

EFFECTS OF EMBODIED COGNITION WITHIN VOLUNTEER TOURISM



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ABSTRACT

The industry of volunteer tourism is currently experiencing an exponential growth, which is reflected in the growth of academic interest towards the field. More research is dedicated to look at the benefits of “travelling with purpose”, as coined by Brown in 2005. Specifically, the academics deep dive into the benefits of volunteering as well as the possible negative impact that this trend brings along. Current research looks at volunteer tourism as generally a positive phenomenon and investigates the motivations behind the volunteering through the lenses of the consumer psychology field, specifically embodied cognition, which have not been applied to this industry before. The current study included the quantitative study of 75 Copenhagen Business School students, done through the experiment consisted of temperature priming of participants with subsequent administration of questionnaire. We measured through structural equation modelling and independent samples t-test analyses, if affecting the participants with the cold or warm temperature would increase their perceived feeling of loneliness, which would activate the altruistic or egoistic motive to affiliate through engaging in volunteer tourism. Due to the unexpected affiliation with experiment conductors (what we named as a change in psychological baseline within this research), the participants, who received the cold prime, did not show an increase in the perceived feeling of loneliness compared to the group that received the warm prime. With this, the research was not able to conclude if the temperature prime could activate specific motivations to engage in volunteer tourism. However, arguably, even more important discovery emerged, which suggested the methodological contribution of current research with the potential to further develop the theory on embodied cognition. We suggest to further investigate the impact of the temperature primes on consumer behaviour applied to volunteer tourism industry as well as to study the impact of psychological baseline on emotional state to improve data validity of experiments within psychology research field.

Keywords: Embodied Cognition, Temperature Priming, Cold Primes, Warm Primes, Volunteer Tourism, Altruistic Motives, Egoistic Motives, Psychological Baseline

Table of Contents

1.	INTRODUCTION	4
1.1	Research question.....	7
1.2	General delimitations	8
1.3	Methodological delimitations	10
1.4	Structure of the current thesis	10
2.	LITERATURE REVIEW.....	11
2.1	Introduction to embodied cognition research.....	11
2.2	Impact of ambient temperature on cognition	20
2.3	Volunteer tourism industry.....	29
2.4	Chapter conclusions.....	35
3.	METHODOLOGY	36
3.1	Philosophy of science	36
3.2	Research design	39
4.	DATA ANALYSIS	49
4.1	Method of analysis.....	49
4.2	Data analysis.....	56
4.3	PLS-SEM application.....	63
4.4	Independent Samples t-test	66
4.5	Results.....	72
4.6	Reflections on the experimental design.....	73
4.7	Chapter conclusions.....	77
5.	LIMITATIONS.....	79
6.	FINDINGS AND DISCUSSION.....	80
6.1	Reflection on the impact of psychological baseline.....	81
6.2	Chapter conclusions.....	84
7.	IMPLICATIONS	84
7.1	Managerial implications.....	84
7.2	Methodological contribution	87
7.3	Chapter conclusions.....	88
8.	SUGGESTIONS FOR FUTURE RESEARCH	88
9.	GENERAL CONCLUSION	92
10.	REFERENCE LIST.....	94
11.	APPENDICES.....	112
11.1	Appendix 1 - Questionnaire.....	112
11.2	Appendix 2 – Questionnaire outlook in Qualtrics.	120

LIST OF FIGURES

Figure 1. Research hypotheses 1, 2, 3 and 4.	8
Figure 2. Current thesis flow.	11
Figure 3. The current research model.	21
Figure 4. The general process of deduction (Bryman, 2012).	39
Figure 5. Recoded values example 1.	53
Figure 6. Recoded values example 2.	54
Figure 7. Initial (full) conceptual model.	58
Figure 8. Final (purified) conceptual model.	58

LIST OF TABLES

Table 1. Demographics of the participants' sample (outliers excluded).	41
Table 2. Raw data extracted from survey platform - Qualtrics.	55
Table 3. Recoded and cleaned data in .csv format.	56
Table 4. Constructs (variables) and items measured within the research.	57
Table 5. Results of PLS-SEM analysis.	61
Table 6. Internal Consistency, Convergent Validity and Discriminant Validity.	65
Table 7. Group statistics of means between two groups for the loneliness variable.	68
Table 8. Independent samples t-test between two groups for the loneliness variable.	68
Table 9. Group statistics of means between two groups for the altruistic and egoistic motivations variables.	69
Table 10. Independent samples t-test between two groups for the altruistic and egoistic motivations variables.	70
Table 11. Group statistics of means between two groups for the donating variables.	71
Table 12. Independent samples t-test for the donating variables.	71

1. INTRODUCTION

Embodied cognition has attracted a great deal of attention in the recent years within both academic and business fields (Wilson, 2002). Some academics stress the “importance of action for cognition and the role played by bodily states” (Borghi & Cimatti, 2010, p. 763), therefore arguing that the mind is affected by the body. In particular, Krishna and Schwarz (2014, p. 159) argue for the “role of sensory experiences in judgment and decision making” applied to marketing domain. Indeed, most consumers are becoming aware that they are frequently affected in situations of consumption. For example, stores are employing various techniques to effect consumers to buy their products with the use of various insights from the field of consumer psychology, especially through sensory marketing. For example, the signature scent of Abercrombie & Fitch which was created to make consumers remember their stores, as smell and memory are often linked (Herz, 2010; Morrin, 2010). These techniques have been applied by businessmen for centuries: for example, bakeries were making sure their freshly baked pastries could be smelled from a far distance, inviting customers to purchase them.

The topic of the present thesis lies within the field of embodied cognition, as we were intrigued by the discussed findings and wanted to conduct research that can be applied to real life and benefit businesses and the society in general.

Current companies use these tricks nowadays just as much by employing various senses in this game; smell, touch, vision, taste and sound. Interestingly, within consumer psychology, it has been found that consumer minds can be tricked by their bodies into believing they want something that they actually do not. Especially curious insights are offered by the field researching embodied cognition, which taps into the mechanisms behind this unexpected and even surprising effects. One of the world’s most famous Ted talks by Amy Cuddy (2012) discussed how power poses can make people feel more confident and even increase their testosterone levels. Her vision of the topic was to let people know that it is in fact possible to ‘fake it till you make it’ through the use of mechanisms affecting the cognition through the body. Cuddy has been criticised for her research, but she has, nevertheless, been viewed over 51 million times and thereby increased an interest in in the embodiment effect (Fiske, Cuddy & Glick, 2007; Fiske, Cuddy & Glick, 2008).

Embodied cognition is a field which encompasses many aspects behind the mechanisms linking body and mind. For example, existing research investigates the effects of temperature on human feelings and cognition. Examples of the most cited research include investigation of the processes that make

consumers perceive others as ‘more warm’ (Williams & Bargh, 2008), insights on the movements that can affect the cognition. Specifically, moving to the right (vs. to the left) can make people perceive things as higher (vs. shorter) (Eerland, Guadalupe & Zwaan, 2011); or moving up increases the self-worth, but afterwards makes people perform worse in a test (Ostinelli, Luna & Ringberg, 2014). The touch can also affect the cognition: for example, researchers have found that touch screens enhances consumers’ endowment effect by making them feel increased ownership towards the product (Florack, Kleber, Busch & Stöhr, 2014).

We argue that embodied cognition can be applied to more than just selling of regular products and benefitting the retail businesses. We are convinced that it can be utilised to help solve important societal problems, e.g. prevalent feeling of loneliness. It has been found that elevated loneliness is a huge cost for many governments. Even though it is almost impossible to estimate its real cost, research suggests that the real price lies between hundreds of million to 8 billion DKK per year in Denmark (Agger, 2019; Nissen, 2015; Sundhedsstyrelsen, 2006; Ældresagen, 2019).

In our efforts to improve the society we live in, we argue that the insights from embodied cognition can be applied to help people relieve the perceived feeling of loneliness through, for example, physically affecting them with warm temperature. This means that if a person is not able to relieve the feeling of loneliness (‘social coldness’) through affiliation (‘social warmth’) (Bargh & Shalev, 2012; IJzerman & Semin, 2009, Williams & Bargh, 2008), physical warmth can be used to counteract the detrimental impact of loneliness on a person. Such effect could be achieved even through briefly holding a warm cup of coffee (Williams & Bargh, 2012), or taking a warm bath (Bargh & Shalev, 2012) or staying in a warm room (IJzerman & Semin, 2009). Therefore, since loneliness can be alleviated through physical warmth as researched within embodied cognition, we pondered if embodied cognition can help people bring more value to the society, for example by helping preserve the nature and develop communities through volunteering during a holiday.

The exponential growth of the volunteer tourism phenomena has attracted a great deal of interest in the mass media, as more people in recent years have been choosing volunteering vacations instead of relaxation. However, this phenomenon might bring along negative consequences. As in other types of tourism industries volunteers can sometimes damage the destination rather than benefit it (Guttentag, 2009; Raymon, 2008). Most of the times there are no requirements for becoming a volunteer, which makes it easy for anyone to purchase this service. Moreover, it is becoming very accessible with numerous websites and agencies ready to help anyone who is ready to pay. This is

without a doubt a good thing for the volunteer tourism organisations, however due to the policy of zero requirements organisers have problems with volunteers which actually do more harm than good to the community and nature (Guttentag, 2009; Raymon, 2008).

We hypothesise that the reason for this adverse effect could lie within the underlying motives to volunteer. Indeed, altruistic and egoistic motives have been extensively researched within the literature on volunteer tourism (Brown, 2005; Mustonen, 2007; Paraskevaïdis & Andriotis, 2016; Teng, Wu & Liu, 2015; Shahzalal & Font, 2018; Krishna, 2011; Sin, 2009; Coghlan & Fennell, 2009; Gray & Campbell, 2007; Guttentag, 2009; Wearing & McGehee, 2013; Woosnam & Lee, 2011). Yet, the line between altruistic and egoistic motivations and personal traits is not very clear.

The existing research provides the link between the physical impact of coldness and feeling of loneliness. However, to the best of our knowledge based on the thorough literature review, there is no research within consumer psychology field until now looking into the link between the impact of loneliness on motivations to engage in volunteer tourism. Therefore, combining two links, the aim of current research is to look into the mechanism behind the impact of physical coldness on motivations to engage in volunteer tourism. Such knowledge will help to match the motivations with the expectations and skills of the volunteer tourists for the benefit of all stakeholders involved: tourists, tourist agencies, NGOs, local governments and receiving communities.

We would like to highlight the topic of loneliness and the importance of its alleviation: we argue that engagement in volunteer tourism is a method to boost happiness of lonely people who are looking for affiliation with others. At the same time higher volunteering rates improve development of the regions and communities in need of help. On the other hand, the insights on embodied cognition tell us that people who feel physically cold are more prone to engage in social activities, looking for psychological warmth as a cure to physical coldness (Hong & Sun, 2012; Kolb, Gockel & Werth, 2012). Therefore, we hypothesise in our research that people who feel physiologically cold would seek affiliation through engaging in volunteer tourism.

To summarise, our research topic was developed from an idea to make the world a better place for everyone. We argue that increasing participation in volunteer tourism could help people alleviate loneliness, help tourism industry by attracting more customers, and help the nature and societies in need of assistance.

1.1 Research question

Based on a combination of our acquaintance with the embodied cognition research field and our interest in the volunteering phenomena and motivation to help society, the tourist industry and the nature, we formed a question to address within the current thesis:

How does the ambient temperature of the environment surrounding people impact their motives to engage in volunteer tourism?

To cover all areas of this research question we created four hypotheses that cover the links between feeling cold or warm and lonely. In addition, we extended our model and included the links between increased (decreased) loneliness and egoistic (altruistic) motives to participate in volunteer tourism. The formed hypotheses state the following (Figure 1):

H1: Cold temperature increases the feeling of loneliness, leading to altruistic motives to participate in volunteer tourism.

H2: Warm temperature decreases the feeling of loneliness, leading to altruistic motives to participate in volunteer tourism.

H3: Cold temperature increases the feeling of loneliness, leading to egoistic motives to participate in volunteer tourism.

H4: Warm temperature decreases feeling of loneliness, leading to egoistic motives to participate in volunteer tourism.

To note, we were not able to find any existing research that would form the theoretical ground for the link between the feeling of decreased loneliness and egoistic motives to volunteer in H4. Moreover, we would naturally not expect such an effect to occur based on our literature review, yet we formed H4 for the sake of consistency within our research.

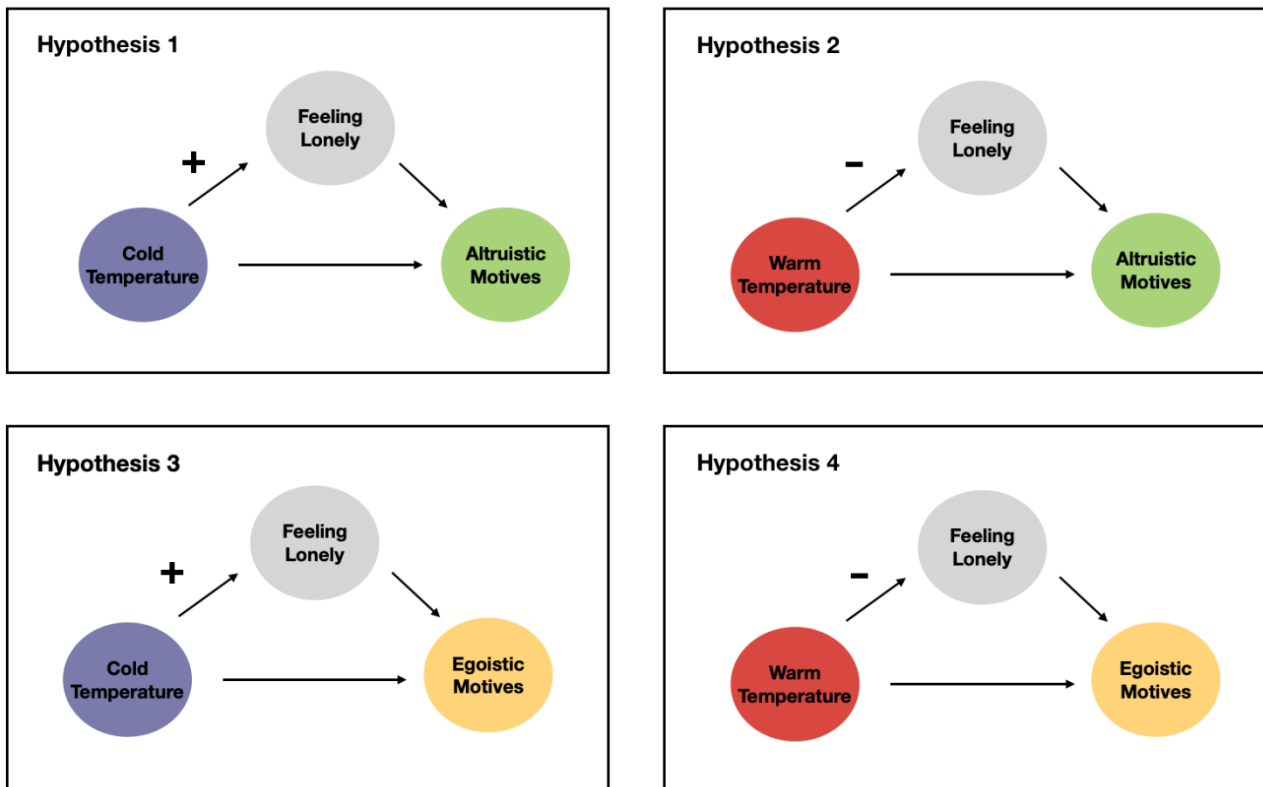


Figure 1. Research hypotheses 1, 2, 3 and 4.

To validate these hypotheses, a deductive approach to the research has been taken. We conducted a laboratory experiment which included priming the participants with the cup of cold (warm) water to induce the feeling of increased (decreased) loneliness with subsequent administering of the questionnaire to measure the effect of the prime on intentions and behaviour of the participants. The results were further analysed using quantitative methods for data analysis. Finally, we present our findings along with the discussion on limitations and suggestions for further research.

1.2 General delimitations

The following section provides an overview of the delimitations that we set as boundaries for the scope of our research, including the reasons for our choices. To ensure high quality results, the set delimitations include both theoretical and practical boundaries.

When discussing the overview of the field of embodied cognition only the most relevant examples are provided. Most examples and cases presented are related to the effect of temperature on cognition, especially the link between the temperature and social coldness and warmth. This thesis is therefore constraint from other areas of embodied cognition and sensory marketing such as smell, sight,

hearing, and taste as these do not relate to the chosen scope. Moreover, we did not consider the impact of other surrounding factors on the cognition such as the impact of light, pressure, or movement.

In this thesis the focus is on altruistic vs. egoistic motives within the industry of volunteer tourism. Therefore, the phenomenon of volunteer tourism in general is not a major part of the thesis, and is thus only described to provide the most necessary information to understand the context. Likewise, the motives behind volunteering are only elaborated in terms of volunteer tourism, not volunteering in general. Therefore, the industry chosen is volunteer tourism. The information and research on volunteering in general is not discussed, as it would be irrelevant and would not provide any enlightening information on the topic within chosen scope.

The altruistic and egoistic motives were chosen as they are opposing and can therefore provide interesting information about participants' motives and reasons for volunteering during a holiday. We found these synonyms used in literature more often than others, and for that reason we decided on these synonyms as opposed to other less frequently used synonyms. To note, the term 'altruistic' within current research includes the meaning of used in previous research terms, such as pro-social, other-oriented, other-directed, socially-oriented, other-related, self-enhanced and selfless; while the term 'egoistic' includes such terms as selfish, self-oriented, self-enhanced, self-related (Rai, Lin & Yang, 2017; Lee, Rotman, Perkins, 2014; Krishna, 2011).

