
WTP	Pearson Correlation	1	.097
	Sig. (2-tailed)		.149
	N	222	222
Attitude towards the content (Related)	Pearson Correlation	.097	1
	Sig. (2-tailed)	.149	
	N	222	222

Table 48: Correlation 4

Correlations			
		WTP	Age
WTP	Pearson Correlation	1	.092
	Sig. (2-tailed)		.172
	N	222	222
Age	Pearson Correlation	.092	1
	Sig. (2-tailed)	.172	
	N	222	222

Table 49: Correlation 5

Correlations			
		WTP	Male
WTP	Pearson Correlation	1	-.032
	Sig. (2-tailed)		.638
	N	222	222
Male	Pearson Correlation	-.032	1
	Sig. (2-tailed)	.638	
	N	222	222

Table 50: Correlation 6

Correlations			
		WTP	Female
WTP	Pearson Correlation	1	.006
	Sig. (2-tailed)		.934
	N	222	222
Female	Pearson Correlation	.006	1
	Sig. (2-tailed)	.934	
	N	222	222

Table 51: Correlation 7

Correlations			
		WTP	ThirdGender
WTP	Pearson Correlation	1	.229**
	Sig. (2-tailed)		.001

	N	222	222
ThirdGender	Pearson Correlation	.229**	1
	Sig. (2-tailed)	.001	
	N	222	222
**. Correlation is significant at the 0.01 level (2-tailed).			

Table 52: Correlation 8

Correlations			
		WTP	Prefer_not_to_say
WTP	Pearson Correlation	1	-.097
	Sig. (2-tailed)		.151
	N	222	222
Prefer_not_to_say	Pearson Correlation	-.097	1
	Sig. (2-tailed)	.151	
	N	222	222

Table 53: Correlation 9

D.2 ANOVA

D.2.1 Two-way ANOVA (Format-Content → SIEF)

Between-Subjects Factors		
		N
Format	Physical	110
	Digital	112
Content	Unrelated	112
	Related	110

Table 54: Sample

Descriptive Statistics				
Dependent Variable: SIEF				
Format	Content	Mean	Std. Deviation	N
Physical	Unrelated	3.9623	1.63757	53
	Related	5.6351	.83249	57
	Total	4.8291	1.52985	110
Digital	Unrelated	4.7831	1.43901	59
	Related	5.2981	1.13789	53
	Total	5.0268	1.32488	112
Total	Unrelated	4.3946	1.58358	112
	Related	5.4727	1.00118	110
	Total	4.9288	1.43030	222

Table 55: Descriptive

Levene's Test of Equality of Error Variances[a,b]					
		Levene Statistic	df1	df2	Sig.
SIEF	Based on Mean	9.502	3	218	.000
	Based on Median	8.528	3	218	.000
	Based on Median and with adjusted df	8.528	3	191.447	.000
	Based on trimmed mean	9.362	3	218	.000
Tests the null hypothesis that the error variance of the dependent variable is equal across groups.					
a. Dependent variable: SIEF					
b. Design: Intercept + Format + Content + Format * Content					

Tests of Between-Subjects Effects								
Dependent Variable: SIEF								
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[b]
Corrected Model	86.428[a]	3	28.809	17.174	.000	.191	51.523	1.000
Intercept	5361.347	1	5361.347	3196.102	.000	.936	3196.102	1.000
Format	3.241	1	3.241	1.932	.166	.009	1.932	.283
Content	66.273	1	66.273	39.508	.000	.153	39.508	1.000
Format * Content	18.558	1	18.558	11.063	.001	.048	11.063	.912
Error	365.687	218	1.677					
Total	5845.240	222						
Corrected Total	452.115	221						
a. R Squared = .191 (Adjusted R Squared = .180)								
b. Computed using alpha = .05								

Table 56: Significance

1. Grand Mean			
Dependent Variable: SIEF			
		95% Confidence Interval	
Mean	Std. Error	Lower Bound	Upper Bound
4.920	.087	4.748	5.091

Table 57: Mean

2. Format				
Dependent Variable: SIEF				
			95% Confidence Interval	
Format	Mean	Std. Error	Lower Bound	Upper Bound
.00	4.799	.124	4.555	5.042
1.00	5.041	.123	4.799	5.282

Table 58: Mean

3. Content				
Dependent Variable: SIEF				
			95% Confidence Interval	
Content	Mean	Std. Error	Lower Bound	Upper Bound
Unrelated	4.373	.123	4.131	4.614
Related	5.467	.124	5.223	5.710

Table 59: Mean

4. Format * Content					
Dependent Variable: SIEF					
				95% Confidence Interval	
Format	Content	Mean	Std. Error	Lower Bound	Upper Bound
Physical	Unrelated	3.962	.178	3.612	4.313
	Related	5.635	.172	5.297	5.973
Digital	Unrelated	4.783	.169	4.451	5.115
	Related	5.298	.178	4.947	5.649

Table 60: Mean

Estimates					
Dependent Variable: SIEF					
				95% Confidence Interval	
Format	Content	Mean	Std. Error	Lower Bound	Upper Bound
Physical	Unrelated	3.962	.178	3.612	4.313
	Related	5.635	.172	5.297	5.973
Digital	Unrelated	4.783	.169	4.451	5.115
	Related	5.298	.178	4.947	5.649

Table 61: Simple effects

Pairwise Comparisons							
Dependent Variable: SIEF							
						95% Confidence Interval for Difference[b]	
Content	(I) Format	(J) Format	Mean Difference (I-J)	Std. Error	Sig.[b]	Lower Bound	Upper Bound
Unrelated	Physical	Digital	-.821*	.245	.001	-1.304	-.338
	Digital	Physical	.821*	.245	.001	.338	1.304
Related	Physical	Digital	.337	.247	.174	-.150	.824
	Digital	Physical	-.337	.247	.174	-.824	.150
Based on estimated marginal means							
*. The mean difference is significant at the .05 level.							

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

Table 62: Simple effects

Univariate Tests									
Dependent Variable: SIEF									
Content		Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Unrelated	Contrast	18.809	1	18.809	11.213	.001	.049	11.213	.915
	Error	365.687	218	1.677					
Related	Contrast	3.119	1	3.119	1.859	.174	.008	1.859	.274
	Error	365.687	218	1.677					
Each F tests the simple effects of Format within each level combination of the other effects shown. These tests are based on the linearly independent pairwise comparisons among the estimated marginal means.									
a. Computed using alpha = .05									

Table 63: Simple effects

Estimates					
Dependent Variable: SIEF					
				95% Confidence Interval	
Format	Content	Mean	Std. Error	Lower Bound	Upper Bound
Physical	Unrelated	3.962	.178	3.612	4.313
	Related	5.635	.172	5.297	5.973
Digital	Unrelated	4.783	.169	4.451	5.115
	Related	5.298	.178	4.947	5.649

Table 64: Simple effects

Pairwise Comparisons							
Dependent Variable: SIEF							
Format	(I) Content	(J) Content	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
						Lower Bound	Upper Bound
Physical	Unrelated	Related	-1.673*	.247	.000	-2.160	-1.186
	Related	Unrelated	1.673*	.247	.000	1.186	2.160
Digital	Unrelated	Related	-.515*	.245	.037	-.998	-.032
	Related	Unrelated	.515*	.245	.037	.032	.998
Based on estimated marginal means							
*. The mean difference is significant at the .05 level.							
b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).							