Personalities such as being altruistic or egoistic are outside of our scope to study only the motives that drive people and not their personality traits. Consequently, we do not qualify our respondents as being neither altruistic nor egoistic at any point. Instead, we qualify the motivations which participants related to as being altruistic or egoistic. It could also have been interesting to analyse the core personality of the volunteers, but for this thesis it would create a side-track which would pull the key message on temperature and embodied cognition away.

In this thesis only the consumers' perspectives on volunteer tourism motivations are taken into consideration. This research investigates the underlying mechanism behind physical impact of coldness that primes consumers and changes their feelings, intentions and behaviour. The perspective of companies, NGOs and governments is only considered in this thesis to provide managerial implications of this research.

1.3 Methodological delimitations

To simplify our model, we decided to prime participants with only one condition - cold or warm temperature of the cup. In real life, the particular effects of the environment cannot be isolated with certainty, meaning that more than one factor could affect people when they are making decisions. Since it can be very difficult to create an experiment in social science taking all potentially impacting factors into consideration – confounders such as time of day or time of year, temperature difference in the different parts of the lab, comfort of chairs in the lab, we cannot clearly state which factors contributed to a certain behaviour. Therefore, we attempted to control as many factors as possible during the experiment.

While deciding which type of temperature prime was to be used in our research on effects of embodied cognition, we decided to use the experiment idea from the research of Williams and Bargh (2008), where they used paper cups to be held in a hand. They argued that briefly holding a cup of hot or iced coffee is enough to create an embodied effect, and we therefore decided to use this type of prime, thus excluding other types of temperature primes which could potentially have yielded different results. Alternatively, we could have decided to prime participants with the ambient room temperature of the lab or conduct the experiment outdoors vs. indoors (Van Acker, Kerselaers, Pantophlet & IJzerman, 2016).

Another delimitation to our research is our sample and its size (initially 82 participants, after excluding the outliers 75 participants) comprised predominantly of Danish CBS students. The decision to work with such a sample came from the restraints on time and financial resources for this project, thus challenging the generalisability of our data analysis results. Additionally, since the sample is mostly Danish (or Scandinavian) people, a Scandinavian's perception of a cold cup could be different from a person from more Southern regions. Therefore, this again limits the generalisability of our results. The study was carried out in Denmark in March, a cold month, which delimits other regions of the world as well as seasonal considerations. Results might have been different if the study had been carried out in warmer seasons and/or regions of the world.

1.4 Structure of the current thesis

The structure of this thesis consists of a commonly known structure which takes its grounds from the formal oration in Greek rhetoric, where only two steps have changed order since it is a written thesis and not an oral one (Czarniawska, 2014). The structure goes as follows: Problem area, Literature

review, Hypothesis, Results, Discussion and Conclusion (Figure 2). We start the thesis by introducing the topics of embodied cognition and volunteer tourism in the literature review, which give the grounds for formation of hypothesis on how temperature can affect the motives to participate in volunteer tourism (altruistic vs. egoistic motives). The data analysis and results are subsequently presented, leading to a discussion on the findings including managerial and methodological implications, and lastly future research suggestions and a general conclusion.

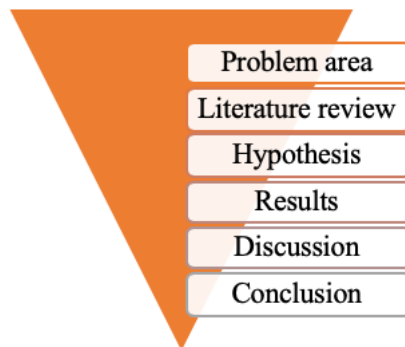


Figure 2. Current thesis flow.

2. LITERATURE REVIEW

The following chapter provides the reflection upon the state-of-the-art research on the areas concerning this thesis. The main purpose of this section is to unfold the research field of embodied cognition including the discussion of the literature stream on temperature with a focus on effects of cold vs. warm temperatures on consumer behaviour. Further, we present the bidirectional links between cold temperature and loneliness, as well as between warm temperature and affiliation. Next, we proceed to the overview of the volunteer tourism - the industry we selected for application of the embodied cognition theory. We finalise the chapter presenting our conceptual model along with the research question and hypotheses.

2.1 Introduction to embodied cognition research

The key topic of the current thesis lies within the domain of interdisciplinary concept of embodied cognition, which links social and cognitive psychology with human behaviour including the behaviour of consumers (Borghetti & Cimatti, 2010). The main idea of embodied cognition therefore postulates that the sensory input serves as the bodily feelings-as-information which impacts the physiological and psychological states and even volition (e.g., Barsalou 2008; Lakoff & Johnson

1980; Hung & Labroo, 2011; Krishna, 2012; Lee & Schwarz, 2010). Accordingly, bodily feelings-as-information states can arise in the form of emotions and moods, sensations and metacognitive experiences (Schwarz, 2012). Moreover, experiments show that respondents use the information derived from the bodily states just as they would use other, more objective sources of information, e.g. vision or hearing (Herbert & Pollatos, 2012; Schwarz & Clore, 2007).

Wilson (2002) suggests that the behaviour which helped the survival of the individuals influenced the formation of our cognitive mechanisms along with the evolution. She poses that the most interesting question at this point, though, is not why this link has formed, but how exactly cognitive mechanisms impact the actions of individuals.

The state-of-the-art assumption for the embodied cognition field postulates that “higher level processing is grounded in the organism’s lower level sensory and motor experiences” (Shalev, 2018, p. 1). This definition means that the cognition is not working separately from the body’s sensorial experiences nor physiological processes; on the contrary, these processes co-depend and co-influence each other. Indeed, Barsalou (2008, p. 619) contends that cognition is often “grounded in multiple ways, including simulations, situated actions, and, on occasion, bodily states”, which opens up a plethora of research ideas regarding the particular effects of the body on the mind and vice versa.

Within the field of grounded (or embodied) cognition, the scientists focus on the function of the body within the cognitive processes basing the research on the growing evidence that bodily states interfere with cognitive states and could even trigger them (Barsalou, Niedenthal, Barbey, & Ruppert 2003; Lakoff & Johnson, 1980; Smith, 2005).

Currently, the models of cognition pose that abstract metaphorical concepts are grounded in (and are thus affected by) physical bodily experiences imposed by the environment (Barsalou, 2008; Lakoff & Johnson, 1980; Williams, Huang & Bargh, 2009; Wilson, 2002). This means that the physiological changes within the body tap into the relevant concepts stored in memory of individuals and implicitly adjust their feelings, judgements and perceptions (Williams et al., 2009). As discussed in further sections, Williams and Bargh (2008) have found that the sensory input of warmth pulls in the concept of interpersonal warmth, specifically love and affection. It has been further suggested that the common storage of these concepts in memory provides for such an effect, linking them through metaphors (Niedenthal, Barsalou, Winkielman, Krauth-Gruber & Ric, 2005). It is worth noting that

the connection between the physiological and psychological warmth is one of the strongest within the embodied cognition domain (Bargh & Shalev, 2012; Williams & Bargh, 2008).

The theory of embodied cognition combines two postulates. First, cognition rests upon the type of the sensory information that the body gathers while interacting with the environment. We assume this happens accounting for the capacities of the body and affordances of the environment. Second, the capacities, and thus sensations, of the body might depend not only on physiological but also psychological and even cultural constraints (Varela, Thompson & Rosch, 1997).

Indeed, some authors argue that the motor system of the body impacts the mind just as much as the mind impacts the activity of the body. For example, Pecher and Zwaan (2005) describe the effects of the facial muscular activity on the cognition: the participants of their experiment were recognising more pleasant information while holding the pencil in the mouth, mimicking a smile and engaging the same 'smile' muscles. The reverse effect occurred when they were holding a pencil between the top lip and the nose, engaging the muscles of a frown.

Another curious phenomenon has recently occurred: it is becoming more and more common among consumers to receive facial treatment utilising Botox as part of an antiaging facial procedure. Such treatment includes Botox injections (precisely neurotoxic protein) which interferes with muscle activity and is thus claimed to diminish visible appearance of wrinkles. The curious side effect that has been observed post-treatment revealed that with the impairment of specific muscles responsible for visible wrinkles, the patients partially lost the ability to process and understand emotional words and emotional expressions of other people, thus decreasing the empathy (Krishna & Schwarz, 2014).

Indeed, the latest experimental data shows that noticing and understanding emotional expressions of others, or even mere understanding of words charged with emotions of different valence, triggers the movements of the same muscles that are involved in expression of own emotions (Krishna & Schwarz, 2014). Such an effect speaks for a tight connection and interdependence between cognitive processes and physical activities of the body.

Zhong and Leonardelli (2008) have found in their experiment that the participants who experienced social exclusion desired warm food and drinks compared to those who experienced inclusion. These findings support the theory of embodied cognition and puts forward that "social perception involves physical and perceptual content" (Zhong & Leonardelli, 2008, p. 838).

Krishna and Schwarz (2014, p. 161) suggest that “what psychologist traditionally referred to as “higher mental processes” is grounded in bodily experience”, stressing the importance of the function that the body plays in the cognitive processes.

It is suggested that the more the role of the body in such psychological activities is researched, the more confirmations could be uncovered behind known psychological processes and impact of embodiment (Krishna & Schwarz, 2014). The mere exposure effect discovered by Zajonc (1968) – a positive correlation between the number of exposures and liking of an object – is one of the examples of the described impact of the body (visual perception) on the mental activity (liking). This effect is described to occur due to the pleasant feeling arising with the increase in processing ease (and speed).

Insights from embodied cognition research

As discussed above, embodied concepts are shaped by the physiological sensorimotor experiences of the body (Halali, Meiran & Shalev, 2017). Or as suggested by Sullivan (2018): the mind (precisely the mental process) is affected by the actions of the body and events of the physical reality on it.

As research on embodied cognition is growing, several postulates have been identified, describing the concept and the direction for its future development:

1. Cognitive processes are situated, happening in the context of a real-world environment, affected by incoming perceptual information and triggering appropriate motor response – “task-relevant inputs and outputs” Wilson (2002, p. 626). An example would be a complex activity of driving a car while talking to a passenger on the back seat and listening to the radio. Given this definition, non-situated cognition would be the cognitive process that is happening without any relevant ‘pressuring’ environmental trigger, that is without “task-relevant input and output”, e.g. abstract thinking, contemplating, recalling (Wilson, 2002, p. 626).
2. Cognition is time pressured. This postulate refers to the fact that the interaction with the environment happens in a certain time frame whereby the cognitive response is ‘designed’ to properly respond to the changes. Example of such postulate, according to Wilson (2002), would be playing with another person or a pet: such an activity at its core is demanding fast adaptation to the ever-changing environment and making fast decisions in response to such changes. This process is naturally creating a processing bottleneck, which is dealt with using heuristic mechanisms of human cognitive processing (Asch, 1946; Fiske et al., 2007), which

are deemed irrelevant for the current discussion, as they stray aside in the evolutionary psychology.

3. Humans off-load cognitive work onto the environment. Since the cognitive abilities are limited, specifically attention and working memory (Wilson, 2002), there is a reasonable need to use the external environment for facilitation of such processes. An example could be counting using pen and paper or one's fingers, drawing Venn diagrams or using the tokens on the map to indicate a location (Wilson, 2002).
4. The environment is part of the cognitive system. Wilson (2002) claims that since the cognitive activity is happening within a certain environment where the information flows freely between the surrounding world and the mind, there is not much sense in studying the mind, thus cognitive activity, isolated from this world around. To us this claim is connected to claims 1 and 2 discussed earlier: if indeed cognition is situated and pressured by time, a researcher must scrutinise the cognition considering both "situation and the situated cognizer together as a single, unified system" Wilson (2002, p. 630).
5. Cognition is for action. According to Wilson (2002), some scientists share the opinion on the function of the mind to elicit certain relevant behavioural response or reaction to environmental change. For example, the theory of affordances (Gibson, 1977) suggests that visual information received through the eyes triggers an automated motor response in muscles, meaning that the objects 'afford' certain manipulations: a cup handle primes a grasping movement. However, as pointed out by Milner and Goodale (2008), there are two streams of visual processing in the brain, dorsal and ventral paths, serving to answer 'where/how' and 'what' respectively, meaning that apart from serving the guiding function (motion processing through the dorsal path), there is an identifying function as well (form and colour processing of ventral path). Milner and Goodale (2008) conclude that there is 'vision for action' and 'vision for perception'. This alone suggests that cognition is not exclusively dedicated to 'guiding the action' through the direct link to motor system. Moreover, one of the key researchers within the field of cognitive psychology, Barsalou, argues that bodily states are not imperative for cognitive activity, although could be related to it (Barsalou, 2008). Therefore, we contend that cognitive activity is seen to act separately from the body yet being tightly connected to it.

6. Offline cognition is body based. It has been argued (Wilson, 2002) that even though the cognition might not be fully dedicated to processing the interactive information flows between the mind and environment, it has yet evolved to prioritise this task whenever relevant. This means that cognition is grounded in sensory input processing and motor control. Wilson (2002) argues that even abstract 'offline' cognitive processes, e.g. mental imagery including auditory imagery (Reisberg, 1992), kinesthetic imagery (Parsons et al., 1995) and working memory, may be "rooted [...] in sensory and motoric knowledge" (Wilson, 2002, p. 634).

The connection between abstract concepts and sensorial experiences are said to be reflected in common metaphors (Landau, Meier, & Keefer, 2010). Therefore, this branch of embodied cognition field predominantly researches how sensorial experiences of individuals, e.g. temperature, are impacting the cognitive processes with emotional and behavioural outcomes being connected through commonly understood metaphors (Krishna & Schwarz, 2014).

Some researchers (Barsalou, 1999; Percy, Hoffmann & Sherman, 2011), have found that the correlation between the ambient temperature and behaviour are grounded in language, specifically commonly used linguistic structures, which are aligned with the conceptual metaphor perspective within the embodied cognition field (Meier, Scholer & Fincher-Kiefer, 2014). This in turn suggests that "mental representations are activated by associated physical and semantic concepts" (Halali et al., 2017, p. 344). When someone states that a person is 'giving them a cold shoulder', this does not mean that they literally have a cold shoulder. Instead, this means that they are avoiding them. The same meaning is conveyed through the idiom 'putting a person on ice'. Williams and Bargh (2008) found that people perceive other individuals to be 'socially warm' personalities when they were given a warm cup by that individual whereas they considered other people to be 'socially cold' when they were given a cold cup. Zhong and Leonardelli (2008) also found that people who feel socially excluded thought that the ambient room temperature was lower. On top, Lee et al., (2014) found a similar effect: the room temperature was experienced as cooler when eating alone vs. eating with others. These examples show how mental representations are activated through associated physical concepts. The link is proven to be bidirectional in nature: "in that physiological experiences affect social affiliation as much as social experiences affect physiological reactions" (Lee et al., 2014, p. 234).

The discussion above leads to the conclusion that embodied cognition is a complex umbrella term comprising the research on primarily sensorial experiences, mental simulations and linguistics. The

latter stream of research is particularly interesting for the current discussion, as the present thesis falls under the stream of research on metaphorical associations and taps into the impact of commonly shared metaphors related to temperature in both physiological and psychological senses.

Connection between physiological and psychological effects

Relative to the current thesis there are two branches of the research about the connection of physiological and psychological sensations.

According to Zhang and Risen (2014), the first branch researches the cumulative impact of one on the other, which is the increase in perception of one state through experiencing the other; this is the assimilative effect that matches the underlying metaphor with the sensation. For example, as stated above, experiencing social coldness (isolation or rejection) increases the perception of physical coldness, thus lower ambient temperature (IJzerman et al., 2012; Zhong & Leonardelli, 2008). On contrary, experiencing social connection and inclusion increases the perception of physical warmth (Hahn, Whitehead, Albrecht, Lefevre & Perrett, 2012; Inagaki & Eisenberger, 2013).

The second branch investigates complementary (or compensatory) effects, demonstrating that experiencing a certain physiological state leads to the desire of its alteration through the psychological mechanisms. For example, it has been found that a physically cold state makes people seek for the psychological warmth (Hong & Sun, 2012; Kolb et al., 2012), while striving for physical warmth when experiencing psychological coldness (rejection or isolation), as discussed (Bargh & Shalev, 2012; Bargh & Shalev, 2014; Zhong & Leonardelli, 2008). Moreover, this effect is proven to be bidirectional (Bargh & Shalev, 2012).

The warmth is furthermore seen to serve as a buffer for any type of coldness, either physiological or psychological one (Zhang & Risen, 2014).

Self-regulation within embodied cognition

According to Lee et al. (2014) a self-regulative mechanism includes the adjustment of the behaviour that strives to restore physiological or psychological balance. An example of such behaviour can be observed when individuals, who were primed with the notion of unethical behaviour or violation of moral rules, suddenly feel the need to wash their hands (Zhong & Liljenquist, 2006). In such a case, washing hands serves as a physiological cure to a psychological pressure.

Lee et al. (2014) argue that the behaviour of lifting one's negative physiological state through employing psychological mechanisms and vice versa, for example when in a situation of physiological coldness striving for psychological warmth, is self-regulatory in nature. Moreover, consumption can satisfy the need to adjust such a state. Specifically, the deviation from the normal temperature, which the body considers as homeostasis, motivates an individual to restore the bodily balance through subliminal mechanisms (Lee et al., 2014). Advertising agencies can find inspiration using this mechanism since consumption can be a way for humans to self-regulate. An example could be the link between the above discussed metaphor of 'dirty hands' (meaning 'unethical behaviour') and disinfecting products which can be used for social campaigns or the cleaning businesses.