Table 65: Simple effects

Univariate Tests									
Dependent Variable: SIEF									
Format		Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Physical	Contrast	76.853	1	76.853	45.815	.000	.174	45.815	1.000
	Error	365.687	218	1.677					
Digital	Contrast	7.407	1	7.407	4.415	.037	.020	4.415	.553
	Error	365.687	218	1.677					

Each F tests the simple effects of Content within each level combination of the other effects shown. These tests are based on the linearly independent pairwise comparisons among the estimated marginal means.
a. Computed using alpha = .05

Table 66: Simple effects

D.2.2 Two-way ANOVA (Product Format - Content → WTP)

Between-Subjects Factors		
		N
Format	Physical	110
	Digital	112
Content	Unrelated	112
	Related	110

Table 67: Sample

Descriptive Statistics				
Dependent Variable: WTP				
Format	Content	Mean	Std. Deviation	N
Physical	Unrelated	15.4887	5.70114	53
	Related	17.3682	9.21897	57
	Total	16.4626	7.74987	110
Digital	Unrelated	12.3725	6.66511	59
	Related	14.2487	9.18090	53
	Total	13.2604	7.97398	112
Total	Unrelated	13.8471	6.39385	112

	Related	15.8652	9.29126	110
	Total	14.8471	8.00835	222

Table 68: Descriptives

Levene's Test of Equality of Error Variances[a,b]					
		Levene Statistic	df1	df2	Sig.
WTP	Based on Mean	2.007	3	218	.114
	Based on Median	1.612	3	218	.187
	Based on Median and with adjusted df	1.612	3	173.957	.188
	Based on trimmed mean	1.712	3	218	.166
Tests the null hypothesis that the error variance of the dependent variable is equal across groups.					
a. Dependent variable: WTP					
b. Design: Intercept + Format + Content + Format * Content					

Tests of Between-Subjects Effects								
Dependent Variable: WTP								
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[b]
Corrected Model	764.380[a]	3	254.793	4.142	.007	.054	12.427	.847
Intercept	48978.343	1	48978.343	796.268	.000	.785	796.268	1.000
Format	538.344	1	538.344	8.752	.003	.039	8.752	.838
Content	195.286	1	195.286	3.175	.076	.014	3.175	.426

Format * Content	.000	1	.000	.000	.999	.000	.000	.050
Error	13409.158	218	61.510					
Total	63110.231	222						
Corrected Total	14173.539	221						
a. R Squared = .054 (Adjusted R Squared = .041)								
b. Computed using alpha = .05								

Table 69: Significance

1. Grand Mean			
Dependent Variable: WTP			
		95% Confidence Interval	
Mean	Std. Error	Lower Bound	Upper Bound
14.870	.527	13.831	15.908

Table 70: Mean

2. Format				
Dependent Variable: WTP				
			95% Confidence Interval	
Format	Mean	Std. Error	Lower Bound	Upper Bound
Physical	16.428	.748	14.954	17.903
Digital	13.311	.742	11.848	14.773

Table 71: Mean

3. Content				
Dependent Variable: WTP				
			95% Confidence Interval	
Content	Mean	Std. Error	Lower Bound	Upper Bound
Physical	13.931	.742	12.468	15.393
Digital	15.808	.748	14.334	17.283

Table 72: Mean

4. Format * Content					
Dependent Variable: WTP					
				95% Confidence Interval	
Format	Content	Mean	Std. Error	Lower Bound	Upper Bound
Physical	Unrelated	15.489	1.077	13.365	17.612
	Related	17.368	1.039	15.321	19.416
Digital	Unrelated	12.373	1.021	10.360	14.385
	Related	14.249	1.077	12.125	16.372

Table 73: Mean

Estimates					
Dependent Variable: WTP					
				95% Confidence Interval	
Format	Content	Mean	Std. Error	Lower Bound	Upper Bound
Physical	Unrelated	15.489	1.077	13.365	17.612
	Related	17.368	1.039	15.321	19.416

Digital	Unrelated	12.373	1.021	10.360	14.385
	Related	14.249	1.077	12.125	16.372

Table 74: Simple effects

Pairwise Comparisons							
Dependent Variable: WTP							
Content	(I) Format	(J) Format	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
						Lower Bound	Upper Bound
Unrelated	Physical	Digital	3.116*	1.484	.037	.191	6.042
	Digital	Physical	-3.116*	1.484	.037	-6.042	-.191
Related	Physical	Digital	3.120*	1.497	.038	.170	6.069
	Digital	Physical	-3.120*	1.497	.038	-6.069	-.170
Based on estimated marginal means							
*. The mean difference is significant at the .05 level.							
b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).							

Table 75: Simple effects

Univariate Tests									
Dependent Variable: WTP									
Content		Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Unrelated	Contrast	271.108	1	271.108	4.408	.037	.020	4.408	.552
	Error	13409.158	218	61.510					
Related	Contrast	267.268	1	267.268	4.345	.038	.020	4.345	.546

	Error	13409.158	218	61.510					
Each F tests the simple effects of Format within each level combination of the other effects shown. These tests are based on the linearly independent pairwise comparisons among the estimated marginal means.									
a. Computed using alpha = .05									

Table 76: Simple effects

Estimates					
Dependent Variable: WTP					
				95% Confidence Interval	
Format	Content	Mean	Std. Error	Lower Bound	Upper Bound
Physical	Unrelated	15.489	1.077	13.365	17.612
	Related	17.368	1.039	15.321	19.416
Digital	Unrelated	12.373	1.021	10.360	14.385
	Related	14.249	1.077	12.125	16.372

Table 77: Simple effects

Pairwise Comparisons							
Dependent Variable: WTP							
						95% Confidence Interval for Difference[a]	
Format	(I) Content	(J) Content	Mean Difference (I-J)	Std. Error	Sig.[a]	Lower Bound	Upper Bound
Physical	Unrelated	Related	-1.880	1.497	.210	-4.829	1.070
	Related	Unrelated	1.880	1.497	.210	-1.070	4.829
Digital	Unrelated	Related	-1.876	1.484	.208	-4.802	1.049

	Related	Unrelated	1.876	1.484	.208	-1.049	4.802

Based on estimated marginal means

a. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

Univariate Tests

Dependent Variable: WTP

Format		Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Physical	Contrast	97.023	1	97.023	1.577	.210	.007	1.577	.240
	Error	13409.158	218	61.510					
Digital	Contrast	98.274	1	98.274	1.598	.208	.007	1.598	.242
	Error	13409.158	218	61.510					

Each F tests the simple effects of Content within each level combination of the other effects shown. These tests are based on the linearly independent pairwise comparisons among the estimated marginal means.

a. Computed using alpha = .05

Table 78: Simple effects

Appendix D.3

PROCESS Model 7

Content (0.00) = Unrelated
Content (1.00) = Related

```
Run MATRIX procedure:

*************** PROCESS Procedure for SPSS Version 3.5.3 ***************

          Written by Andrew F. Hayes. Ph.D.       www.afhayes.com
    Documentation available in Hayes (2018). www.guilford.com/p/hayes3

**************************************************************************
Model  : 7
    Y  : WTP
    X  : Format
    M  : SIEF
    W  : Content

Sample
Size:  222

**************************************************************************
OUTCOME VARIABLE:
 SIEF

Model Summary
          R       R-sq        MSE     F(HC4)        df1        df2
p
       .437       .191      1.677     17.036      3.000
218.000       .000

Model
              coeff    se(HC4)          t          p       LLCI       ULCI
constant      3.962       .225     17.607       .000      3.519      4.406
Format         .821       .293      2.804       .006       .244      1.398
Content       1.673       .251      6.676       .000      1.179      2.167
Int_1        -1.158       .350     -3.310       .001     -1.847      -.468

Product terms key:
 Int_1    :        Format   x        Content

Test(s) of highest order unconditional interaction(s):
       R2-chng     F(HC4)        df1        df2          p
X*W       .041     10.959      1.000    218.000       .001
----------
    Focal predict: Format   (X)
          Mod var: Content  (W)

Conditional effects of the focal predictor at values of the moderator(s):

    Content     Effect    se(HC4)          t          p       LLCI       ULCI
       .000       .821       .293      2.804       .006       .244      1.398
      1.000      -.337       .191     -1.761       .080      -.714       .040

Data for visualizing the conditional effect of the focal predictor:
Paste text below into a SPSS syntax window and execute to produce plot.
```

```
DATA LIST FREE/
   Format     Content    SIEF        .
BEGIN DATA.
       .000       .000      3.962
      1.000       .000      4.783
       .000      1.000      5.635
      1.000      1.000      5.298
END DATA.
GRAPH/SCATTERPLOT=
 Format   WITH     SIEF      BY       Content  .

************************************************************************
OUTCOME VARIABLE:
 WTP

Model Summary
          R       R-sq        MSE     F(HC4)        df1        df2
p
       .259       .067     60.382      7.437      2.000
219.000       .001

Model
              coeff    se(HC4)          t          p       LLCI       ULCI
constant     12.021      1.874      6.416       .000      8.328     15.713
Format       -3.384      1.053     -3.215       .001     -5.458     -1.310
SIEF            .920       .349      2.636       .009       .232      1.608

****************** DIRECT AND INDIRECT EFFECTS OF X ON Y *****************

Direct effect of X on Y
     Effect    se(HC4)          t          p       LLCI       ULCI
     -3.384      1.053     -3.215       .001     -5.458     -1.310

Conditional indirect effects of X on Y:

INDIRECT EFFECT:
 Format      ->    SIEF         ->    WTP

    Content     Effect     BootSE   BootLLCI   BootULCI
       .000       .755       .388       .095      1.587
      1.000      -.310       .217      -.785       .044

Index of moderated mediation (difference between conditional indirect
effects):
             Index     BootSE   BootLLCI   BootULCI
Content     -1.065       .510     -2.140      -.163
---

*********** BOOTSTRAP RESULTS FOR REGRESSION MODEL PARAMETERS ************

OUTCOME VARIABLE:
 SIEF

              Coeff   BootMean     BootSE   BootLLCI   BootULCI
constant      3.962      3.961       .224      3.520      4.392
Format         .821       .823       .290       .255      1.399
Content       1.673      1.673       .251      1.186      2.172
Int_1        -1.158     -1.158       .348     -1.843      -.465

----------
```

```
OUTCOME VARIABLE:
 WTP

              Coeff   BootMean     BootSE   BootLLCI   BootULCI
constant     12.021     12.049      1.896      8.628     15.956
Format       -3.384     -3.384      1.048     -5.388     -1.270
SIEF            .920       .916       .351       .186      1.564

************************ ANALYSIS NOTES AND ERRORS ************************

Level of confidence for all confidence intervals in output:
  95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
  5000

NOTE: A heteroscedasticity consistent standard error and covariance matrix
estimator was used.

------ END MATRIX -----
```

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Summary

1. Introduction

Problem Background

Although digital goods have numerous benefits that empower them, people still give a higher value to physical products. This is a problem for those businesses that are focusing on offering digital goods since they are not able to charge higher prices for them. The goal of this study is to bring into light important nuances regarding how and when consumers are willing to pay more for digital goods rather than physical ones.

Previous research on digital vs. physical products focused on the consumer's willingness to pay (WTP) without taking into account something that is extremely crucial nowadays: the environment involvement and how important eco-friendliness is for people. An important factor to keep in mind is that one of the intrinsic benefits of digital goods perceived by people is that they avoid pollution (Huang, H. C., 2013). It is also important to highlight the term "consumers perception". There is no absolute truth as to whether digital or physical goods are greener (The Guardian, 2014). It all depends on the context and on what is being focused on. What really matter for the scope of this thesis is the perception that consumers have about digital goods. Consumers currently perceive digital goods such as e-books as more environmentally friendly than their physical counterpart an in fact, recognize "environmental sustainability" as one of their attributes. (Gilbert, J., & Fister, B., 2015). Moreover, it has been observed that in recent years consumers are willing to pay more for eco-friendly goods (The Integer Group – The Checkout: Issue 3.2019; Nielsen, 2015)

If people environmental concern gets triggered, they may prefer digital goods to physical products and may also be more willing to pay for the digital version since they perceive it as greener. Hence, the price gap between digital and physical goods may be reversed when eco-friendliness is triggered and becomes an important factor in purchasing behavior. Suddenly, digital goods assume a higher inner value for the customer. Can the content of a product (e.g. a book about how humanity is destroying Earth) turn people eco-conscious about the environment and the product itself since they are reminded that it is really important? This research focuses on the fact that when people deal with a product that has content related to the environment they may be reminded that they should actually be thinking about eco-friendliness and its related values. When a commodity is related to the environment it may enhance the Situational Importance given to eco-friendliness (SIEF), which, in turn, enhances WTP for digital goods.

Willingness to Pays was examined in a 2 (product format: digital, physical) x 2 (product content: related to the environment, unrelated to the environment) between-subjects design. Thus, when consumers face a product unrelated to the environment, WTP for physical goods is expected to be higher compared to digital goods, as shown by Atasoy & Morewedge. On the other hand, when consumers

deal with a product related to the environment, they suddenly become aware about it, and may be willing to pay more for the digital format of the product.

Relevance for Theory

This research is going to contribute to different streams of literature. More precisely, it could be placed among literature regarding consumer purchasing behavior, willingness to pay and environmental involvement.

This study fills the gap about which situation could enhance the relationship between digital goods and the willingness to pay for them. Furthermore, this study differs from prior research since, referring to goal priming and motivation, it was hypothesised that Situational Importance of Eco-friendliness for digital goods may be triggered by cues related to environmental awareness, leading to higher WTP for digital products.

Relevance for practice

Having managers to know that in a certain situation, under certain circumstances (content) people are willing to pay more for digital products (vs physical) it is key to develop the right products and make sure that people are willing to pay for them. This study wants to show that when a good is related to the environment, people willingness to pay for the digital version of a product is going to increase.