An alternative point of view is represented by such scientists as Balci et al. (2010) and Bhalla and Proffitt (1999), who pose that physiological experiences gathered through senses have an impact on the psychological mechanisms within an individual, directing the behaviour towards the adjustment of possible negative experiences distorting the balance.

The argument proceeds as follows: if human bodies have an internal regulatory mechanism for the physiological balance maintenance and restoration, then "metaphorical embodied manipulation of temperatures" are expected to act in the same manner (Lee et al., 2014, p. 235). Importantly, it has been established that metaphorical adjustment occurs in cases when the objects or actions used to restore that balance share attributes with the source of deviation (Lee et al., 2014). Specifically, Lee et al. (2014) argue that individuals are guided by affiliative motives when feeling physically cold. At the same time, the motives of social isolation come into force while individuals are feeling too warm (to self-regulate and 'decrease' the unhealthily high temperature). They further suggest that metaphorical social warmth can be acquired through consumption in social setting, for example eating with someone in a café, or through interpersonal attributes of some products, e.g. interactive products like dolls or human-like robots or social media. Therefore, consumers could even out a negative state of feeling cold through such consumption-related mechanisms (Lee et al., 2014). This is especially important for the current thesis, as our conceptual model extends the findings on the embodied cognition to the field of volunteer tourism, thus holiday consumption in a group of people. We later discuss our hypotheses on the possible effects of temperature on this consumptive behaviour.

Bargh and Shalev (2012) provided another example of a self-regulation mechanism. Specifically, they have shown that the participants of their study indicated the absence of awareness of the reason why they would be prone to take warm baths. This suggests that this kind of strategy is implicit and

happens unconsciously for the individuals in need of a self-regulation mechanism to counteract loneliness. This opens a possibility to use such techniques in business or advertising, where direct physical impact on consumers can not create the desired effects, e.g. social marketing.

Evidence from evolutionary psychology

Some scientists argue that due to specifics of evolutionary development of the human race, the situated cognition is a base for the cognition in general, as it is considered that our ancestors relied heavily on the situated skills to survive. Like the skill of fighting predators or finding the appropriate food in the wild. Consequently, it is offered that the whole brain structure has developed to accommodate primarily for motor and perceptual mechanisms. Thus, the argument proceeds, the situated cognition laid the base for the higher cognitive apparatus (starting from the 'fight-or-flight' mechanism) being rooted in sensorimotor experiences (for the review of the topic see Wilson, 2012).

The extant research in the field suggests that on individual level the connection of prosocial behaviour and physical warmth traces back to an individual's early years of life in childhood (Ijzerman, Karremans, Thomsen & Schubert, 2013). Panksepp (1998) contends that from the early age during the interaction of the baby with the caregiver, physical warmth signals safety, care and connection, while physical coldness means lack of the above, thus a thread for life.

Indeed, it has been found that the link between the cold temperature and weaker social bonds has been established to exist since the very early age. Ijzerman et al. (2013) have found that a child (approx. five years old) would be more willing to share the stickers with a peer in a warm ambient environment if their attachment style is secure, and according to Bowlby (1969) this is the case when a caregiver was consistently responding promptly and appropriately to satisfy the needs of the child during infancy. They found that such children react more altruistically, generously and communally towards the other children if put in a warm room (Ijzerman et al., 2013).

Another study which shows that the bond between the temperature and attachment occurs in the earliest stages of infancy was conducted by Harlow (1958) on baby monkeys. With the experiment it has been shown that among two 'surrogate' mothers, infant monkeys preferred the warm and soft mother to the cold, wired one. Moreover, the monkeys that were assigned to a cold wired surrogate mother were later noticed to experience difficulties with their social interactions (Harlow, 1958).

Williams et al., (2009) argue that cognition is grounded in the simple concepts like shapes, temperature, and sizes describing the surrounding physical world, whereby such process takes place in early childhood and comes from a direct experience with the world. Later in life, more complex and abstract concepts are formed based on these simple concepts (e.g. ‘temperature of the relationship’), which means that abstract concepts are indirectly linked to the experiences of the physical world through the simple concepts (Hong & Sun, 2012).

Intermediate conclusions and current research relevance

Some scientists (Williams et al., 2009; Meier, Schnall, Schwarz & Bargh, 2012) argue for the mechanism behind the theory of embodied cognition (which postulates the connection between the experiential learnings coming from the surroundings and the social concepts expressed as metaphors), where the embodied cues communicate between lower and higher level cues which eventually triggers the action. Nonetheless, the factors impacting such communication are not thoroughly researched yet. This research gap is important to be closed as different effects of the impact of embodied cognition have been observed: in the case of ambient temperature effects on the physiological and psychological states, in some cases the effect is compensatory, e.g. physiological coldness triggers the need to compensate such negative state through social warmth and affiliation (Zhong & Leonardelli, 2008; Bargh & Shalev, 2012; Bargh & Shalev, 2014; Zhang & Risen, 2014); in other cases, the effect is assimilative, e.g. social warmth is reinforced through physiological warmth (Williams & Bargh, 2008). Therefore, further clarification on the mechanism is needed to predict the direction and the outcome of the temperature effect with higher accuracy.

2.2 Impact of ambient temperature on cognition

In the following section we present the existing research on temperature with a deep dive into cold and warm temperature effects on individuals’ cognition. Further, this section focuses on the link between cold temperature and its impact on perception of loneliness to establish grounds for the first link in H1 and H3, while the link between the warm temperature and decreased loneliness is discussed later to establish grounds for the first link in H2 and H4.

The research model of this thesis states that cold temperature primes participants to feel lonely, making them engage in volunteer tourism either with altruistic or egoistic motive to alleviate loneliness (as discussed later). With present research we aim to close the apparent research gap between the feeling of loneliness and motivation to volunteer (Figure 3).

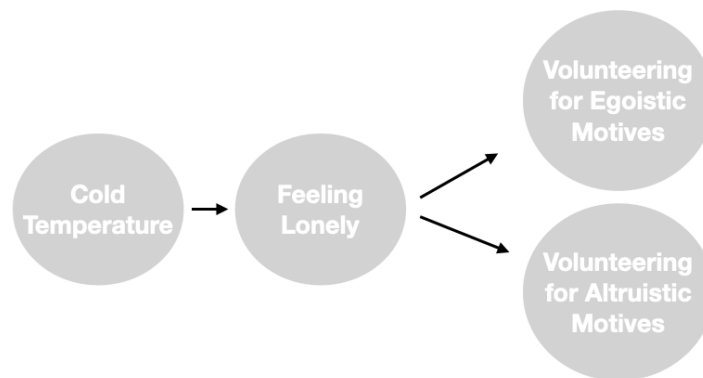


Figure 3. *The current research model.*

Whereas there are different types of sensory input that the body is dealing with, the field of embodied cognition has been consistently scrutinising specifically the impact of the ambient temperature on human relationships (Lee et al., 2014). Steinmetz and Posten (2017) argue that the temperature of the environment has an overarching impact on what people think and what they ultimately do.

As discussed in the section above, the latest findings suggest that there is a metaphorical link between the physiological and psychological states that is employed depending on the goals of the entire organism, whereas the brain (or the mind) performs the role of the ‘decision-maker’. Moreover, these effects are observed not only within the psychology field but also extended to consumptive behaviours in the form of ‘self-regulatory mechanisms’ (Lee et al., 2014). It has for example been found that while induced to feeling lonely, individuals strive to alter this state with the help of hot baths and showers (Bargh & Shalev, 2012) or warm food or drinks (Zhong & Leonardelli, 2008). In other words, the ‘cure’ for psychological coldness (loneliness) can be found in physiological activities (warming up).

Such links between physiological and psychological warmth are not coincidental. Extant research on neurophysiology provides an explanation of such an effect from the biological point of view. The neuro insights show (Kang, Williams, Clark, Gray & Bargh, 2011) that the processing of the emotional coldness such as alienation, abandonment, exclusion or ignoring happens in the same region of the brain as processing the physical sensation of coldness by the body – both processes occur within left anterior insula – i.e. the region responsible for body homeostasis (self-regulation of physical changes) and emotions (self-regulation of emotional fluctuations). Thus, neurophysiological structure of the brain accommodates for processing of trust (Todorov, Baron & Oosterhof, 2008),

psychological warmth (Inagaki & Eisenberger, 2013), empathy and other emotions related to social experiences, like guilt or embarrassment (Kross, Egner, Ochsner, Hirsch & Downey, 2007; Eisenberger, Lieberman & Williams, 2003).

Impact of coldness on cognition

It would not be surprising for a layman to hear that warmth is generally associated with something positive, while coldness on the opposite connotes with something negative. To note, we do not consider neither cultural nor individual subjective differences in opinions on that matter within current research.

However, even a ‘negative’ side of coldness can be used for the better if applied in a relevant situation. For example, experiencing a cold sensation improves the cognitive control in situations where the mind has a task to resist the temptation to engage in an undesirable behaviour (Halali et al., 2017). Yet, the authors suggest to further investigate the connection between these concepts in future research. Further findings show that this also works in the context of simulation (or immersion in) the cold environment (for example looking at and imagining something cold), where the cognitive control rate improves just as well. This suggests that the effect of the cold temperature on the cognitive control is so strong that merely mental simulation is enough to produce a significant change in the behaviour (Halali et al., 2017). It is worth noting that this experiment was conducted in the lab in a simulated exercise, and we can therefore not be sure if the effect would occur in real-life situations. In case the effect holds for real-life, an example aligned with this thesis would be that people who volunteer in cold areas would be stronger mentally to follow the rules and restrictions of the volunteer destinations.

However, the connection between the sensory experience of the temperature and interpersonal relationships might also depend on the context of the interaction. To note, this issue has not been addressed in any of the above-mentioned research papers. Wei, Ma and Wang (2015) demonstrated that physical warmth brings in the perception of psychological warmth to situations with positive context (e.g. receiving a good service from a service employee), while physical coldness brings in the perception of psychological warmth under conditions of a negative context (e.g. an argument with a service employee).

It has also been shown that ambient temperature affects cognitive capacity, and specifically cold temperature has been found to decrease heuristic information processing and affect the conduct of a task involving complex decision making (Cheema & Patrick, 2012).

It has been shown that experiencing loneliness (e.g. in the form of social exclusion) – social coldness – triggers the perception of physical coldness (i.e. lower ambient temperature), thus leading to a desire to alter the unpleasant state and reach out for a warm treatment (IJzerman & Semin, 2010; Zhong & Leonardelli, 2008). Indeed, Hong and Sun (2012) have found that the sensation of coldness triggers the subconscious motivation to seek psychological warmth, thus leading to an increase in preference for romantic movies which metaphorically represents a socially warm experience.

The words loneliness and coldness seem to be very much connected in a daily life (Zhong & Leonardelli, 2008). The conceptual metaphors are created on the base of repeated experiences that entail both physiological and psychological effects of the same direction. For example, the idiom ‘leave someone out in the cold’ means to purposefully ignore a person or exclude them from an activity. Which implies that ‘being left in cold’ equals to be deprived of social contact. Therefore, it seems logical that someone left out of the group or activity feels excluded, isolated, or lonely. Therefore, the concept of coldness is linked to the concept of isolation or loneliness through the semantic connection in the mind.

If cognitive activity includes simulated (i.e. imagined) sensations, for example an experience of cold temperature through imagery, the subsequent experience of social exclusion induces the actual perception of the ambient temperature as lower, since both experiences are connected (Zhong & Leonardelli, 2008). Such an effect seems logical to us, as there are well known evolutionary mechanisms that explain this conceptual connection. For example, penguins keep closer to each other to stay warm, as being together literally helps to combine the bodily heat of all animals and effectively keep the warmth, otherwise leading to death. Thus, being excluded from the group literally feels colder, as it decreases the combined bodily heat.

Zhong and Leonardelli (2008) offer their possible explanation for the metaphor behind cold temperature as a conceptualisation of social isolation: the cold weather (i.e. decreased outdoors temperature) leads to natural temporary decrease in social communication and fewer contacts in general. Therefore, the experience of social distance (e.g. feeling of loneliness) is connected to the lower temperature in the surrounding environment. This further stretches to the assumption that

physical warmth is associated with social proximity (closeness), while physical coldness is linked to social distance (Zhong & Leonardelli, 2008). Fay and Maner (2012, p. 974) have shown that “participants sitting on a heating pad showed a stronger affiliative motivation than those who sat on chairs without a heating pad”. Dipankar, Lin and Yang (2017) have found that priming individuals with the experience of coldness (specifically observing a picture with people who are feeling cold and later describing the situation when participants were feeling cold themselves) increases the need for socialising and establishing a connection, which in turn increases the willingness to donate to a charity. Therefore, it is concluded that people are more willing to donate money (i.e. behave altruistically) after being primed with the cold temperature, which is an important conclusion for our current research model, as it establishes the grounds for H1, connecting the feeling of loneliness with altruistic behaviour.

Impact of warmth on cognition

Halali et al. (2017) argue that generally a warm environment brings in a calm and relaxed attitude, whereas coldness triggers “alertness and an associated possibility to need recruiting cognitive control” (Halali et al., 2017, p. 351). This indicates that warmth brings in serenity, while coldness prompts vigilance. Therefore, we have the grounds to expect the warmth to provide altruistic and relaxed behaviour (H2), while coldness to trigger egoistic and self-protective behaviour (H3).

It is argued that the experience of the physiological warmth around people leads to more positive evaluation of those people perceiving them as ‘warm personalities’, worth to stay close to. For example, Lakoff and Johnson (1999) suggest that the connection between the physiological and psychological perception of warm temperatures, and thereby metaphors, reflects such a link between them, e.g. ‘warmth is affection’.

Some scientists (IJzerman et al., 2015; Williams et al., 2009) suggest that that the link between the sensation of physical warmth and metaphorical warmth (as affection or affiliation) is acquired by individuals with experience coming from the proximity to significant others or caregivers and general pleasantness resulting from these close relationships and interactions (Fay & Maner, 2018). Therefore, physiological warmth may be seen to encourage prosocial and affiliative behaviour.

The theory that physical warmth is an indicator of social proximity is confirmed by neurobiological studies on experiences of higher ambient temperature and affiliation (Inagaki & Eisenberger, 2013; Inagaki, Irwin & Eisenberger, 2015; Kang et al., 2011; Panksepp, Nelson & Bekkedal, 1997).

Impact of perceived loneliness on behaviour

Within the current research model, the mental state of loneliness is considered to have great impact on consumer behaviour. Previous research has shown that indeed individuals tend to subconsciously adjust their behaviour or purchasing choices depending on the perceived ambient temperature of the environment they are surrounded by, which depends on subconscious feeling of loneliness, social distance, isolation or social exclusion. The discussion of respective mentioned effects follows below.

The terms ‘lonely’ and ‘loneliness’ have been conceptualised in various ways. As a general observation, we note that most research papers on loneliness within consumer psychology do not provide their own clear definition of what loneliness consists of, which shows us that the phenomenon of feeling lonely is so commonly understood that many researchers do not consider it crucial to explain it in depth. We consider it important to keep the full original definitions in this thesis to uncover the wholesome meaning conveyed by the authors.

In this thesis we chose the conceptualisation provided by Russell, Cutrona, Rose and Yuro (1984) in their research:

“First, loneliness is an aversive experience similar to other negative affective states such as depression or anxiety. Second, research has shown that loneliness is distinct from social isolation and reflects an individual’s subjective perception of deficiencies in his or her network of social relationships. These deficiencies may be quantitative (e.g. not enough friends) or they may be qualitative (e.g. lack of intimacy with others).”

- *Russell et al., 1984, p. 1313.*

Moreover, the term loneliness can be conceptualised as “a complex set of feelings that occur when intimate and social needs are not adequately met and that ‘drives’ individuals to seek the fulfilment of these needs” (Russell, Peplau & Cutrona, 1980; Weiss, 1973, p. 15). Both definitions focus on the negative impact of loneliness which occurs due to the lack of presumably important need for social connections, which is a common understanding of the term among laymen. Below we discuss the fundamental nature and importance of this need for human beings.

This complex set of feelings consists of unpleasant negative emotions which is a cognitive response to the experience of exclusion and isolation. Curiously, the research suggests that the solitude can be compared with the state of being lonely, however it is experienced in a completely different way.

Thus, in our thesis we consider being lonely to entail a set of subjective negative feelings and experiences (ultimately leading to ‘personal decline’), while solitude is seen as a ‘personal choice’, the state of contemplation and therefore understood as a set of positive subjective feelings and experiences (leading to ‘personal growth’).

A clear majority of individuals have felt lonely at some point in their lives, some for a short period and others for longer periods of time. The majority naturally reaffiliates due to the evolutionary psychology balance system in our bodies and never experience any chronic pain or harm (Cacioppo, Grippo, London, Goossens & Cacioppo, 2015).

Specifically, there are three main perspectives on the feeling of loneliness:

1. Weiss (1973) conceptualises loneliness as a default in social relations that hinders human functions like attachment and social integration to work properly.
2. Marangoni and Ickes (1989) shift the focus of their definition on the default in social skills that then disrupts social relations.
3. Peplau and Perlman (1982) define loneliness as humans’ own subjective perception of this default in their social relations.