Problem statement and Research questions

The following problem statement will guide the whole research:

What is the effect of Product Format (digital vs physical) on Willingness to Pay (WTP), mediated by Situational Importance of Eco-friendliness (SIEF) and moderated by Product Content (Unrelated vs Related to the environment)?

Thereby, the following research questions were developed:

When is the relationship between Product Format (digital vs physical) and Situational Importance of Eco-friendliness enhanced? For example, is Product Content (related vs unrelated to the environment) increasing SIEF for digital goods (vs physical)?

How do consumers decide how much they are willing to pay for products? For example,

Does Situational Importance of Eco-friendliness, which is affected by the interaction between format (digital vs physical) and content (unrelated vs related), explains WTP for different product formats? Are consumers more willing to pay for something that triggers the importance they give to eco-friendliness?

2. Theory

Willingness to pay

Willingness to pay (WTP) is the maximum price a customer is willing to pay for a product or service and can be represented by a monetary figure or a price range. Previous research has shown that consumers are willing to pay more for physical goods rather than their digital counterpart (Atasoy &

Morewedge, 2018). Therefore, the format of the product seems to have an impact on the willingness to pay for it.

The moderating role of Product Content

As just explained, digital goods are commonly perceived as eco-friendly. In this study it was assessed whether the content of the product can make people even more aware of the eco-friendliness of digital goods. If the content of the product is related to the environment it should trigger some degrees of importance of eco-friendliness. The mechanism behind that can be explained through goal priming theory, which is going to give some answers to show why and how people can be influenced and triggered by situations (such as a specific product content) and how different conditions affect their motivation. Cues, such as images representing a concept, can trigger goal-directed cognition and behaviour without the need for conscious intentions.

Thus, when product content is related to the environment it will trigger consumers' mind developing a state of awareness that will guide their behavior. The rationale is that consumers will be triggered by the impactful environment-related content of the product and, if their awareness about the environment is enhanced, their motivation to pay more for digital goods will increase in order to act in favour of the environment. Indeed, the related to the environment content should prime consumers towards a goal of environmental sustainability, and so make them more likely to value digital goods over than physical ones.

H1a: When content is unrelated to the environment, consumers are willing to pay more for the physical goods (vs digital goods).

H1b: When content is related to the environment, consumers are willing to pay more for digital goods (vs physical goods).

Thus, unconsciously activated goals effectively guide action. In this case, cues about the environment would activate the goal to purchase products which are good for the environment. Specifically, this effect will hold for digital goods rather than physical, thanks to their eco-friendly perception.

The mediating role of Situational Importance of Eco-friendliness

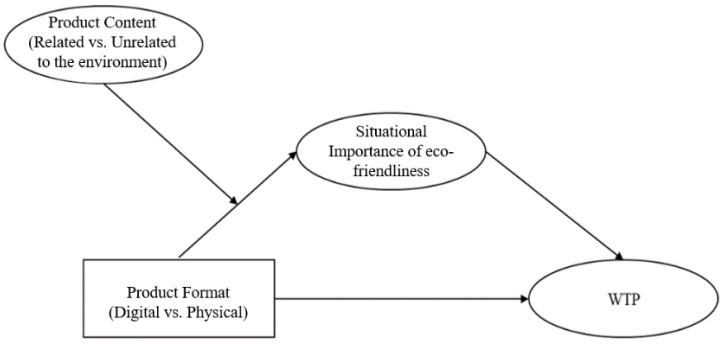
According to previous research, the relationship between Product Format and WTP may be explained through Situational Importance of Eco-Friendliness. It has been observed that in recent years consumers are willing to pay more for eco-friendly goods (The Integer Group – The Checkout: Issue 3.2019; Nielsen, 2015). Then, if consumers perceive digital goods as eco-friendly, they will be more willing to pay for them. In order to enhance the odds that digital goods may be perceived as eco-friendly, Product Content related to the environment plays a key role in triggering consumer Situational Importance of Eco-friendliness. The intervention of a cue such as the content (see previous section) related to the environment, should unleash a higher Situational Importance of Eco-friendliness that may leads consumers to prefer digital goods compared to physical products and be more willing to pay for

the digital version since they perceive it as greener. The price gap between digital and physical goods may be reversed when we are dealing with consumers who are rising their environment concerns, indeed, this study is actually predicting a reverse of WTP for physical vs digital goods when the condition above is met. Suddenly, the digital good assume a higher inner value for the customer. SIEF is therefore a measure of the degree of activation of the goal: the more active it is, the higher the digital WTP. However, in order to enhance SIEF, the intervention of content related to the environment is necessary to trigger consumers' goal to be more environmentally aware.

H2: The effect in H1b (but not in H1a) is explained by Situational Importance of Eco-friendliness.

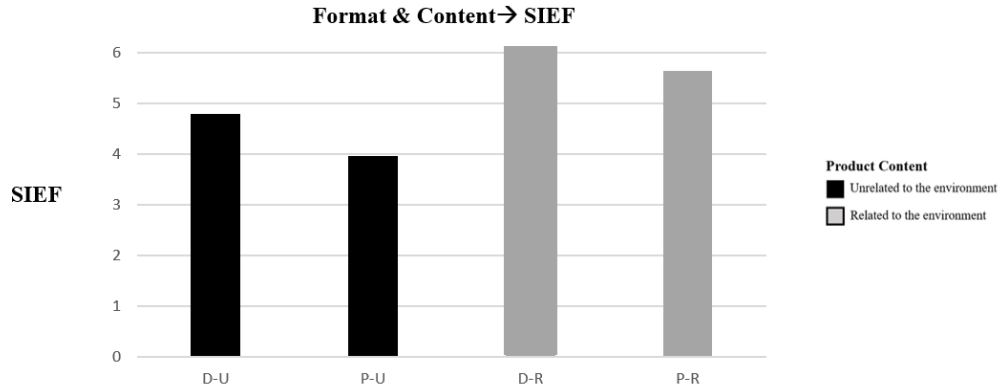
Conceptual model

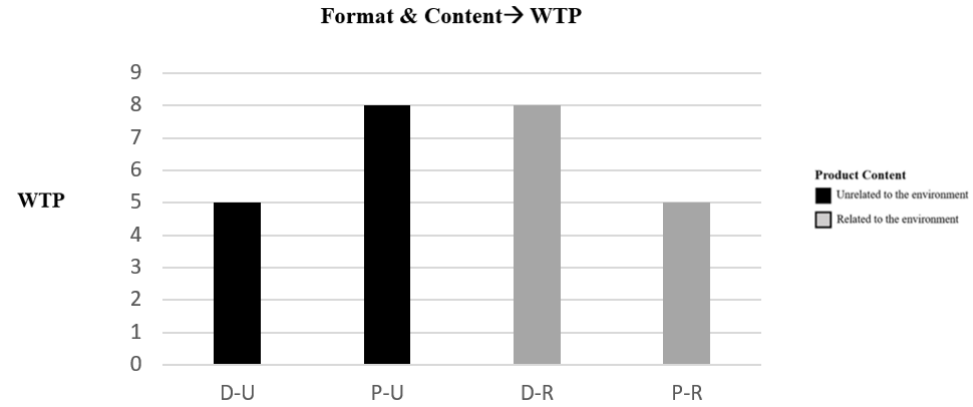
Consumers have different *WTP* (dependent variable) for digital and physical goods (independent variable). Past research found out that people are willing to spend more for a physical version of a product due to the value-enhancing effects of psychological ownership. However, what is missing in the literature is whether this relationship may be reversed. Indeed, when Product Content is related to the environment, the main effect is mediated by the variable called *Situational Importance of eco-friendliness (SIEF)*. When the content is related to the environment it will trigger consumers by increasing their *SIEF*, which, in turn, increases *WTP* for digital goods. The more the product format, together with the content, enhances this *Situational Importance of Eco-friendliness*, the more the consumer is willing to pay for digital goods.



Predicted results

Hypotheses were developed referring to theory and based on the following graphs about the predictions expected from this study thanks to previous research inferences. Indeed, from previous research it is possible to expect that when things are related to the environment, *SIEF* would be higher for digital goods and the main effect where people are willing to pay more for physical goods would be reversed.





3. Methodology

A research experiment was developed to measure the relationships between the conceptual model variables and to answer the research questions and demonstrate the proposed hypotheses. The goal of this study is to demonstrate whether the gap between *WTP* for physical and digital goods may be reversed when consumers' *Situational Importance to Eco-friendliness* is activated and when the content of the product triggers some degrees of environmental concerns.

Pre-test

The product category chosen for the study regards books. In particular, Product Format manipulation regarded an e-book (digital) vs a paper book (physical). Moreover, the other manipulation was referred to Product Content, where the book is related or unrelated to the environment. In order to assess whether the manipulation actually worked, a pre-test was run. However, since Product Format manipulation appears obvious and unequivocal, it was decided to pre-test only Product Content and whether the chosen cue for goal prime theory was actually perceived as related to the environment or not.

Within-subjects (or paired-samples) t test was used to compare means differences between two dependent groups (digital vs physical) and evaluate whether digital goods are actually perceived as more eco-friendly than physical goods. Perceived eco-friendliness was significantly ($t(96) = 6.472$, $p =$

0.000) higher for digital products (M = 5.03, SD = 1.39) than physical goods (M = 3.45, SD = 1.41) (See Appendix B). These results confirm that people actually perceive digital goods (e-books) as more eco-friendly compared to their physical counterpart (paper books).

Moreover, an independent t-test showed that the manipulation of the product content was successful. The means were significantly different (t(95) = -9.317, p = 0.000). In particular, the product related to the environment was perceived as fairly related to the environment (M = 5.84, SD = 1.11). On the other hand, the product unrelated to the environment was legitimately perceived not related to the environment (M = 3.19. SD = 1.65) (See Appendix B).

Design

An online experiment was conducted. Participants were randomly allocated to one of the conditions of the experiment, reducing, in that way, extraneous influences. This study was based on a 2 (digital vs physical format) x 2 (related vs unrelated to the environment) between subjects design where each participant is faced with only one of the four conditions.

Measures

Willingness to pay (WTP): Each participant would report how much he or she is willing to pay for one out of the four scenarios. In particular, an open ended response box is provided and participants enter the maximum amount of money they would be willing to pay for the good (Atasoy, & Morewedge,2018; Homburg, Koschate, & Hoyer, 2005).

Situational Importance of eco-friendliness (SIEF): Situational importance of eco-friendliness measure is evaluated using a 7 point Likert scale adapted from Böttger, Rudolph, Evanschitzky, & Pfrang, T. (2017) customer inspiration measure and referred to the eco-friendly theme by using Chen, Qiu, Xiao, He, Mou, & Siponen (2021) consumption attitude of eco-friendly product scale. The following items were used: (1) I was inspired to buy eco-friendly products; (2) I felt a desire to buy products that do little harm to the environment; (3) My interest to buy eco-friendly products was increased; (4) I was motivated to buy eco-friendly products; (5) I felt an urge to protect the environment.

Sampling

The target population for this study includes all people 18 years old or older. At this age people are adult enough to diligently consider how much they are willing to pay for a product. Moreover, interviewing people from different countries would cause a lack of sample homogeneity and non-sampling error would arise. Books prices vary depending on the country, as well as people's salaries and habits, resulting in a biased measure of *WTP*. A Homogeneous sample might help *WTP* showing significant results. Consequently, respondents were collected from the same country (Italy).

Through the use of G*Power a sample size of 212 respondents was determined, which satisfies the rule of thumb of having at least 50 participants per cell for a 2x2 between subjects design.

The sampling technique applied in this study to gather responses is the snowball non-probability sampling, for which the selection of additional respondents is based on referrals from initial respondents

chosen on personal network. Respondents were mainly invited through WhatsApp links, but also other social networks.

4. Results

Overall structure (study)

Participants were first exposed to one of the four conditions and asked to carefully look at the book cover and read the plot right below. Then, participants had to take an attention check with those failing it excluded from the analysis. Next, respondents answered questions regarding the *Situational Importance of Eco-friendliness* and their *Willingness to Pay* for the product in the condition they were exposed to. The order of the mediator and the dependent variable was randomised. Indeed, measuring the mediator before the DV might have affected the responses. Then, the manipulation check used in the first pre-test was repeated, and finally the covariates were assessed.

Before running the experiment a second pre-test consisting of a check of the comprehensiveness and flow of the questionnaire was conducted. The only weakness of the questionnaire was the length of the text for the conditions. However, decision was made to keep it as it was presented since respondents completed the survey in a focused and proactive way.

Sample

A total of 671 responses from Italian consumers were collected over a period of 5 days. As assessed in the previous chapter, at least 212 participants were needed for the experiment. However, only 343 out of 671 respondents actually completed the questionnaire. Moreover, 5 responses were deleted due to their "preview" nature (they were not real data but checks to assess whether the survey worked fine) and 3 participants were excluded from the analysis as they were under 18 years of age.

Preliminary data analysis

A chi-square test was performed to examine the relationship between those who passed the attention check and those who failed it amongst the different groups. The relationship was not significant, X2 (1, N = 342) = 3.1, p = 0.371, which means that if the responses were deleted for those who failed the attention check, there was not differential exclusion of participants between conditions (see Appendix C.1). Thus, 225 respondents were retained after the attention check.

At this point, potential outliers in the *WTP* measure were checked through the inspection of a boxplot of the dependent variable values. As a result, 3 outliers were excluded from the study (*WTP* = 65.00 €; 89.00 €; 100.00 €) (see Appendix C.2)

After data cleaning, the remaining sample size for the analysis was 222 respondents, which is above the minimum (n = 212) established through the use of G*Power. Moreover, a minimum of 53 and a maximum of 59 participants was assigned to each condition, resulting a fairly equal partition of the treatment groups (C1 = 57; C2 = 53; C3 = 53; C4 = 59). The minimum age of the respondents was 18 years old and the maximum 81 years old. The mean age was 43,30 (SD = 15,67). In addition, 35.6% of the respondents were male (n = 79) and 62.6% were female (n =139) (see Appendix C.3).