Since the current research focuses on virtue behaviour such as volunteering and altruism, we believe it is relevant to discuss the ethical side of human behaviour relative to the experience of social distance. Specifically, there is contradicting literature in the field of ethical vs. unethical behaviour of individuals who experience loneliness. Some literature states that loneliness is closely associated with unethical behaviour, e.g. smoking, drinking alcohol, consuming drugs or developing an internet addiction (Cacioppo & Patrick, 2008; Canham, Mauro & Kaufmann, 2015; Huang et al. 2014; Özdemir, Kuzucu & Ak, 2014). Such behaviour is regarded to serve as a coping mechanism for managing negative feelings like loneliness and isolation and is directed to imitate a feeling of friendship and closeness in people. It can be argued that such types of behaviour fall under the definition of egoistic behaviour and thus provide us with further reasons to expect the effect described in H3.

On the other hand, some research (DeWall, Maner & Rouby, 2009; Lee & Shrum, 2012; Maner, DeWall, Baumeister & Schaller, 2007; Mead, Baumeister, Stillman, Rawn & Vohs, 2011) suggests that pro-social behaviour might occur in an attempt to compensate for the negative feelings and to

allow to reconnect socially, giving the grounds for our H1. For example, as discussed earlier, subsequent to feeling excluded participants are willing to donate more money to charity and are more willing to help others (Lee & Shrum, 2012; Lee Shrum & Yi, 2016). They also experience an increase in their desire to cooperate and work with others (Maner et al., 2007). Here we would like to note that this conclusion intrigued us, and we set to test the intention to donate in our experiment and included 2 additional questions: 1) if participants would donate instead of volunteer? and next, if they answered 'yes', 2) how much would they donate?.

As stated above, loneliness is generally considered an unpleasant state, and every individual strives to alleviate it. Researchers have uncovered two potential mechanisms for coping with loneliness.

The first mechanism is a direct loneliness reduction (an active mechanism), where individuals seek to reduce their frustration of being lonely. This mechanism was developed with the evolution of human beings and is researched within such areas as: evolutionary psychology (Cacioppo et al., 2006), the social reconnection theory (Maner et al., 2007), social pain (MacDonald & Leary, 2005) and the behavioural-motive perspective on the need to belong (Sheldon & Gunz, 2009). This first mechanism coincides very well with the research at hand as it provides the 'active coping mechanism' where individuals are willing to work with their feeling of loneliness through various means (in our case through engaging in volunteer tourism activities).

The second mechanism describes loneliness perpetuation (a passive mechanism). In this case, individuals feel that it is better not to affiliate with anyone, but to distance even more as they see social interactions as treats and react strongly to negative experiences. This naturally decreases their motivation to seek out social inclusion even more, as they value the risk of being hurt higher than possible gains of social interactions. Thus, this perpetuating cycle leaves them continuously lonely.

Both behavioural and social reaffiliation processes are activated in all stages of life for individuals after being exposed to the feeling of loneliness to balance out the negative feelings. There are a few exceptions where the reaffiliation system does not come into play, such as preferring solitude as part of a personality trait, low self-esteem, anxiety and genetic vulnerabilities (Vanhalst et al., 2015), which lie outside the scope of the current research.

Baumeister and Leary (1995) argue that the need to belong is fundamental to human nature motive. This implies that seeking for loneliness alleviation, or in other words strive to belong and form connections and bonds with other people is essential for humans. It is therefore very relevant and

important to research the methods to decrease the negative impact of feeling disconnection and social exclusion, so that humanity can thrive in a better sense. Looking at Maslow's hierarchy of needs (1943), we see that affiliation with friends is number two on the list, which provides a strong ground for researching into the methods to alleviate feeling of loneliness even more.

Impact of perceived affiliation on behaviour

To help individuals become happier providing them with affiliation as opposed to loneliness, we must understand what it is in the first place. This section unfolds the state-of-the-art literature on affiliation, especially within volunteer tourism.

In the current thesis we contend that an affiliative motive comes when someone wishes to “form and maintain cooperative alliances” (Griskevicius & Kenrick, 2013, p. 376).

Arguably, every individual looks for affiliation in all aspects of life, as it is crucial for humans to connect with others in order to survive. This mechanism originates from ancient times, as the evolved brain has changed to act upon these very basic survival instincts. In this case affiliation is one of the basic instruments needed to survive, mate and pass on the genes. If an individual does not affiliate with the partner, the mating process is not possible. From an evolutionary standpoint this naturally decreases the chances of the offspring to survive long term as well. Thus, affiliation is arguably an important part of the process (Durante & Griskevicius, 2016).

Another aspect of this issue is that humans have survived belonging to groups when hunting or fighting enemies. They would gather in larger groups to protect themselves more effectively, when signs of a threat were noticed (Durante & Griskevicius, 2016). It has been proven that in a fight or flight situation, humans turn to others nearby instead of running if this option is available to them (Van Vugt, De Cremer & Janssen, 2007).

As discussed earlier in this thesis, humans can cope with loneliness by reaffiliating through physical or social warmth. It has been shown that participants, after being primed with the feeling of exclusion, tried to self-regulate this negative state by seeking physiological warmth (Bargh & Shalev, 2012). As discussed, in an experiment carried out by Bargh and Shalev (2012), they found that participants who have been primed with loneliness subconsciously compensated for that state by taking longer and warmer baths. This shows that individuals naturally self-regulate when experiencing negative impact

of loneliness, if, for example, they are actively excluded or neglected as well as isolated by themselves while feeling abandoned.

In a final remark we would like to stress a mentioned earlier fundamental evolutionary mechanism shared by all humans from their birth: the link between warmth and affiliation comes from very early childhood from the time spent with a caregiver, who normally provides physical warmth, safety and ultimately survival (Fay & Maner, 2012; IJzerman et al., 2013).

2.3 Volunteer tourism industry

This section summarises the knowledge on applied field of current research – volunteer tourism – and its underlying motives: altruistic and egoistic. It establishes the grounds for the second link in our hypotheses, showing how volunteering can be a way to decrease loneliness or boost affiliation with altruistic or egoistic motives.

We can see that arguably volunteer tourism sector is presently growing exponentially. It started off as a European way to experience more ‘real’ cultures and later spread to Australia and USA. Subsequently, Asian and African people started to join the volunteer tourism movement (Alexander, 2012; Lo & Lee, 2011; Elliott, 2008; Wearing & McGehee, 2013).

In their work, Wearing and McGehee (2013) state that “A Google search of the words ‘volunteer tourism’ on 17 April 2008 returned 230,000 hits; that same search on 17 April 2012, just four years later, returned 4,850,000 hits and included published research, volunteer tourism agencies and NGO websites as well as the popular press” (Voluntourism.org, 2008). We recreated a similar Google search on 19 February 2019 and found 262,000,000 hits, while recreating it on 12 May 2019 we found 299,000,000 hits. This immense increase shows that volunteer tourism has grown (and is exponentially growing) into a very interesting topic for many people and potentially a profitable business form, as more and more volunteer tourism agencies are created (Rosenberg, 2018; Pariyar, 2017).

As this type of tourism is still a relatively new field, there are various conceptualisations of what volunteer tourism means. It is, for example, defined by Wearing (2001, p. 1) as “those tourists who, for various reasons, volunteer in an organized way to undertake holidays that might involve aiding or alleviating the material poverty of some groups in society, the restoration of certain environments, or

research into aspects of society or environment”. Here the author focuses on volunteering as an activity with certain specific aspects.

Brown (2005, p. 480) offers a tour operator’s perspective of volunteer tourism as a “type of tourism experience where a tour operator offers travellers an opportunity to participate in an optional excursion that has a volunteer component, as well as a cultural exchange with local people”. This differs from what Wearing (2001) offered, where the entire experience is focused on the volunteering component.

McGehee and Santos (2005, p. 760) describe volunteer tourism from the volunteer’s perspective, referring to a notion that it involves “utilizing discretionary time and income to go out of the regular sphere of activity to assist others in need”. We decided to use this latter definition of volunteer tourism for the current research, since we are interested in the perspective of the volunteer tourists more.

Despite the novelty of the idea, it has been estimated that 1.6 million people worldwide participate in volunteer tourism projects annually, and that volunteer tourists spend approximately GBP 1.3b per year (Tourism Research & Marketing, 2008). An example of websites appearing at the top of the Google search for ‘volunteer tourism’ organisations are: www.gooverseas.com, www.goabroad.com, www.volonturizam.info, www.volunteerhq.org, www.givingway.com, www.goeco.org, www.volunteerforever.com, www.gooverseas.com and www.earthwatch.org.

Coghlan and Fennell (2009) provide some insight into tourist travelling as volunteers. They found that there are many different reasons to join volunteer tourism. Moreover, these reasons might change over time or during a volunteering experience. Predominantly, tourists decide to engage in volunteer projects to give back to the community, develop new skills, to culturally immerse, to make a difference, to seek camaraderie and family bonding (Brown, 2005; Callanan & Thomas, 2005) and, in general, to develop relationships which reflects a desire to connect with other people. Therefore, some tourists seek affiliation through volunteering, which provides the grounds for our H1 and H2.

Several papers have researched the possible motivations for carrying out volunteer tourism, for example Coghlan and Fennell (2009), Shahzalal and Font (2018), Brown (2005). They have found that tourists engage for different reasons and with different motives: some are driven by an altruistic motive, others by an egoistic one. Moreover, researchers stress the problem that ‘bad’ or ‘non-qualified’ volunteers are becoming a big problem in some parts of the world. They found that, sometimes due to the almost non-existing requirements for acceptance of volunteers, they might cause

more harm to the local community than bring good. For example, a coordinator of a volunteer tourism project in Argentina has stated the following: “When we bring an intern without strong Spanish skills, it is unavoidably going to be a burden rather than an asset to the organization” (Raymon, 2008, p. 55). In another case a coordinator stated that “...the volunteers seemed more focused on promoting their own environmental values than appreciating the desire for development within the local community” (Wearing & McGee, 2013, p. 542).

Therefore, we argue that to better position volunteer tourism activities it is important to understand what drives people to sign up and what they might expect to gain from such an experience. It is also important to analyse participants’ motives for volunteering as many volunteer organisations might implement procedures to check up on participants before validating them to ensure that the people who participate do it for altruistic reasons with good intentions in mind, as this might have a great impact on the contribution they provide.

In this thesis we look at both motives. The definition of an altruistic motive within our research is the motivation of participants who act selflessly and do something good without expecting anything in return. Curiously, existing literature tells us that a volunteer tourist often has both motives, however one of the motives is mostly prevailing over the other. Scientists agree, that volunteering involves acting good for others just as much as for one self, calling this ‘win-win’ approach a ‘reciprocal altruism’ (Matthews, 2008; Soderman & Snead, 2008)

As both motives are present at the same time, we put emphasis in this thesis on the dominant and prevailing one. As was stated by Sober and Wilson (1998), not all ultimate desires of an altruist are other-directed.

More interesting to us is the fact that even when the behaviour can display altruism, the real motivation might be egoistic, and even though the outcome of the action would be the same, the driving motive can be different. For example, participating in charity not to really help the cause, but to show oneself in a more ‘positive light’. We would like to stress that volunteering for egoistic reasons should not be confused with being an egoistic person (Coghlan & Fennel, 2009).

Before we dive into the discussion on the altruistic and egoistic motives that underlie consumers’ behaviour within our research, it is important to define the terms we are going to operate in further discussion.

Altruistic motives for volunteer tourism

According to Rushton (1980) we can define altruism as an activity of doing good for people while not expecting the favour to be returned. According to Becker (1976, p. 818-819) “altruists give away their wealth to increase wealth of the others”. According to Piliavin and Cham (1990) people engage in altruistic behaviour when they benefit less from their behaviour than the recipient. Moreover, they conceptualize altruism as a voluntary and intentional act to benefit others without the expectation of an external reward. Brown specifies, that “the volunteer vacation phenomenon appears to bridge the altruistic motives of volunteering with the general commodified tourism experiences” (Brown, 2005, p. 494), stressing that altruistic motivation as a driver for the volunteer tourism.

Some researchers offer that volunteer tourism could just as well be called ‘altruistic tourism’ (Mustonen, 2005, 2007; Singh & Singh, 2004), as all volunteer tourists devote or ‘donate’ their time, money and energy on helping others. On the other hand, however, Fennell (2006) argues that there might be just as many altruistic reasons for volunteering traveling as there are egoistic ones. For example, according to Wearing (2003), an altruistic motive for a tourist could be a wish to save the environment, while an egoistic motive could be a wish to do it to explore ‘the self’. Brown and Lehto (2005) found that some participants want to give back and make a difference (altruistic motive) while others do it to experience an in-depth cultural immersion, camaraderie, and education (egoistic motive). On top of that, Weiler and Richins (1995) found that participants could be driven by the desire to do something meaningful and help with the research as part of their volunteering – an altruistic motive; while others wanted to learn new things and be challenged – an egoistic motive. Consequently, we can conclude that both motives exist for tourists at the same time, and thereby impact their actions.

In the past research we can find many different synonyms concerning the same concept such as pro-social, other-oriented, other-directed, socially-oriented, other-related, self-enhanced and selfless. As mentioned before, we deem it important to stress that there is a difference between being altruistic as a person and having altruistic motives, as well as being egoistic and having egoistic motives – the former is a personality trait (which is not used within the scope of the current research), while the latter is a description of the motivation. We argue that individuals’ personalities might be qualified as altruistic or egoistic, which does not prevent them from occasionally acting with the opposite motivation. Therefore, in this thesis we focus on the motives behind individuals’ decisions, not individuals’ personalities.

Humans are prone to engage in altruistic behaviour, as the emotional payoff upon their actions is immediate, especially if one does not do what is socially expected. Emotions and feelings of shame, empathy, and guilt occur immediately upon the action, and most individuals would subconsciously do anything to alleviate the feeling of guilt and shame, and thereby do something altruistic, even when it is an egoistic motive that guides them (Gintis, 2002), for example if a building was burning with a baby inside and one would not run in to save the baby, that person would most likely feel shame and guilt immediately. Thus, the person most probably would subconsciously seek to conduct an altruistic act to get rid of guilt and/or shame.

As discussed earlier, people in a cold room evaluated a deal (small drink and popcorn) for two persons higher than for one person (Lee et al., 2014), which shows that being primed with cold temperature leads to affiliation strive. We extend this link and argue that this could further lead to altruistic motives to buy a deal for two to attract ‘another one’ to get the deal and thus affiliate. This provides the grounds for H1, where cold temperature leads to loneliness and thereby activates the altruistic motives in people. However, it is worth to note that this same setting can activate a hidden egoistic motive to buy the deal for two and attract ‘another one’ to satisfy the ‘selfish’ needs to affiliate. In such case the same situation provides the grounds for our H3.

The vast majority of research on volunteer tourism focuses on what we categorise as ‘egoistic motives’ (McGehee & Norman, 2002; Gazley, 2001; Coghlan, 2005) behind the phenomena of volunteer tourism and overlooks the ‘altruistic motives’. Therefore, we consider this as a potential area for further research and attempt to differentiate the two motivations and their impact on behaviour within our thesis.

Egoistic motives for volunteer tourism

In our thesis we were guided by arguably common understanding of the term ‘egoistic’ as a ‘worldview of a person who puts his or her own needs and wants in front of other people’s needs and wants’. In the context of volunteer tourism this would mean a motivation to engage in such an activity for personal benefits rather than for the benefit of environment or other people.

Precisely, we use the definition of egoistic motives according to Mustonen (2007, p. 107): “egoistic motives [...serve as...] means to gain status or prestige”. According to Mustonen (2007) such egotistically motivated volunteer tourists are the best representation of the term ‘pseudo-altruism’. Here volunteer tourists only volunteer to gain benefits for themselves, while pretending to be

altruistic. Even though pseudo-altruism is out of the scope of this paper, we deem it important to note that it exists.

Egoistic motives for volunteer tourism might consist of some of the following benefits: learn something new, explore ‘one self’, have fun, receive self-actualisation (Fennel, 2009). Unfortunately, these motives sometimes drive the tourists’ behaviour which interferes with the interests and needs of the local community and actually does more harm than good.

However, having these egoistic motives might also be what drives more ‘newbies’ to try volunteer tourism and spread the word to make it more popular. The pitfall of such popularisation lies in attracting people who are not aware of the negative impact they create. Sometimes these new volunteers do harm unwillingly and unknowingly by making communities suffer rather than benefit them. At other times, the footprints that these volunteers leave in wild places destroy the nature and the communities. Overall, in such cases, volunteers do not really help but slowly create and develop another sector of classical tourism which might change and even potentially damage the natural environment and local communities in the long run (Guttentag, 2009).

Yet, we argue that shedding light onto these processes is beneficial for all the stakeholders: the volunteer tourists (as their needs are satisfied), local communities and researchers receiving the tourists (as they get the help needed), the volunteer tourism organisations and agencies (as they can better position and advertise their projects to attract relevant skilled tourists), NGOs and governmental organisations (as they get the help to reach the macro goals of the receiving countries).

For this thesis it is interesting to investigate how embodiment has an effect on the motives that participants are guided by while engaging in tourism. Thus, it is also important to establish the line between altruistic and egoistic motives. We generally see two directions: if a person volunteers to affiliate it might be for egoistic reasons, but what if they do it to help and improve the conditions within a community, or to ‘give back’ to the community? This would then be qualified as being altruistic by Brown and Lehto (2005), Brown (2005), Lo and Lee (2011).

While investigating the existing research on altruistic motivations, we stumbled upon an interesting reason to volunteer: to ‘give back to the community’. It is not entirely clear to us what it means to the researchers. It could be argued that when one chooses to state that one would like to ‘give back to the community’, it actually means that one ‘took something from the community’ at some previous point in life. In other words, in order to ‘give back’, one must have taken something in the first place.