Reliability of Measurement Scales

A reliability and validity test of the multi-item scale for *Situational Importance of Eco-friendliness* was performed. First, a check was taken to see whether any missing values were present and this check proved negative. Next, Cronbach's Alpha of the multi item scale is $\alpha = 0.934$, which means that the scale provides good internal and external consistency ($\alpha \geq 0.9$) (George & Mallery, 2003) (see Appendix C.4).

Manipulation Check

In order to assess whether the manipulation was successful, a manipulation check such as the one in the first pre-test was conducted. To analyse the manipulation check a two-way ANOVA was run to compare means across different groups (see Appendix C.5). The effect of *Format* ($F(1,218) = 0.290$, $p = 0.591$) and its interaction with *Content* ($F(1,218) = 0.713$, $p = 0.399$) were not significant, whereas *Content* was significant ($F(1,218) = 173.251$, $p = 0.000$), meaning that the content manipulation was successful. In particular, those who experienced the scenario with a paper book unrelated to climate change expressed a perceived relativeness to climate change where $M = 3.23$ ($SD = 1.857$). Meanwhile, results from those exposed to the related to climate change paper book evidenced $M = 6.05$ ($SD = 1.999$). Moreover, when e-book was unrelated to the environment showed $M = 3.26$ ($SD = 1.849$) while the mean score was higher when the book was related to the environment ($M = 5.77$, $SD = 1.203$). Thereby, subjects included in the unrelated to the environment condition did indeed perceive the book as unrelated to the environment. Instead, those exposed to the related to the environment condition recognized it as related to climate change.

Randomisation Check

It was necessary to assess whether there were significant differences for what concern participants demographics between the experimental groups. If it is not the case the results might be confounded. ANOVA was performed with Age as the dependent variable (see Appendix C.6). No significant difference was revealed (Age) between the groups. Indeed the effect of Format ($F(1,218) = 0.282$, $p = 0.596$), Content ($F(1,218) = 0.105$, $p = 0.747$), and their interaction ($F(1,218) = 0.001$, $p = 0.974$) are not statistically significant.

Differences in gender were checked by means of chi-squared tests. The Likelihood-ratio test could accept the null hypothesis with a 95% confidence level ($LR (9, n=222) = 16.727$, $p = 0.053$). I accept H0 (There is not a significant difference). There is no difference between the four groups proving that randomisation was successful.

Assumptions

In order to analyse data using a two-way ANOVA, data must be checked to make sure it meets the six assumptions required to run a two-way ANOVA. In particular, none of the assumption stopped the subsequent main analysis.

Using Hayes PROCESS Macro for SPSS assumptions have to be tested as well. In particular, there are three important assumptions to consider: Normality, Homoscedasticity and Linearity. In order not to be troubled by normality, bootstrapping was used for all regression coefficients. Next, it is not necessary to worry about homoscedasticity if robust standard errors (HC4) are used. Finally, linearity is automatically met for binary (dummy) variables.

In this research, the following covariates were selected: *Attitude towards the product*; *Attitude towards the format* (physical vs. digital); *Attitude towards the content* (related to the environment); *Gender*; *Age*.

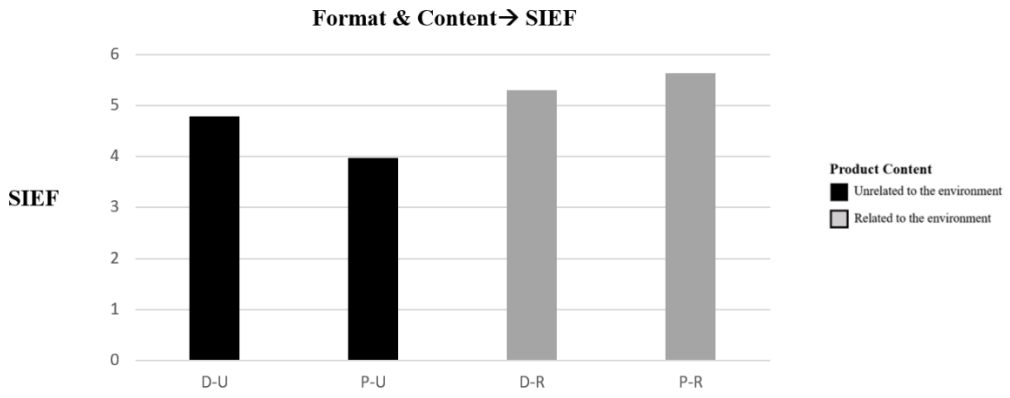
Attitude (i.e. towards the product, format, content) can be defined as a set of beliefs and emotions that consumers have and that lead to changes in their behavior, meaning that it can affect *WTP*. Attitude towards the product, format and content was measured through four statements on a 7-point Likert scale (1=Strongly Disagree; 7=Strongly Agree) used by Chang (2017). That scale is "general" since the statements are usable with a wide range of objects and can be adapted for product; format and content. In order to include covariates in the analysis, it was necessary to first test whether the appropriate statistical assumptions held. In the end, none of the covariates could be included in the analysis.

ANOVA

First, the relationships in the model by means of ANOVA was analysed. Then, the whole model was tested through PROCESS.

Format – Importance of Eco-friendliness (Moderated by Content)

A two-way ANOVA with *Situational Importance of Eco-friendliness* as the dependent variable was run. When *Product Content* was related to the environment, *SIEF* was higher (M = 5.47, SD = 1.00) than when the content of the product was unrelated to the environment (M = 4.39, SD = 1.58). However, this score was even higher when the product related to the environment was presented in the physical format (M = 5.64, SD = 0.83) rather than digital (M = 5.30, SD = 1.14), which was not what was expected.



The two-way ANOVA with Situational Importance of Eco-friendliness as the dependent variable (R^2 = 0.191) showed a not-significant main effect between *Product Format* and *SIEF* (F(1,218) = 1.932, p = 0.166). However, the results showed a significant main effect of the *Product Content* (F(1.218)=39.508; p = 0.000.) and its interaction with *Product Format* (F(1,218)=11.063; p=0.001) on the mean *Situational Importance of Eco-friendliness* score (see Appendix D.2.1). Thus, *Product Format* alone does not impact *Situational Importance of Eco-friendliness*. However, when *Product Content* is taken into consideration, their interaction has an impact on *Situational importance of eco-friendliness*.

Since there was a significant interaction, it was necessary to look at simple effects. Looking at the two levels of *Product Content*, when content is unrelated to the environment, there was a significant effect (F(1,218) = 11.213, p = 0,001), which means that there is a significant difference in *Product Format* levels (physical vs digital) on *SIEF*. Indeed, digital goods (vs physical) unrelated to the environment, lead to higher *SIEF*, which can be explained by the fact that digital goods are actually perceived as eco-friendly (Huang, 2013; Gilbert & Fister, 2015). However, when *Content* is related to the environment, the effect was not significant (F(1,218) = 1.859, p = 0.174), meaning that for this level, there is no significant difference between physical and digital goods on *SIEF*. Both digital and physical goods lead to higher levels of SIEF when related to the environment.