Therefore, this motive might not be purely altruistic but rather egoistic, entailing the means to alleviate guilt. This might not have a deeper meaning and only be a play of words that previous researchers have not noticed. But for the reference we keep the discussion to prove how difficult it might be to find a line between egoistic and altruistic motives.

To conclude, in this research, we use the following definitions: altruistic motives guide the activity, when one does a favour not expecting anything in return, not even self-enhancement, not acts in an attempt to clear up the conscience or alleviate guilt/shame; while egoistic motives include the means to gain status or prestige. Curiously, people can change motives during the volunteering, as they gain new knowledge and experience. On top of that, as discussed, most participants have both egoistic and altruistic motives at some point (Coghlan & Fennell, 2009). It could be an idea for future research to define altruistic and egoistic motives more precisely, as the current research does not provide a clear definition of this concept. To note, we provided the smaller and less important suggestions for future research along the way throughout the thesis, as we deemed it relevant to note right after the particular conclusions to facilitate the reader.

2.4 Chapter conclusions

As conceptualised by Borghi and Cimatti (2010), embodied cognition field provides the connection between social and cognitive psychology on one side and human behaviour including behaviour of consumers on the other. The main idea of embodied cognition postulates that the sensory information serves as the feelings-as-information for mind, which has great impact on the physiological and psychological states (Barsalou 2008; Lakoff & Johnson 1980; Hung & Labroo, 2011; Krishna, 2012; Lee & Schwarz, 2010). Such feelings-as-information states take form of emotions and moods, sensations and metacognitive experiences (Schwarz, 2012). What is more, human use this information just as they would use the information obtained from more objective sources, e.g. vision, touch, smell or hearing (Herbert & Pollatos, 2012; Schwarz & Clore, 2007).

Current thesis aimed to research if the human body can be affected by the temperature of ambient environment to the extent that it can subconsciously influence cognition and consequently change human behaviour (as found by the researchers within embodied cognition field). The present research allows us to get deeper insight into the field of embodiment, where temperature (cold vs. warm) is impacting consumer motivations to engage in volunteer tourism. Research shows that loneliness can be primed by physical coldness (physiological route), or through social coldness and imagery of

physically cold experiences (psychological route). When feeling lonely, normally the body tries to self-regulate and alleviate the negative state of loneliness by seeking physical or social warmth. Social warmth can be achieved by doing good, e.g. volunteering during a holiday, as this gives a feeling of being closer to others.

Volunteer tourism, as a new type of tourism, has experienced substantial growth in the past decade: consumers wish to ‘do more good’ for others instead of for themselves during their holidays, however the reasons behind ‘doing good’ are questionable. According to recent research, people volunteer for various reasons; some are guided by altruistic motives, others by egoistic ones. Importantly, in tourists’ minds both motives are present at the same time, while one usually prevails over the other. It is arguably of great value to find out what motivates individuals to become more altruistic, once they are exposed to a certain temperature prime, especially as there is a rise in the number of non-authentic volunteers, who unfortunately do more harm than good in the places they visit.

To conclude, we consider it of theoretical contribution to the field of embodied cognition to verify if it is possible to affect volunteer tourists’ motives by priming them with cold or warm temperature and thus alter their need for affiliation, which would trigger a self-regulating mechanism.

3. METHODOLOGY

In the following chapter the methodological approach for the current research is presented. Firstly, we present the philosophy of science where the ontological, epistemological and methodological assumptions are discussed. Then, the research design is presented, including the choices made for creating a “framework for the collection and analysis of data” (Bryman, 2012, p. 46), which was created to secure valid and reliable results, including precise details of the experiment setup (to allow for future replication if needed), plus potential areas of improvement in the setup and used measurements.

3.1 Philosophy of science

Our study belongs to the domain of academic social research, which specifically lies within the field of consumer behaviour and consumer psychology (Bryman, 2012). All hypotheses are based on different existing research streams: the link between temperature prime and loneliness/affiliation has been established in literature on embodied cognition; the link between the desire to alleviate loneliness and engagement in volunteer tourism for specific motives has not been researched as such.

However, the basis for our hypotheses comes from research on volunteer tourism, altruistic and egoistic behaviour as well as embodied cognition theory.

The aim of current social research carried out using the quantitative methods is to conduct a statistical analysis of the data gathered through measurement of social phenomena and analyse it to uncover the valid and reliable insights on consumer behaviour. There are therefore some considerations that must be assessed relative to the approach of data gathering and analysis. Analysis of philosophy of science is crucial and, if done thoroughly, it provides justification and simultaneously the backbone of the research directions, aims and insight applications.

Ontology

Ontological considerations include our view on the “nature of social entities” (Bryman, 2012, p. 32), or phenomena in focus of the research. The main discussion here goes around the question whether the phenomena researched are objective, meaning “have a reality external to social actors” – objectivism; or are they rather subjective, thus being “built up from the perceptions and actions of social actors” (Bryman, 2012, p. 32) – constructionism.

We argue that in our research we follow the ontological position of objectivism which holds that the social phenomena in focus are not influenced by the social actors and could therefore be measured and analysed in a manner that does not entail the subjective individual interpretation of those phenomena.

We contend, that our central phenomenon of loneliness can be researched with both ontological stances (i.e. from objectivist and constructivist positions), as, in its essence, it cannot be separated from an individual for the analysis. Yet, we argue, that even if the phenomenon is experienced subjectively, it can still be measured with the established and validated measures which are exempt from the subjective evaluation. In other words, we argue that in our research we measure the phenomenon of loneliness objectively using the statistically validated scale of 6 questions (i.e. not allowing our respondents to interpret it subjectively). These questions in sum are serving as indicators of the strength of the loneliness feeling. In case we would ask our respondents to interpret their feeling and qualify themselves as ‘feeling or not feeling lonely’ during the experiment, then such measure would belong to the qualitative research. In that case, our research would qualify as taking the position of constructionism allowing the respondents to subjectively interpret the offered phenomenon and express their personal judgement and the meaning of it.

Epistemology

Epistemological considerations include our vision on the way we research the phenomena in our focus (Bryman, 2012). In our research we adhere to the epistemological position of positivism which advocates for the utilisation of natural science methods when studying the social phenomena (Bryman, 2012). This correlates with our ontological position of realism, as “[r]ealism is the view that objects have an existence independent of the knower” (Cohen, Manion & Morrison, 2007, p. 7). Moreover, positivism relies on an objective epistemology that offers analysis of the world through scientific observations (Gray, 2014).

Specifically, in current research, we followed the positivist principles described by Bryman (2012). The principle of deductivism poses that the theory is used to form a hypothesis which is tested to derive certain laws by which the surrounding world must work. The scientific research must (and can) be performed in an objective way, meaning that the phenomena are interpreted according to consensual definitions and are ‘value free’. Finally, the surrounding world and its phenomena are described with scientific statements, implying they are free of the normative statements and beliefs.

Therefore, we conducted our research applying the measures and statistical analysis for the interpretation of our data, as well as cleared our arguments and conclusions from the interpretations that would be susceptible to subjective judgements. All our phenomena were measured objectively and described with the use of value free definitions to the best degree deemed possible.

Research approach

Positivist research is often used with a deductive approach (Saunders et al. 2009) by developing hypotheses that are based on established theory and subsequently testing them empirically. In its nature, our research is quantitative as it utilises the measurement and analysis of the phenomenon in focus, following the deductive approach (Figure 4), where the theory is derived from the existing theoretical domain combining the findings on distinct phenomena with later formation of a hypothesis and its empirical validation (Bryman, 2012). Indeed, in our research for current thesis we scrutinised the vast area of consumer psychology theory related to embodied cognition and constructed our own model, combining pieces of the theory related to different niche domains. We formed the four hypotheses to test the model and subsequently conducted the experiment. Upon the data collection and validation, we analysed it statistically and formed the conclusion if our hypotheses were to be

confirmed or rejected. We further offered some considerations for future research and as such offered to revise the state-of-the-art theory.

On top of that, during our hypotheses formation stage, we further extended our research scope and proceed with the inductive approach where, according to our expectations, we planned to derive the theory from the findings of our experiment (Bryman, 2012). To our knowledge, existing literature does not provide us with a clear answer as to what exact outcome we should expect from the manipulation during our experiment (i.e. we were not sure if the particular temperature prime would activate altruistic or egoistic motivations for volunteer tourism). Therefore, we argue that the process of our research was conceived as deductive with an element of induction in its part (Bryman, 2012).

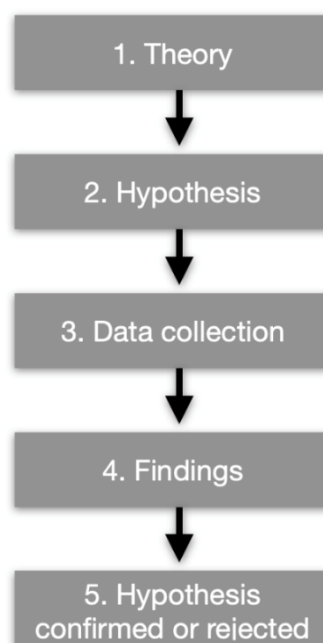


Figure 4. The general process of deduction (Bryman, 2012).

3.2 Research design

The research design of this study contains the framework applied to answer the research question and the techniques used to gather the data and analyse it. It is a structured plan how to answer the research question and qualify the hypotheses. As such, the research design guides the selection of sources and information that form the basis of the analysis of the data gathered. The design is also concerned with a formal study line where the research field is described giving an idea of the field state-of-the-art. As a result of the theoretical field analysis, the further hypotheses are formed to close the apparent

research gap (Blumberg, Cooper & Schindler, 2008). The design of current research includes an experiment with manipulation of a temperature condition within a laboratory setup. We argue that it is not desirable to conduct such experiment in the real world in an actual environment due to possible confounding variable biases. The data collection was made when distributing the questionnaire to the participants while they received different manipulation of the temperature. The researchers collected the answers through an online platform, not interfering with participants during the experiment, but only guiding them to the lab. During the experiment the researchers attempted to control the process as much as possible, but since we are dealing with research in social science, we argue that the process was impacted by the researchers (the discussion on this issue follows in sections below).

The purpose of the study is descriptive, as we are concerned with establishing if there is an effect on volunteer tourism motivation after being primed with temperature, and not why there could be such an effect. If we chose to analyse the reason of why the cold temperature affects people's perceived loneliness, a causal study would have emerged instead.

The current thesis is based on quantitative research, and accordingly followed the respective process as follows: the underlying theory within embodied cognition (with regard to temperature) was searched and scrutinised; the hypothesis was subsequently formed, and the appropriate research design outlined. Next, the measures for the variables identified were selected and the research set-up was formalised (the exact details of the experiment were identified). Having concluded that, the experiment was conducted according to the plan, including set-up of a marketing laboratory at CBS, choosing and recruiting the participants. Data was collected and processed, and it was statistically analysed using IBM SPSS Statistics software. After the analysis and insights collection, the results and conclusions were compiled and documented in the current thesis (Bryman, 2012).

Participants

Eighty-two participants conducted the laboratory experiment using the snowball sampling method which gave 50.7% males and 49.3% females; most were students from Copenhagen Business School. 60.7% of participants were from Denmark, whereas the rest were put in the category of Others. Participants were randomly assigned to the warm and cold conditions. All participants were found at CBS, Solbjerg Plads around the student Cafe Nexus during the daytime, none of the participants were paid to take part in the experiment. Seven participants were removed from the study as they were too knowledgeable about the topic of the lab experiment, which could have affected their

answers. 89.3 % of the sample were between 18-27 years old, which further limits the results from being generalisable to the whole population. Table 1 summarises the demographics of the respondents' sample.

Demographics	
What is your gender? (QG)	
Male	50.7 %
Female	49.3 %
What is your nationality? (QN)	
Danish	60.7 %
Others	29.3 %
Which of the following options best describes your current study/work situation? (QSW)	
Full-time employee	2.6%
Part-time employee	2.6%
Student with a job/internship	68%
Student (including PhD, and Postdoc)	22.6%
Other	4.2%
What is your current age? (QA)	
Below 18	0 %
18-22	40 %
23-27	49.3 %
28-32	9.3 %
32 or over	1.4 %

Table 1. Demographics of the participants' sample (outliers excluded).

Procedure

For the 'cold' group, a pitcher with cold water was placed in a fridge to obtain the same temperature for all respondents after the cold water was poured in a generic paper cup - 14° Celsius (Williams & Bargh, 2008; Fay & Maner, 2015; Sassenrath, Sassenberg & Semin, 2013). While the first researcher poured water, the second researcher informed the participants about the questionnaire. After that, the second researcher would place the participant in an isolated room in the lab with curtains closed and set medium ambient temperature with normal lighting. The participants were asked to hold the cup throughout the entire experiment as they were instructed to analyse the cup throughout the questionnaire. We contend that the fact that participants were left in the lab alone during the entire

procedure, undoubtedly leads to uncertainty whether or not they held the cup until the finalisation of the questionnaire. However, the best solution as to overcome this potential thread was that the researcher simply asked the participants to make sure they held the cup until the very end of the experiment.

The participants were given a filler task which consisted of three questions (“The cup is pleasant to hold?”, “The cup is suitable for transporting drinks over a longer period of time?”, “I would recommend the cup to my friends?”) requesting them to evaluate the cup (Bargh & Shalev, 2012; Sassenrath, Sassenberg & Semin, 2013) using a six point Likert scale. After answering the product evaluation questions, they were asked to answer six questions regarding their perceived loneliness state to see if the cold temperature had impacted the participants. Further, participants answered eight questions regarding volunteer tourism, divided into egoistic and altruistic motives with a Likert scale of five items (Ooi & Laing, 2010), ending up with demographics questions and lastly three questions on intentions to donate and behaviour towards newsletter subscription. At the end they were asked to escort themselves out of the room once they have completed the questionnaire, so no affiliation was expected to occur during the laboratory experiment (Fay & Maner, 2015). The questionnaire is discussed in more detail in the next section on the measurements.

As for the warm cup, the water was heated to 100° Celsius, and poured in a thermos flask where it was kept until needed. When pouring the warm water in the paper cups, we poured 50% of hot water from the thermos flask and 50% tap water which gave us a temperature around 50-55° Celsius. To note, prior to experiment, we measured the warm temperature that would be comfortable to stand for ~7 minutes (approximate time to finish our questionnaire), and it was around 50-55° Celsius. Additionally, the temperature of 50° Celsius was used in the research on embodied cognition by Schilder, IJzerman and Denissen (2014). The use of cups with 20°C and 40°C to represent cold and warm primes respectively was also suggested in the research by Sassenrath et al. (2013). During current experiment, all cups were prepared for the experiment utilising a thermometer and the exact temperatures were logged to ensure consistency of the primes between the participants, as suggested in the study by Van Acker et al. (2016) as they overlooked this step in their experiment.

Experiment

As discussed, the idea and basis for current experiment mainly comes from the paper by Williams and Bargh (2008) which was published in the Science journal and showed that giving participants

warm cups would make them perceive the target person from their experiment as a ‘warmer personality’. At the same time, in their research it was found that after being exposed to cold temperature, participants were less willing to provide a gift for a friend than when primed with warm temperature (Williams & Bargh, 2008).

The lab experimental (as opposed to in-field) design was chosen to enhance the internal validity, since it would be easy to replicate by other researchers in future, as there are not many contexts that affect the results in a lab. Furthermore, it would be easy to control potential confounding variables, which might distort the results.

The lab had medium temperature compared to the rest of the building, the curtains were closed to make sure that sunlight and weather did not interfere with the experiment procedure. As earlier studies have shown, weather can have an impact on people’s perception (Li, Johnson & Zaval, 2011).

The laboratory experiment consisted of several elements. At first, participants had to enter the lab where they were placed in an open cubicle, so that they could only see the computer screen in front of them. Participants were then given the warm or the cold cup to hold and complete the questionnaire. They had to hold the cup throughout the whole lab experiment to make sure the embodiment effect occurred for each of them. According to referenced studies, the embodiment from temperatures occurs relatively fast, however not many researchers actually tell for how long time they primed the participants. Sassenrath et al. (2013) noted that the effect occurred after answering 10 questions, which took around 1-2 minutes. Fay and Maner (2015) showed that it worked after only 10 seconds in their experiment. IJzerman and Semin (2009) give us the timeframe of installing a questionnaire on a computer (which we hypothesize would take several minutes). Acker, Kerselaers, Pantophlet and IJzerman (2016) note the time of giving a product evaluation for 30 seconds. Bargh and Shalev (2012) gave participants a warm or cold thermo pack to hold in their hands for one minute and then answer three questions regarding the product. And lastly, Williams and Bargh (2008) primed participants within the time it required to take the lift up to the fourth floor (which we tested to be around 25 seconds).

Thus, we argue that everything between 30 seconds and 2 minutes should be a valid time frame for the embodiment effect to occur, as many researchers inform that they did it within this time limits. How fast and for how long the embodiment effect occurs are open-ended questions as these have not been clearly provided by any of the above researchers, which is why the respondents in our laboratory

experiment were asked to hold the cup throughout the entire laboratory experiment. Additionally, we included the ostensible cup evaluation exercise at the beginning of the procedure. With this, we intended to make sure the effect occurred before we asked the participants about loneliness and lasted until the last questions of the questionnaire about their donation intentions and actual behaviour towards newsletter subscription.

As physical warmth increases affiliation according to Fay and Maner (2015), we chose to prepare an online questionnaire so that no researcher would be present in the lab while the participants completed the questionnaire. Moreover, no social interactions with the researcher would interfere with the respondents' perceived emotional state and create social warmth. This was also done to eliminate any extra physical warmth in the lab, i.e. the ambient temperature in the room. Yet, we would like to note that even though we attempted to avoid this boost in affiliation, it still happened during the recruitment of the participants, which we assume affected our data validity in the end. The discussion on what we called 'psychological baseline' is briefly provided in the section below as well as in details discussed in later chapters.

Areas of improvement in the experimental set-up

First and foremost, the experiment was conducted by the researchers, who were knowledgeable about the goals of the experiment, which might have affected them and thereby impacted the way they handled the participants. Consequently, for future research, it would be recommended to conduct the study with administrators who are not familiar with the aims of the research, like Williams and Bargh (2008) provided in their second study.

Further, the lab might not have been satisfactorily isolated, since the corridor was available for everyone, which could have decreased the primed feeling of loneliness. The temperature on the second floor where the lab was located might have been slightly warmer than at the ground floor which might also have primed the participants in uncontrollable manner. All the participants in the experiment walked up the stairs which could potentially have increased their self-esteem (Ostinelli et al., 2014) and thereby impacted their feeling of affiliation and replies in the questionnaire. Most participants were waiting for some time and chatting with peers prior to experiment, which might have also primed them, and may thereby have created a psychological baseline of feeling affiliated right before entering the lab. These uncertainties might be significant confounders which impacted the results of the experiment. Lastly, we cannot guarantee that the participants really held the cup,

although some of them still held it when leaving the room after the experiment. Some participants confirmed that they held it throughout the whole experiment and felt strange doing so.

Measurements

For the current lab experiment, the online self-completion questionnaire (accessed through a private link, i.e. only specific persons could access it and not the general public) was created in order to measure participants' perceived loneliness level as well as volunteer tourism motivations along with the intentions towards donations and actual behaviour towards volunteer tourism. It was important to design a self-completion questionnaire as the goal of the experiment was to investigate if the participants holding a cold cup would be primed to feel lonely, therefore the lab where the individuals participated in the experiment was isolated and the interviewer left the room prior to the commencement of the procedure.

Prior to the questionnaire design, we defined the specific information we were interested in: measures of loneliness, the motivation for volunteer tourism, intentions for donation as well as actual behaviour towards volunteer tourism. We analysed previous research to get an understanding of how these types of experiments were conducted (e.g. the sequence of procedures), investigated how the data should be further analysed once gathered and mapped the question flow according to best practices outlined by Brace (2018).

Upon the questionnaire design completion and prior to the actual lab experiment, the pilot experiment was conducted several times with implementation of necessary adjustments (Brace, 2018). The description of the final questionnaire follows below.

The questionnaire was comprised of three main modules taken as parts from statistically validated questionnaires used by other researchers to determine reliable measures of the variables within the research. There were no screening questions added at the beginning, as the sample was defined by age only and there were no reasons to exclude participants prior to experiment, therefore the screening was made at the stage of respondents recruiting. Nonetheless, the demographic questions were added for the group consistency. Most of the questions were close-ended questions with the scales and 4 questions were open-ended.

According to Brace (2018), the questions themselves are a crucial part of the research, as all the efforts and preparations would be worthless if the data gathered is not valid. Specifically, we paid

attention to the wording of the questions (as mentioned above, we kept the original wording from the previously validated research), the order of the blocks of questions (to provide for non-priming and eliminate potential biases), the processing fluency (meaning the questions were formed in a simple to understand way).

It was decided to split the questions into modules according to the topic they covered: cup evaluation, loneliness, altruistic and egoistic motivations for volunteer tourism, demographics, intentions to donate and behaviour towards newsletter subscription and lastly – qualifiers (two questions about the research topic understanding and the temperature prime). Questions of the same module were grouped on the same web page, allowing the respondents to see all the answers to the same topic scrolling up and down.

The colour palette was chosen to be neutral grey (Appendix 2), as any of the usual colour palettes used as default in the software (blue, red, green) could prime the respondents to think of particular temperatures, as it has been shown within grounded cognition field that colours might be semantically connected with the perception of temperature (Amsel, Urbach & Kutas, 2014; Baek, Choob & Lee, 2018).

At the top of each page there was a progress indicator to let the respondents know how far they had moved forward and how much was still left (Appendix 2). According to Conrad, Couper, Tourangeau and Peytchev (2005), letting the participants know their progress with the questionnaire impacts their perception of its difficulty and decreases the chances of questionnaire interruption due to lower frustration and perceived effort.

Before filling in the questionnaire, the participants were briefed on the task and asked to fill in the questionnaire to the best degree of their knowledge on the topics. Therefore, the explanation of the term ‘volunteer tourism’ was not included, as we wished to understand what the individual’s opinion was without being primed by the definition, which would include the notions of ‘aiding’, ‘alleviating the material poverty’, ‘restoration of environment’ according to Wearing (2000).

Specifically, the questionnaire (Appendix 1) was programmed on the online platform Qualtrics – a professional questionnaire research platform that is freely available for CBS students. The questionnaire comprised 19 questions. It was administered through the laptop and was already accessible when the participants entered the room. Therefore, they did not have to open any additional

window or in any other way access the questionnaire themselves. It was ready for them when they were let into the room and received the cup, so they could start answering immediately.

The first three questions were related to the cup as part of an ostensible cup evaluation exercise, therefore these questions themselves did not matter for the analysis. Nonetheless, while creating the wording for these questions, we were inspired by the research of Bargh and Shalev (2012), Sassenrath et al. (2013). Specifically, we asked participants about the pleasantness to hold, suitability of transporting and if they would recommend the cup to friends. We decided to include only close-ended questions to save time for participants in this ostensible test. Importantly, the cup evaluation was put at the very beginning of the questionnaire to 1) connect the holding of the cup with the perceived goal of the whole laboratory experiment, 2) to make sure the participants really held the cup for the first 20-30s of the experiment as a minimum (which is equivalent to the approximate time of a lift ride to the fourth floor that was considered to be enough to trigger the desired effect according to Williams and Bargh (2008), and 3) to distract the participants from the temperature of water in case they really noticed it upon receiving the cup.

The next six questions were taken from the revised UCLA Loneliness Scale originally developed by Russell (1996). The original scale was comprised of 20 questions, which was considered too long for the current laboratory experiment. Therefore, the decision to reduce the number of questions was taken based on the literature advocating for such a decision. Specifically, according to the statistical validation analysis conducted by Neto (2014) the reduced to 6 specific items UCLA Loneliness Scale provides reliable and appropriate measure of the loneliness for adults, therefore only these 6 questions were selected for the current study.

Subsequently, there was an itemised rating scale (Likert scale) for attribute evaluation related to the motives for engaging in volunteer tourism. The attributes were taken from the study conducted by Ooi and Laing (2010) where they used 31 attributes to measure the motivations for volunteer tourism participation (they included attributes of both types of motivation). In our study, we decided to reduce the list and have only 8 attributes: 4 altruistic and 4 egoistic. The choice of the particular attributes was based on the review paper from Coghlan and Fennell (2009), where they conducted a meta-analysis of the research on volunteer tourists' goals. Their research resulted in a list of the most commonly arising motivations for the volunteer tourists, both egoistic and altruistic. Thus, we narrowed down the long list from Ooi and Laing (2010) guided by the findings of Coghlan and Fennell (2009) from 31 to 8 attributes.

Next in the questionnaire there were four questions regarding demographics (age, gender, nationality, study/work situation) which allowed to track the consistency between the experimental groups.

Three extra questions were included in the questionnaire to gather additional learnings regarding the topic of the current research and measure the actual behaviour towards the newsletter subscription, not only the intentions towards donating. First question of that block was dedicated to test if respondents would consider donating money rather than their time/effort through volunteering. Such question was included to test whether egoistically motivated respondents would rather donate money (following an 'easy way to be good'), should such option be offered to them. For those participants who answered 'yes', we additionally asked how much money they would consider donating in order to capture the variability of the answers and to test whether there was correlation between the altruistic/egoistic motives and the amount of donations considered.

In connection to previous question we asked participants if they would provide their email address in case they wished to receive topic-relevant newsletters. This would show the actual behaviour indicating that they are interested in volunteer tourism and are ready 'on the spot' to consider it as an activity they would engage in. Therefore, such question allowed to capture not only intentions towards donating, but the actual behaviour towards newsletter subscription which is deemed a more reliable measure for the analysis.

Last two questions asked to share any thoughts regarding the experiment goal (to exclude those participants that figured it out during the procedure) as well as to indicate the temperature of the cup they were holding. To note, the question on the cup temperature was the last question of the questionnaire to make sure that the conscious awareness of the temperature would not distort any previous answers and the experiment itself. This question was included as it was regarded very important to track the temperature manipulation between participants and to make sure this data was reliable. Further, we kept track of the cold/warm condition with pen and paper while pouring water for the participants, however this control alone was not considered reliable enough and was used mainly to conveniently and easily ensure the equal recruiting of participants and same temperature every time.

To note, some of the respondents commented post-experiment that they were a bit confused by the sudden shift of topics during the experiment, meaning that the transition between the question modules was not smooth. We argue that this did not bias the data, however created somewhat

surprising experience for the participants. We would advise in the future to dedicate extra time to create one or two ‘filler’ screens with additional explanation why the topic of the questions in the subsequent module was changed. The downside of such ‘improved’ solution would be extra time spent on the questionnaire by respondents, therefore we decided to leave these explanations out to save ~30 seconds per respondent. This resulted in the final average time of the questionnaire completion of 7.4 minutes.

4. DATA ANALYSIS

In the following chapter we provide a description of our data analysis, using the measures of data validation assessment through factor analysis with Structural Equation Modelling (SEM), including assessment of internal consistency, convergent validity and discriminant validity, and the analysis of our two group mean results using the Independent Samples t-test. We conclude the chapter with a summary of our results and reflections on the experimental design.

4.1 Method of analysis

To test the relationship between several variables at the same time, the multivariate analysis can be applied (Hair, Hult, Ringle, Sarstedt & Thiele, 2017), where such variables represent the constructs which were gathered through the questionnaire from a defined respondent’s sample, thus from collected primary data.

Theory behind factor analysis

One of the statistical methods used within the current research is factor analysis, which allows to uncover common factors within the hypothesised conceptual model.

The model assumes a link between increased feeling of loneliness, thus the decreased affiliation (within our model this is the same process), and subsequent strive to alter such a negative state through self-regulation mechanism. As the consumption domain of the current research lies within volunteer tourism industry, we apply our model to this field, and hypothesise that the self-regulating mechanism allows the lonely respondents with the cold cup to improve their state by engaging in volunteer tourism, as research (for example Lee et al., 2014; Ijzerman et al., 2018) suggests such a possibility.

As discussed, we reviewed the existing literature on volunteer tourism and discovered that engagement in volunteer tourism may very much depend on the motivation for the respondents. The literature identifies the two types of motivation: altruistic and egoistic, while acknowledging that in the predominant majority of cases both motives are present for all the people, with one of them dominating over the other to a varying degree for different people (Wearing & McGehee, 2013). Thus, we hypothesised further that it is possible that the effect of the embodied cognition (the cold cup prime's specifically) is so strong that it might impact the motivation of the respondents. Precisely, based on the existing literature (Lee et al., 2014) we deemed it probable that the lonely participants might engage in volunteer tourism for egoistic reasons, while the participants primed with the warm cup might be guided by altruistic motives.

Thus, in our model we have 3 latent variables: loneliness, altruistic and egoistic motives behind volunteer tourism intentions. A latent variable represents a “phenomenon of theoretical interest which cannot be directly observed and have to be assessed by manifest measures which are observable” (Diamantopoulos, Riefler & Roth, 2008, p. 1204). Each of our 3 latent variables were represented by a set of measured variables (Table 5). To test the relationship between the identified variables and their items, we conducted the factor analysis. Such analysis comprises factor extraction with the goal of taking out as much as possible of the common variance within the first factor (Suhr, 2006). The following factors then successively capture the maximum possible common variance until there is no common variance left. As a result, the factor analysis allows to identify the number of factors that account for the majority of the data variance (Suhr, 2006).

As mentioned, we included two intention-measuring variables of potential donations (including the exact amount of a donation) and a behavioural variable asking to provide the email address in case the respondent would consider volunteer tourism. However, these three additional questions were not part of the main model, thus were not analysed through factor analysis.

Theory behind structural equation modelling (SEM)

Within current research, we aim to test the cause-effect relationship between the latent variables (loneliness, altruistic motives, egoistic motives) and measured items. SEM is especially useful for the task of modelling the relationships between the latent variables, simultaneously accounting for measurement errors of different types, providing “evidence of the quality of measurement” (Babin, Hair & Boles, 2008, p. 284). Indeed, according to Steenkamp and Baumgartner (2000, p. 197-198),

“modelers are well aware of the fact that questionnaire data contain measurement error”, which is not easily eliminated with the increase in sample size, eventually distorting the results. They further argue that approaches, developed for modelling using econometric techniques, are not able to capture and eliminate the error of measurement that comes from the exogenous variables and thus are vulnerable for results distortion. SEM, on contrary, allows to capture such errors related to measurement and purify the data (Steenkamp & Baumgartner, 2000).

It is further suggested that within SEM analysis, each construct (or latent variable) should be represented by a set of indicators or items (measured variables) in order to further decrease the measurement error (Steenkamp & Baumgartner, 2000). Therefore, in our research, each construct - loneliness, altruistic motives, egoistic motives - is represented by a set of indicators: 6, 4 and 4 respectively. Moreover, SEM is deemed suitable to compare the correlation of variables (constructs) between various groups of respondents (Steenkamp & Baumgartner, 2000), which, in current case are the groups with cold versus warm cup primes. This can also be used to compare relationships between constructs across different groups, e.g., market segments, countries.

Importantly, the two main requirements towards the model in order to use SEM for the analysis were: 1) within the model, all parameters must be homogeneous for all the samples, and 2) the correlation between the variables in the model must be linear (Steenkamp & Baumgartner, 2000). Both requirements were met within current research, even though according to some research, heterogeneity (Jedidi, Jagpal & DeSarbo, 1997) as well as non-linearity (Jaccard & Wan, 1996) could be accounted for just as well.

Classical statistical approach assumes the statistical test in order to identify what is the significance of the conducted analysis. SEM, however, is used to validate the “adequacy of model fit to the data” (Suhr, 2006, p.1). After this is completed, the procedure follows in order to “determine significant parameter estimates” (Suhr, 2006, p.1). Here the Chi-square is used to identify the discrepancy “between expected and observed covariance matrices” (Suhr, 2006, p.1).

It is argued that SEM is a relevant tool for social sciences, as it allows to employ the objective statistical analysis to uncover relationships between latent and measured (i.e. observed) variables, as well as the relationships between the latent variables themselves (Hancock, 2003; Kaplan, 2008; Kline, 2011). In other words, SEM outcome is a measure of the interrelation between the items and

constructs (measurement/outer model), as well as between constructs themselves (structural/ inner model) (Hair et al., 2017).

It has been also argued that the SEM is an appropriate type of analysis when the theory used in the research is not highly developed (Hair et al., 2017), which is the case in our research. Moreover, it is appropriate to use with the relatively small sample size while still allowing for the “high levels of statistical power” (Hair et al., 2017, p. 20), which is the case for current research. Additionally, it works well for the analysis of the various measurement scales (Hair et al., 2017). We argue that this is the case for our thesis, as we combined the findings on embodied cognition, specifically the insights on the impact of temperature on the consumer behaviour and applied to the field of volunteer tourism, where no theoretical findings substantiate the claim that the embodied effect would necessarily occur. Therefore, to validate our hypothesis, the effect of embodied cognition has been found to impact so strongly that the expected effect must occur in any domain of consumption if impacted by the strong enough primes rooted in our biological bodily mechanisms (both in brain structures, and psychological behavioural patterns as discussed in the literature review earlier).

As proposed by Hair et al. (2017), the test of Partial Least Squares SEM (PLS-SEM) measures the evaluation of the validity and reliability of the constructs in the model. Therefore, it is advised to use multiple items within each construct, as this would increase the accuracy of the measure. In our research we used multiple items to describe our constructs. Specifically, the latent variable of loneliness was represented by 6 observable variables (taken from the UCLA-6 scale by Neto (2014)), the variables of altruistic and egoistic volunteer tourism were represented by 4 observable variables each (taken from the list provided in the research by Ooi & Laing (2010)).

Such a method helps to capture the construct meaning from the various angles and “represent all the different aspects” of this construct. For example, this is especially relevant for our items behind the latent variables of altruistic and egoistic motives. As discussed earlier, these items were taken from the validated list of volunteer tourism motivations for the research by Ooi and Laing (2010). We decided to take 4 various statements for each motive in an attempt to capture the diversity of benefits behind each motive that one might seek (based on the theoretical research papers that review and summarize those motivations: Wearing & McGehee, 2013; Brown, 2005; Coghlan & Fennel, 2009). Thus, we conceptualised ‘altruistic’ as: meaningful activity that helps the environment and places that one’s visit, immersion in the local culture and help with development. Similarly, we

conceptualised ‘egoistic’ as: desire to do volunteering to be challenged, experience new things and acquire new valuable CV skills.

Thus, to evaluate our measurement model, we assess the internal consistency (including the measures of the composite reliability and Cronbach’s alpha), convergent validity (average variance extracted – AVE) as well as discriminant validity. These measures in total present the “evidence of the measures’ quality” (Hair et al., 2017, p. 109).