When looking at Format levels across Content, the simple effect was significant both when it was physical (F(1,218) = 45.815, p = 0.000) and digital (F(1,218) = 4.415, p = 0.037), which means that both physical and digital goods have a positive impact on *SIEF* when content is related to the environment. In sum, both related to the environment physical and digital goods lead to higher levels of *Situational Importance of Eco-friendliness*. This means that goal priming intervention did work, leading to higher levels of situational importance of eco-friendliness. In contrast to what it was assumed, this effect was not enhanced only for digital goods, but also for physical ones.

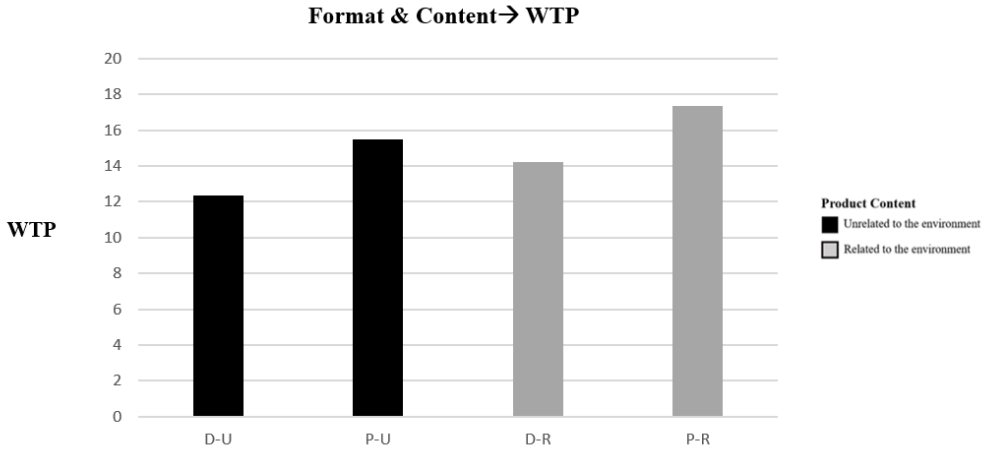
Product Format - Content and WTP

At this point, Two-way ANOVA with *WTP* as the dependent variable was conducted. (see Appendix D.2.2). The effect of *Product Format* on *WTP* was significant (F(1,218) = 9.203 p = 0.003), in particular *Willingness to Pay* was higher for the physical product (M = euro 16.46, SD = 7.75) than the digital one (M = 13.26, SD = 7.97). Moreover, *Content* (F(1,218) = 3.175, p = 0.076) had a marginally significant effect on *WTP*, meaning that consumers are willing to pay more for products related to the environment (M = 15.87, SD = 9.29) compared to goods unrelated to the environment (M = 13.85, SD = 6.39). However, the interaction between *Format* and *Content* (F(1,218) = 0.000, p = 0.999) did not show a significant effect on the dependent variable, meaning that the gap in *WTP* was exactly the same when comparing physical and digital goods (unrelated and related to the environment).

Even though there was no significant interaction effect, it is still interesting to look deeper into the simple effects (Appendix D.2.2) to understand whether the effect of one factor on the outcome measure is different depending on the levels of the other factor. In particular, when *Product Format*

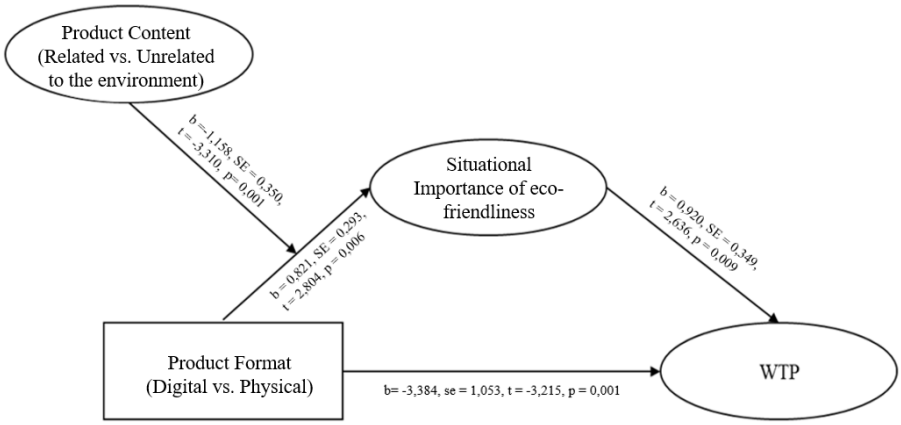
was physical (F(1,218) = 1.577, p = 0.210) there was no difference in willingness to pay for content unrelated or related to the environment. Same results were showed for digital goods (F(1,218) = 1.598, p = 0.208). Both when the format is physical and digital, there is no difference in willingness to pay for unrelated or related to the environment goods.

On the other hand, both when the content was unrelated (F(1,218) = 4.408, p = 0.037) or related to the environment (F(1,218) = 4.345, p = 0.038), there was a significant difference on WTP for physical and digital goods, in particular consumers are willing to pay more for physical products than digital ones, both when content is unrelated and related to the environment.



Moderated Mediation Analysis

At this point, to assess the entire model, a moderated mediation analysis with *Situational Importance of Eco-friendliness* as the proposed mediator and *Product Content* as the moderator was conducted.



From the results of the PROCESS Model 7 matrix (see Appendix D.3), the index of moderated mediation was observed first. This index was significant (95% CI: [-2.140, -0.163]. Thus, it was necessary to look at the indirect effect (*Format → SIEF → WTP*) at different values of the moderator (*Content*). When the *Content* was related to the environment, there was not a significant effect (95% CI: [-0.785, 0.044] and *SIEF* did not explain the difference in *WTP*. However, when *Content* is unrelated

to the environment, there was a significant effect [95% CI: [0.095, 1.587], thus *SIEF* did explain the difference in *WTP* (H2 rejected). Apparently, goal priming through the content related to the environment cue was not necessary as a means of increasing *Situational Importance of Eco-friendliness*. Indeed, being exposed to a digital good may enhance *SIEF* due to its inner eco-friendly perception, confirming results from ANOVA. Overall, consumers' *Situational Importance of Eco-friendliness* explains the relationship between *Product Format* and *WTP* only when the content is unrelated to the environment (H1b rejected). Moreover the direct effect of *Product Format* on *WTP* was significant and negative (b = -3.384, SE = 1.053, t = -3.215, p = 0.001). Thus, as expected from theory, generally digital format has a negative effect on *WTP*, while physical goods have higher *WTP* (H1a confirmed).