Data processing

Once the data was gathered on the Qualtrics platform used for the questionnaire, it had to be converted to .csv format (the Excel file) to enable SPSS analysis. During the procedure, the following steps were taken:

1. For each of the questions the answer items were recorded, so that the textual answer was assigned a number. These measurement scales were assigned automatically within the Qualtrics platform (Figure 5).
2. The same procedure was conducted for all the questions which identified the classes of responses that normally would identify people, for example the gender, age, education level (Figure 6).

Recode Values

Recode Values Variable Naming

1 Strongly disagree

2 Disagree

3 Somewhat disagree

4 Neither agree nor disagree

5 Somewhat agree

6 Agree

7 Strongly agree

Close

Figure 5. Recoded values example 1.

Recode Values

Recode Values Variable Naming

1 Full-time employee

2 Part-time employee

3 Student with a job/internship

4 Student (including PhD, and Postdoc)

5 Other

Close

Figure 6. Recoded values example 2.

- For the open-ended questions, the measurement scales were coded manually in Excel, once the data was extracted from Qualtrics, as follows:
 - Nationality was coded as a binary entry: (1) Danish, (2) non-Danish,
 - amount of possible donation: (1) nothing; (2) DKK 50-200; (3) DKK 201-500; (4) DKK 501-1000; (5) above DKK 1000,
 - provided an email address for a monthly newsletter subscription: (1) provided; (2) not provided.
- Next we excluded from the sample the results of those respondents who provided an extensive understanding of the topic of research in the question “Do you have an idea what the goal of this experiment was? If yes, please share your thoughts”.

We subjectively decided to eliminate particular individual entries based on our judgement if the participant understood the impact of the cold/warm prime on their answers regarding the loneliness and volunteer motivations. We agree that such a decision may be challenged. Yet we were as conservative as possible while deciding to exclude particular data entries. For example, one of the participants commented the following: “My guess would be that you are trying to figure out if people holding a ‘warm’ drink are more likely to act more generously and warm towards other people. I recall a similar experiment where the researchers tested whether you like people more when you hold

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	NN
1	L1	L2	L3	L4	L5	L6	LSUM	VTA1	VTA2	VTE3	VTE4	VTAS	VTE6	VTE7	VTAS	VTASUM	VTESUM	AGE	GEN	NAT	STUD	DON	DONM	NN
2	2	1	3	2	1	2	11	5	5	5	5	4	4	5	5	19	19	4	2	2	4	5	1	
3	2	2	1	1	1	2	9	2	3	4	5	5	5	4	4	14	19	4	2	1	4	4	2	
4	3	1	2	2	2	3	13	3	4	4	5	4	4	4	3	14	17	2	2	1	3	5	1	
5	2	1	2	2	2	2	11	1	2	4	4	2	4	4	1	6	16	2	2	1	3	4	2	
6	2	1	3	2	1	2	11	2	2	2	2	4	2	3	3	13	9	2	1	1	3	5	1	
7	2	1	2	1	2	3	11	4	4	5	3	4	5	2	3	15	15	2	2	1	3	5	1	
8	2	1	3	2	2	2	12	4	2	2	4	4	4	4	2	12	14	4	2	1	3	5	1	
9	2	1	1	1	1	1	7	3	3	4	4	4	3	4	3	13	15	4	2	1	4	4	2	
10	2	1	2	1	1	2	9	3	4	4	4	2	4	4	4	13	16	4	2	1	3	5	1	
11	2	1	2	2	1	2	10	3	4	4	5	5	5	3	5	17	17	4	2	1	4	5	1	
12	2	1	2	2	2	3	12	4	3	3	4	4	4	4	3	14	15	4	1	1	3	5	1	
13	2	1	1	2	3	2	11	4	4	4	5	5	4	3	4	17	16	2	1	1	3	5	1	
14	1	1	1	1	2	2	8	3	4	3	4	4	4	3	4	15	14	2	1	1	4	5	1	
15	2	1	1	2	1	2	9	5	3	3	4	5	2	1	4	17	10	4	1	1	3	4	1	
16	3	1	2	2	2	2	12	4	5	3	2	4	4	5	5	18	14	4	1	1	3	4	5	
17	3	1	3	3	4	4	18	3	4	4	4	4	4	4	4	15	16	2	2	1	3	5	1	
18	3	1	2	2	2	2	12	4	4	4	5	5	4	4	3	16	17	2	2	1	3	5	1	
19	2	1	1	1	2	2	9	3	4	4	4	4	4	4	4	15	16	2	1	1	3	5	1	
20	1	1	1	1	1	2	7	4	5	5	5	5	4	2	4	18	16	4	2	1	3	4	2	
21	2	3	2	1	2	2	10	2	2	4	4	2	4	4	2	8	16	4	3	1	1	4	3	
22	2	1	2	2	2	2	11	4	4	5	5	4	4	4	4	16	18	4	1	1	3	5	1	
23	2	1	2	3	2	3	13	3	5	4	3	4	4	4	2	14	15	2	1	1	3	5	1	
24	3	2	2	2	3	4	16	5	2	4	4	2	5	5	3	12	18	2	2	1	3	4	3	
25	1	1	2	1	2	1	8	4	4	4	4	5	5	3	5	18	16	4	2	2	3	5	1	
26	3	2	3	3	2	4	17	4	4	5	5	3	4	2	4	15	16	4	2	2	3	4	4	
27	3	1	3	3	2	3	15	4	2	4	4	5	4	4	4	15	16	4	1	2	3	5	1	

Table 3. Recoded and cleaned data in .csv format.

Once the data was converted from the raw data format (Table 2) to numerical .csv format and cleaned (Table 3), it was ready to be analysed in SPSS.

4.2 Data analysis

The current analysis uses a multivariate statistical technique which is regularly used in social science when analysing the gathered data (Astrachan, Patel & Wanzenried, 2014), and is used especially when complex sets of correlations need to be validated. We in this section scrutinize the factor loadings, which is a correlation of variables with particular factors. According to the guidelines by Hair, Anderson, Tatham and Black (1998) the factors loadings should be above 0.5 in order to be valid for the statistical analysis.

To get an overview of the measures analysed, the following list of constructs and items is provided (Table 4). This can be used as a guideline for understanding the shorted names for the constructs and items presented in tables and analysis below. The reasoning on exclusion of 3 items follows in section below.

Constructs / items list
Loneliness (Neto, 2014)
How often do you feel lack of companionship? (L1)
How often do you feel part of a group of friends? (L2)
How often do you feel left out? (L3)
How often do you feel isolated from others? (L4)
How often do you feel unhappy being so withdrawn? (L5) - excluded
How often do you feel people are around you but not with you? (L6)
Altruistic motives (Ooi & Laing, 2010) shortened
It is a meaningful thing to do (VTA1)
I want to assist the natural environment (VTA2)
I want to immerse myself in the local culture (VTA5) - excluded
I want to contribute to the places I visit (VTA8)
Egoistic motives (Ooi & Laing, 2010) shortened
I want to be challenged (VTE3)
I want to experience something different and new (VTE4)
I want to learn valuable life skills (VTE6) - excluded
I want to gain valuable experience for my CV (VTE7)
Donating (newly developed)
Would you rather donate money than actively volunteer? (QD)
If yes, how much DKK would you donate? (QDM)
Would you like to receive a monthly newsletter about volunteer tourism projects? Is yes please provide your email below. (QDM)

Table 4. Constructs (variables) and items measured within the research.

Scale purification

Looking at the results in Figure 7, applying our PLS-SEM analysis, we can see at first glance that not all the items are positively or highly enough correlated with the variables they were designed to represent. Therefore, we went through the scale purification procedure to remove the low-correlated factors. We also discuss the implications of our scale purification for the validity, reliability and parsimony (Netemeyer, Bearden & Sharma 2003; MacKenzie, Podsakoff & Podsakoff, 2011). The scale purification process for that matter is defined as “[a] justified removal of items from multi-item scales” (Wieland, Kock & Josiassen, 2018). The criteria and qualities are adapted from the research on methodological approach to scale purification by Wieland et al. (2018).

Following the guidelines from the research by Wieland et al. (2018) we applied the guidelines for item removal for our scales. We contend with the authors that both types of criteria (statistical and judgmental) are important for the social sciences and one should not rely strictly on “empirical meaning” of the items, while ignoring the “theoretical meaning”, or semantic meaning of those items (Wieland et al., 2018; Bagozzi & Yi, 2012). Therefore, the following analysis presents our arguments and analysis of criteria to exclude some of the items from our scales.

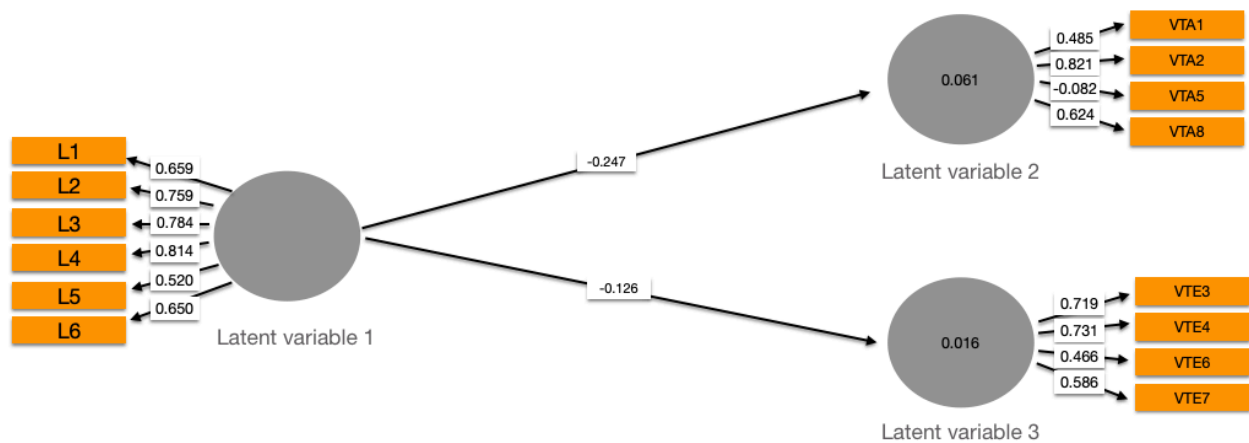


Figure 7. Initial (full) conceptual model.

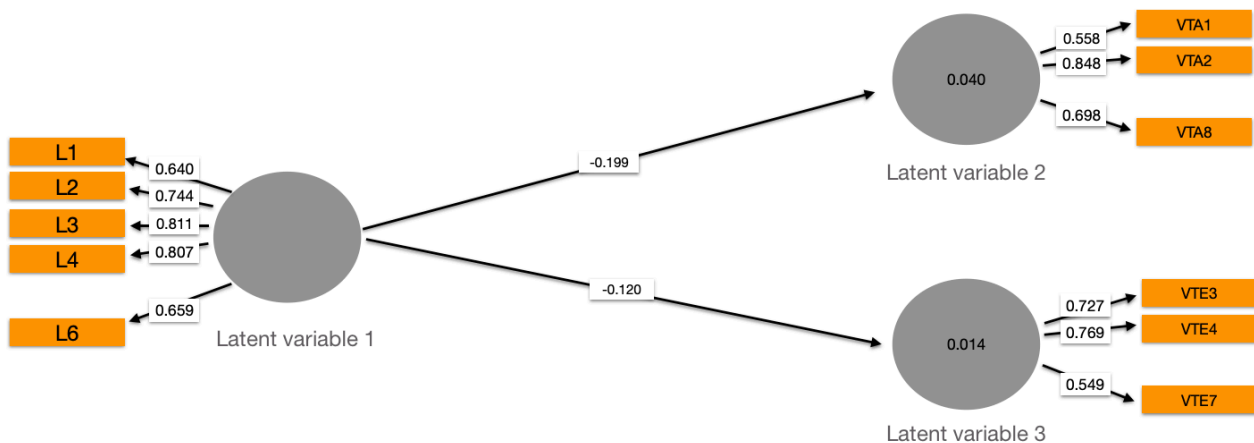


Figure 8. Final (purified) conceptual model.

Hair et al. (1998) propose that the items within the scale should have value 0.5 or above to be considered as correlated, thus representative, of the construct they relate to. As the result of our analysis, we chose to drop three of the items in total, as they were below the value of 0.5: one measure from the list for each of the latent variables (Figure 8). Specifically, in the loneliness list we left out

item L5 “How often do you feel unhappy being so withdrawn”, as the value was 0.52, which is just above 0.5. Therefore, we argue that this measure is the least predicting of the variable ‘loneliness’ and very weakly related to it. We contend that since we took all the items from the existing and validated research (UCLA-6 scale from research done by Neto (2014)), it has been validated as predictive of the loneliness construct.

Yet, we argue, that there might be reasons for this item to not work well enough in our research: 1) it is possible that the wording ‘feel unhappy being so withdrawn’ might have been understood as a strongly negative statement by our respondents and they were not likely to admit that they can feel so withdrawn and abandoned at times. Therefore, we speculate that possibly the cultural normative reason might interfere with the result in this case: since our sample is comprised of young (89.3% of them were 18-27 years old) Danish people (60.7% of Danes in the sample), and Danish are named to be the ‘happiest nation in the world’ in the World Happiness Report (Sachs, Layard & Helliwell, 2018), we hypothesise that this might have impacted their non-willingness to admit that they can feel very withdrawn. Nonetheless, since it is speculation from our side, we advise to further research this issue.

Additionally, we argue for a second possible reason for such a low result for L5: as mentioned above, this item was taken directly from Russel (1996) shortened loneliness scale, which was carried out in Portugal and thereby also with non-native English speakers. Therefore, we argue there might have been a different interpretation of the term ‘withdrawn’ that is conceptualised in a different way by our sample.

In the altruistic volunteer motivations, we chose to leave out VTA5: ‘I want to immerse myself in the local culture’, as the factor loading has a value of -0.082, which indicates the negative correlation with this latent variable. We hypothesise that this result comes from the idea that even though some volunteer tourists contend that “cultural immersion was a strong objective” for them to travel with the purpose (Brown, 2005), it is still not qualified for them as an altruistic motive to volunteer during tourism. Thus, we disregard this item (and offer it for future research endeavours) as not belonging to the altruistic volunteer motivations construct.

The last item we decided to leave out, VTE6, was initially put under egoistic volunteer motivations: ‘I want to learn valuable life skills’. Halpenny and Caissie (2003) identified that the primary motivation for their sample respondents to participate in Canada’s Volunteer for Nature program was

the possibility to acquire skills and knowledge. In Coghlan and Fennell's (2009) review paper, they qualify this item as 'egoistic'. However, our research shows only 0.466 correlation of this item with the egoistic volunteer motivations construct, therefore we consider this relation to be not strong enough. The reason for this result, we hypothesise, might be that acquisition of valuable life skills is not seen as egoistic nor altruistic. It is not seen as something that benefits the person before the others (as we defined being 'egoistic' earlier - a 'worldview of a person who puts his or her own needs and wants in front of other people's needs and wants'). We admit that this wording ('learn valuable life skills') might sound positive for some respondents, therefore they would not consider this as a 'bad' egoistic motivation. Additionally, the question might also not have worked, as the participants might not know what kinds of valuable life skills they could learn during a volunteer holiday if they had never been on one.

As stated earlier, both questions were taken from Ooi and Laing (2010), and should therefore be at acceptable level, but as they used 31 items to define altruistic and egoistic motives, we can assume that by taking only chosen 8 items we are not able to holistically capture the constructs well enough. As our SEM analysis revealed, the two constructs (altruistic and egoistic motivations) were not different enough from each other.

We would like to point out another interesting finding for the conducted analysis. We noticed that there are two other items that did not score high, one from each motivation construct, i.e. the altruistic item VTA1 - 'It is a meaningful thing to do' (factor loading of 0.558) and the egoistic item VTE7 'I want to gain valuable experience for my CV' (factor loading of 0.549). We hypothesise that the reason for the first item VTA1 not strongly correlating with the altruistic motivation construct is that it is a very generic, abstract and possibly even 'too emotional'. The low correlation of the VTE7 item might come from the general view that gaining experience for boosting one's own CV is seen as 'not humble' and even unrelated to volunteering. We speculate that not every participant linked the skills they could acquire for their CV with the ones they could gain volunteering. We hypothesise that the former are usually assumed to be related to for example business, profession, IT qualifications (so-called 'hard skills'); while the latter are related to so-called 'soft skills' such as communication, rapport, empathic qualifications. Nevertheless, we would encourage future research to build up on our findings and search for better, more accurate and representational items behind altruistic and egoistic volunteer motivations.

Results of PLS analysis			
Constructs / items	Factor loading	Composite reliability	Average Variance Extracted
Loneliness (Neto, 2014)		.854	.541
L1	.640		
L2	.744		
L3	.811		
L4	.807		
L6	.659		
Altruistic motives (Ooi & Laing, 2010)		.749	.506
VTA1	.558		
VTA2	.848		
VTA8	.698		
Egoistic motives (Ooi & Laing, 2010)		.726	0.474
VTE3	.727		
VTE4	.769		
VTE7	.549		

Table 5. Results of PLS-SEM analysis.

To note, we are aware that lower factor loadings frequently occur for newly established scales, which is the case in the current research (Hulland, 1999). It is therefore suggested that while deciding to remove the items with the loadings between 0.4 and 0.7, the researchers should check if such removal improves the average variance extracted, which is exactly the case in our research. To conclude, we cleaned the model from the items that had non-acceptable low levels of factor loadings. The final model results are represented in Figure 8.