Now, the focus here was on the "a path" of the model, where the outcome variable is the mediator *Situational Importance of Eco-friendliness*. In particular, *Product Format* had a significantly positive effect on mediator (b = 0.821, SE = 0.293, t = 2.804, p = 0.006). Showing that digital goods lead to higher *SIEF* thanks to their inner benefits. The interaction between the independent variable and the moderator was negatively significant (b =-1.158, SE = 0.350, t = -3.310, p= 0.001), so there is a moderated a path, and 4.1% of the variance of the mediator was explained by the interaction between IV and W. However, looking at the indirect effect at different values of the moderator, content unrelated to the environment was significant with a positive effect (b = 0.821, SE = 0.293, t = 2.804, p = 0.006) meaning that when content is unrelated to the environment there is a difference in *SIEF* measure for physical and digital goods, in particular, digital goods unrelated to the environment increase consumers' *Situational Importance of Eco-friendliness*. Moreover, content related to the environment had a marginally significant negative effect (b = -0.337, SE = 0.191, t = -1.761, p = 0.08), in contrast to the ANOVA results. In other words, when the interaction coefficient is negative, as in the case of that a path, the effect of the combined action of two predictors is less than the sum of the individual effects: the association between one of the predictors (IV) and the DV decreases if the other predictor increases, meaning that when the content is related to the environment, there is a difference in *SIEF* when dealing with physical or digital goods, in particular consumers situational importance of eco-friendliness is higher when facing physical products related to the environment rather than digital ones. In this study it was hypothesised that when content is related to the environment, digital goods leads to higher *SIEF*, however, what happens is that, when related to the environment, physical goods lead to higher levels of SIEF (H1b and H2 rejected).

Next, it is necessary to examine at the "b-path" and "c'-path". First, as already reported, significant positive mediation (b-path) was assessed (b = 0.920, SE = 0.349, t = 2.636, p = 0.009), which means that *SIEF* is a significant predictor of *WTP*. As already explained above, also the direct effect (c' path) was significant (b= -3.384, se = 1.053, t = -3.215, p = 0.001), confirming previous research findings about higher *WTP* for physical goods (H1a confirmed). Bootstrap results assesses whether the results looked at previously for the two parts of the model are robust when it comes to possible violations of normality. In particular, each result has been confirmed. Indeed, a-path (95% CI [-1.843,

-0.465]), b-path(95% CI [0.186, 1.564]) and c'-path (95% CI [-5.388, -1.270]) were significant. Overall, among the hypotheses, H1a was the only one confirmed. Indeed, H1b and H2 had to be rejected. However, in the next section a discussion about interesting results worthy of consideration is presented.

5. Conclusion

The first research question of this study focused on when the relationship between *Product Format* and *Situational Importance of eco-friendliness* would be enhanced, wondering whether the intervention of *Product Content* related to the environment could increase *SIEF* for digital goods (vs physical goods). The second research question regarded how do consumers decide how much they are willing to pay for products. Asking whether *SIEF*, which is affected by the interaction between *Format* (physical vs digital) and *Content* (unrelated vs related), explains *WTP* for different product formats. In particular, it was hypothesised that digital goods related to the environment would have triggered higher levels of *SIEF*, which, in turns, would have led to higher WTP.

However, results from ANOVA showed that when the product is related to the environment, *SIEF* increases both for physical and digital (there is no difference), which is not what was expected. Alternatively, bootstrapping revealed that when products are related to the environment, *SIEF* marginally increases for physical goods, which is the opposite of what was supposed. This might happen because, generally speaking, consumers trust information provided by paper more than when it is provided through digital format (Two Sides, 2017), meaning that cues such as how people are destroying hearts trigger consumers environmental concerns when that information is provided through paper rather than digital. At the same time, content is still a good cue to trigger higher levels of *SIEF* both for physical and digital goods.

Furthermore, when the product is unrelated to the environment, *SIEF* is higher for digital goods (vs physical). This effect is especially interesting, and can be explained by digital products inner benefits of being perceived as more eco-friendly compared to physical products, reducing the need for cue such as content related to the environment to trigger higher *SIEF*.

Next, results showed that consumers are generally willing to pay more for physical goods rather than digital ones. On the other hand, *Situational Importance of Eco-friendliness* has a significant positive effect on *Willingness to Pay*. The value that consumers associate with a certain products relies on the situational inspiration/motivation to behave in a eco-friendly way starting from the moment that they are exposed to the product, thus, when *SIEF* is enhanced, *WTP* increases as well. However, *SIEF* explains the difference in *WTP* only when *Product Content* is unrelated to the environment, with digital goods leading to higher *SIEF*. Hence, when digital goods are unrelated to the environment, the digital format alone is enough to trigger *SIEF* and, in turn, increase *Willingness to Pay*. However, this higher *WTP* is not reflected in the mean scores where physical goods unrelated to the environment have higher *WTP* compared to digital ones. Probably, *WTP* is actually influenced by other factors stronger than

Situational Importance of Eco-friendliness (i.e. perceived ownership, as assessed by Atasoy & Morewedge, 2018).

In sum, *Product Content* was a good cue to trigger *SIEF*, but, *Situational Importance of Eco-friendliness* does not explain the difference in *WTP* for different formats when they are related to the environment. On the other hand, there is an interesting result where digital format alone is enough to trigger *SIEF*. Even if people are willing to pay more for physical goods, digital goods lead to higher *SIEF*, which in turn should increases *WTP*. So, even though people in general are willing to pay more for physical goods, there are aspects of digital products that can increase *WTP*.

Theoretical Implications

Even though people are willing to pay less for digital goods (vs. physical goods), SIEF might boost *WTP* for digital goods. It was shown that although *Product content* is a good cue to trigger *SIEF*, willingness to pay is not explained by *SIEF* for products related to the environment. On the other hand, digital goods unrelated to the environment lead to higher levels of *SIEF* without the need of a cue such as content related to the environment, resulting in higher *WTP*.

Managerial/Practical Implications

In practice, due to the greener perception of digital goods and the results of this study, managers now know that digital goods lead to higher environmental concerns. As it has been showed, content related to the environment enhances this effect, however, when content is related to the environment, *SIEF* does not explain differences in *WTP*. On the other hand, *SIEF* explains differences in *WTP* for digital goods unrelated to the environment. Hence, practicians can now start looking for cues that enhance and exploit the already existing positive relationship between digital goods and situational importance of eco-friendliness assessing whether higher levels of WTP may be reached.

Limitations and further research

Some limitations need to be highlighted. First, the conditions resulted to be too cognitive demanding for respondents. Secondly, *WTP* can be measured in different ways. For this study a survey where respondents were asked to express how much they value the product was implemented. A particular analysis that could be used for future research is Conjoint Analysis, which suggest the correct price that consumers are willing to pay by simulating the trade-off decisions they usually make in the real world. Thirdly, this research only pertains to the comparison between paper and digital books. Fifthly, this study may be developed through possible extensions. Indeed, it would be interesting to know whether there could be other moderators capable of influencing the relationship between Product Format and Situational Importance of Eco-friendliness. Sixthly, the higher *SIEF*, the more people are willing to pay for digital goods unrelated to the environment. However, a contradiction has emerged. the mean scores show that *WTP* is higher for physical goods even though digital goods have higher *SIEF*. Other elements may have a stronger influence on *WTP* than *SIEF*.

Moreover, *SIEF* may also be a mediator of other relationship between other products rather than physical and digital goods. Cues regarding the importance of eco-friendly actions may manage consumers behaviors in one direction rather than another for several other products.

Furthermore, there are several moderators that could influence the direct effect between *Product Format* and *WTP*. For instance, digital goods fits the living style of consumers in an increasingly mobile and liquid world (Bardhi et al., 2012). Thus, the Need for Fast Paced Lifestyle could moderate the above relationship in favour of higher *WTP* for digital goods.