Implications of scale purification for the validity, reliability and parsimony

Buckingham (1921) conceptualises validity of the scales as “the extent to which [scales] measure what they purport to measure” (Buckingham, 1921, p. 274). Because our research follows the realist ontology (as opposed to the relativist one), we evaluate the items that represent our scales on their ability to arguably accurately represent the constructs they were designed to represent (Borsboom, Mellenbergh & van Heerden, 2004). Therefore, specifically, the validity of the scale shows if the factors have an impact on the measurements (variables) being theoretically (i.e. semantically and

meaningfully) related. We provided our argumentation for the questionable meaning of those items that were most ambiguous and decided to leave them out of the scale. Consequently, the items that were left within the scales are deemed as representative of the respective constructs. Thus, we can conclude that our scales are now valid.

According to Mellenbergh (1996), the quality of reliability refers to the correctness of the data (measurement). Such a quality is tested rather with statistical approach, i.e. looking at the required correlation between the attributes and respective constructs. As mentioned earlier, Hair et al. (1998) affirm that in order to be valid, the items of the scale should score 0.5 or higher. Therefore, as described, we excluded all the items (L5, VTA5, VTE6) that were not highly correlated with the respective constructs.

Lastly, we applied the definition of parsimony given by Wieland et al. (2018, p. 3348), as “the ratio between the amount of data (statistical criteria) or information (judgmental criteria) that is used for measurement and the complexity of the construct to be measured”. In other words, providing parsimony for the scale, the researcher aims to provide just enough items to capture the possible multiple meanings of the construct they are researching (Wieland et al., 2018). For the loneliness construct, as discussed, we used the existing validated research that provided the statistical evidence of the parsimony of the 6 item UCLA scale (Neto, 2014). However, for the constructs of altruistic and egoistic motivations, during our literature review we did not find any guidelines as to how many items are just enough to cover the multi-faceted nature of the constructs. Therefore, we were guided by the review paper by Coghlan and Fennell (2009), as noted in the previous sections, which suggested the main recurring motivations throughout the field of volunteer tourism research. Thus, we took the most mentioned motivations, aiming to cover over ~95% of motivations mentioned by the respondents in various research papers. Additionally, we were inclined to provide parsimony for our scales in order to save time of our respondents during the survey, as discussed in sections on measures and the questionnaire design. Yet, we contend, that in our strive to shorten the scales for motivation variables we made them too narrow, which is revealed in the section below. Thus, for future research we advise to increase the number of items that represent altruistic and egoistic motivations.

4.3 PLS-SEM application

To assess the results of our model, as discussed in the previous theoretical part of this chapter, we analysed the following measures: internal consistency (specifically Cronbach's alpha and composite reliability), convergent validity (AVE) and discriminant validity (specifically Fornell-Larcker criterion) (Hair et al., 2017).

Internal consistency

Internal consistency is usually analysed with Cronbach's alpha, as it shows the estimation of the reliability on the basis of correlations between the observed variables. Looking at our results (Figure 7), we notice that the value of Cronbach's alpha for both motivation constructs is low. This indicates the estimated low reliability of correlation between the items, which is in line with our observations during the scale purification procedure. We noticed that one of the items for both motivational constructs has a relatively low, borderline correlation with the construct (namely VTA1 with altruistic motivations construct and VTE7 with egoistic motivations construct). Yet, we would argue for deprioritisation of Cronbach's alpha measure for our analysis, as, according to Hair et al. (2017, p. 111), this measure considers that "all indicators are equally reliable", meaning "have equal outer loadings on the construct". Moreover, Cronbach's alpha is very sensitive towards the number of items within the scale (Hair et al., 2017), and, as we have only 3 items within our constructs, we can see that it definitely underestimates the internal consistency we are looking at, being a very conservative measure in our case. Therefore, we argue that in our analysis, the Cronbach's alpha displays limitations for assessment of internal validity. Thus, we turn to another measure of the internal consistency – composite reliability – which is more pertinent from a technical standpoint (Hair et al., 2017).

Composite reliability is calculated "using the item factor loadings and uniqueness from a factor analysis" (Padilla & Divers, 2015). As stated by Hair et al. (2017) composite reliability takes outer loadings of the observed indicator variables into consideration. The composite reliability takes values between 0 and 1; the higher the value, the higher the reliability level (Hair et al., 2017). For our loneliness construct we observe a composite reliability of 0.854, which is a very satisfying value. To note, the Cronbach's alpha measure of loneliness construct has shown a good result with value of 0.818. For the altruistic motives construct we observe a composite reliability value of 0.749 and for the egoistic motives construct, the value of 0.726. To validate if these results are high enough to claim

good composite reliability, we followed Hair et al. (2017) guidelines, where all values above 0.7 are considered as acceptable. To note, the composite reliability of loneliness construct is above 0.8, which is usually a sign of a good value for more advanced stages of the research.

We must note that while Cronbach's alpha is considered a conservative measurement with a tendency to underestimate the reliability values, the composite reliability measure tends to overestimate these values according to Hair et al. (2017). Thus, we argue that it makes more sense to look at both measures and consider both advantages and disadvantages. As a result of our analysis and discussion, in our research, since Cronbach's alpha "is sensitive to the number of used scale items" (Kock, Josiassen, Assaf, Karpen & Farrelly, 2019), we deem it not an appropriate measure of internal consistency due to our small amount of measured items. Thus, we decide to prioritise the measure of composite reliability. Yet, we contend that both measures of internal consistency did not score high enough for motivation variables, therefore we conclude that internal consistency of these two variables is borderline acceptable, while the loneliness construct has a satisfying high value.

Convergent validity

Convergent validity is the degree to which the items of the constructs correlate with other items of the same construct. In order to assess the convergent validity, we looked at the average variance extracted (Hair et al., 2017). The average variance extracted (AVE) is a common measure defined by Hair et al. (2017, p. 114) as "the grand mean value of the squared loadings of the indicators associated with the construct", which means that the model sums up the squared outer loadings of the items of the construct they belong to and divides this value by the number of items. As a rule, average variance extracted above 0.5 shows that the construct accounts for over half the variance of the items belonging to it (Hair et al., 2017). The AVE value for the loneliness construct is 0.541, so it is just above a satisfactory level, and the same goes for the value for the altruistic motives construct, which is 0.506. However, the egoistic motives construct is just below 0.5 with a value of 0.474, which indicates that slightly less variance of its items is explained by this construct, and, consequently, more variance is left in the items' error. To conclude, as all three constructs have the AVE value very close to 0.5, we argue that all three constructs display the convergent validity at the borderline acceptable level (Hair et al., 2017).

Discriminant validity

According to Hair et al. (2017), the discriminant validity explains to what extent the constructs differentiate between themselves within the model. In other words, discriminant validity explains how unique the construct within the model is and how well it captures a particular concept which is not represented by the other constructs. Therefore, the discriminant validity of the model is established when the variables correlate stronger with their items than with the other variables.

To assess the discriminant validity, we used the Fornell-Larcker criterion, which “compares the square root of the AVE values with the latent variable correlations” (Hair et al., 2017, p. 115-116). As noted above, the main principle of this criterion holds that any construct to a greater extent shares the variance with this construct’s factors, rather than with other constructs. From the table in Figure 6 we can see that AVR for Latent Variable 2 (Altruistic) is 0.506, the square root of which is 0.711, while the correlation to the Latent Variable 1 is -0.199 (graphic depiction in Figure 8). Comparing these two numbers, we see that the square root of AVE is greater than correlation to Latent Variable 1. Thus, we conclude that the discriminant validity is established for the Latent Variable 2 (Hair et al., 2017). Next, we repeat the procedure with the Latent Variable 3. We calculate that the square root of AVE (0.474) is 0.688, which is greater than the correlation to Latent Variable 1 of -0.120. Therefore, the discriminant validity is established for the Latent Variable 3 as well. Thus, both Latent Variables 2 and 3 share more variance with their respective items rather than with the Latent Variable 1, which means that all three variables are different according to both conceptual and empirical standards; thus, discriminant validity for the model is established.

Internal Consistency, Convergent Validity and Discriminant Validity				
Constructs	Cronbach’s Alpha	Composite Reliability	Average Variance Extracted (AVE)	Fornell-Larcker Criterion
Latent Variable 1 (Loneliness)	0.818	0.854	0.541	0.736
Latent Variable 2 (Altruistic)	0.531	0.749	0.506	-0.199
Latent Variable 3 (Egoistic)	0.425	0.726	0.474	-0.120

Table 6. Internal Consistency, Convergent Validity and Discriminant Validity.

To conclude, we assessed all the necessary parameters of our conceptual model, specifically internal consistency (Cronbach's alpha and composite reliability), convergent validity (AVE) and discriminant validity (specifically Fornell-Larcker criterion). We have found that the internal consistency of motivation variables is borderline acceptable, while the loneliness construct has a satisfying high value. Moreover, three constructs display the convergent validity at the borderline acceptable level, while the discriminant validity for the model is established. Therefore, we conclude that the overall result of our SEM analysis indicates that the model evaluation criteria were borderline but met, meaning that our developed model included motivation variables which were not represented by their factors to a high degree. As discussed, we could have expected such results, as the scales we took for these variables were shortened versions of the scale by Ooi and Laing (2010), which were not statistically validated before.

4.4 Independent Samples t-test

Regardless of the fact that the SME analysis uncovered imperfection of our model, we decided to perform additional analysis to further validate the results. The Independent samples t-test is designed for the comparison of the means between the two independent groups of respondents and allows to assess the statistically significant difference between the mean results of these groups for chosen variables. To note, such test can compare the means of two groups only. ANOVA analysis is used in cases where more than two groups are to be compared.

Statistical significance

The test on statistical significance of the difference between the mean results of the compared groups in this research shows if groups have significantly different results on a specific variable. We were able to test the statistical significance, as our sampling was made using the probability sampling technique (which is a necessary condition for the statistical significance test). Specifically, the participants within our sample were selected randomly through snowball sampling. We do not claim our sample to be fully representative of the whole population, as we selected only students. Therefore, our sample is somewhat under-representative (Bryman, 2012). However, we provided that any relationship between individuals of both samples do not exist, meaning that respondents of both groups were assigned to only one group and were not able to affect each other during the experiment. The future research, nonetheless, could benefit from improving our research setup, and test it for the larger representative groups to provide higher validity and further, decrease sampling error.

The t-test is used in the current thesis to assess the statistical difference between the means of two groups received cold or warm cup primes. There are two types of variables that were analysed within the test: independent variable (the grouping variable) - in our case QT (question on temperature) and the dependant variables – we looked at the test variables of loneliness, altruistic and egoistic motives, intent to donate and newsletter email subscription. The analysis was conducted using SPSS software. To note, we decided to include the actual tables in the text of the thesis, not in the Appendix, as we argue that this is more convenient for the reader to follow the analysis step by step without referring to the end of the thesis.

Table 7 provides the overview of the means for two groups regarding the loneliness question: both individual items of the construct (L1-L6) as well as the compound variable with the sum of the individual items (LSUM). To note, while creating the compound variable we assume the weight of each item to be equal, therefore all the weights are equal to 1. The top-level visual comparison of the means indicates that there is not much difference between the two groups for all the items compared. However, we must check the statistically significant difference to be sure if there is any divergence between groups in our experiment.

To analyse the difference of means, we must initially check the homogeneity of variance (SPSS Tutorials, 2018). If the variance is homogenous, it means that the variance within both groups of the model is the same. To check the homogeneity of variance, SPSS includes the Levene's Test (Table 8). The rule of interpretation of the value under Levene's Test leads to the conclusion that the variances of the groups are not the same if 'Sig.' value is less than 0.05 (SPSS Tutorials, 2018).

In our analysis we observed that all the 'Sig' values (which are p-values that correspond to this test statistic) for all items under the loneliness construct are higher than 0.05, except for the item L2, where the value for 'Sig' is 0.012, which means that equal variances are not assumed for L2, while assumed for the rest of variables in the table. Therefore, we use the respective rows for the interpretation of the significance of mean difference (SPSS Tutorials, 2018) and move to the second part of the table with the results of t-test for Equality of Means (Table 8).

Proceeding to the actual t-test, we observe that the p-values (denoted as 'Sig. (2-tailed)') for all the items as well as for the compound variable are higher than 0.05 (our chosen significance level). Hereby we can conclude that the mean loneliness scores (Table 7) are not significantly different for both groups tested (SPSS Tutorials, 2018). This result, obviously, contradicts the expected results

based on our literature review. Therefore, we included the detailed description of our argumentation, conclusions and suggestions regarding such a result in later chapters.

Group Statistics for loneliness					
Loneliness	Temperature prime	N	Mean	Std. Deviation	Std. Error Mean
L1	Warm	36	2,33	0,717	0,120
	Cold	39	2,36	0,811	0,130
L2	Warm	36	1,42	0,649	0,108
	Cold	39	1,23	0,485	0,078
L3	Warm	36	2,11	0,667	0,111
	Cold	39	2,03	0,743	0,119
L4	Warm	36	2,08	0,841	0,140
	Cold	39	1,95	0,793	0,127
L5	Warm	36	2,19	0,749	0,125
	Cold	39	1,87	0,732	0,117
L6	Warm	36	2,31	0,889	0,148
	Cold	39	2,28	0,887	0,142
LSUM	Warm	36	12,44	3,282	0,547
	Cold	39	11,72	3,494	0,559

Table 7. Group statistics of means between two groups for the loneliness variable.

Independent Samples Test for loneliness										
Loneliness		Levene's Test for Equality of Variances				t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
L1	Equal variances assumed	0,561	0,456	-0,145	73	0,885	-0,026	0,177	-0,379	0,328
	Equal variances not assumed			-0,145	72,875	0,885	-0,026	0,176	-0,377	0,326
L2	Equal variances assumed	6,653	0,012	1,412	73	0,162	0,186	0,132	-0,076	0,448
	Equal variances not assumed			1,396	64,537	0,167	0,186	0,133	-0,080	0,452
L3	Equal variances assumed	0,004	0,950	0,523	73	0,603	0,085	0,163	-0,240	0,411
	Equal variances not assumed			0,525	72,946	0,601	0,085	0,163	-0,239	0,410
L4	Equal variances assumed	0,420	0,519	0,713	73	0,478	0,135	0,189	-0,241	0,511
	Equal variances not assumed			0,712	71,605	0,479	0,135	0,189	-0,242	0,512
L5	Equal variances assumed	0,267	0,607	1,886	73	0,063	0,323	0,171	-0,018	0,664
	Equal variances not assumed			1,884	72,215	0,064	0,323	0,171	-0,019	0,664
L6	Equal variances assumed	0,045	0,832	0,115	73	0,909	0,024	0,205	-0,385	0,432
	Equal variances not assumed			0,115	72,500	0,909	0,024	0,205	-0,386	0,433
LSUM	Equal variances assumed	0,000	0,986	0,926	73	0,357	0,726	0,784	-0,837	2,290
	Equal variances not assumed			0,929	72,975	0,356	0,726	0,782	-0,833	2,286

Table 8. Independent samples t-test between two groups for the loneliness variable.

We proceeded to analyse the rest of the variables in the same manner and here we include the shortened description of the steps (SPSS Tutorials, 2018). Analysing the means for the variables of altruistic and egoistic motivations we observed that the values from the Levene's Test (See Table 10) for all the items as well as compound motivation variables are higher than 0.05, which means that equal variances are assumed for all the variables in the table (SPSS Tutorials, 2018). Next, looking at the p-value for the t-test for Equality of Means ('Sig. (2-tailed)'), Table 10, we note that all of them are higher than our chosen significance level of 0.05. This means that there is no significant difference in mean values for altruistic and egoistic motivations (See Table 9) for both groups tested (SPSS Tutorials, 2018).

Lastly, we analysed the additional variables related to donation intentions including the question on the amount of possible donation and email newsletter subscription. In the same manner as previously, we analysed the Levene's Test values first (See Table 12): for all the variables the value is lower than 0.05, which implies that the equal variances in the two groups are assumed (SPSS Tutorials, 2018). Further, proceeding to the t-test for Equality of Means (See Table 12), we note that the p-values for all variables are above 0.05. As mentioned above, this means that the difference in the means (See Table 11) for both groups are not significantly different for the variables tested (SPSS Tutorials, 2018).

Group Statistics for altruistic and egoistic motivations					
VTA = Altruistic VTE = Egoistic	Temperature prime	N	Mean	Std. Deviation	Std. Error Mean
VTA1	Warm	36	3,58	0,841	0,140
	Cold	39	3,49	0,970	0,155
VTA2	Warm	36	3,64	0,867	0,144
	Cold	39	3,62	0,815	0,130
VTA5	Warm	36	4,31	0,786	0,131
	Cold	39	4,08	0,807	0,129
VTA8	Warm	36	3,56	0,969	0,162
	Cold	39	3,59	0,751	0,120
VTASUM	Warm	36	15,08	2,322	0,387
	Cold	39	14,77	2,206	0,353
VTE3	Warm	36	3,72	0,815	0,136
	Cold	39	3,85	0,904	0,145
VTE4	Warm	36	4,22	0,722	0,120
	Cold	39	4,26	0,751	0,120
VTE6	Warm	36	4,08	0,841	0,140
	Cold	39	3,87	0,801	0,128
VTE7	Warm	36	3,58	1,025	0,171
	Cold	39	3,56	1,021	0,163
VTESUM	Warm	36	15,61	2,060	0,343
	Cold	39	15,54	2,480	0,397

Table 9. Group statistics of means between two groups for the altruistic and egoistic motivations variables.

Independent Samples Test for altruistic and egoistic motivations										
VTA = Altruistic VTE = Egoistic		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2- tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
VTA1	Equal variances assumed	2,192	0,143	0,457	73	0,649	0,096	0,210	-0,323	0,515
	Equal variances not assumed			0,460	72,727	0,647	0,096	0,209	-0,321	0,513
VTA2	Equal variances assumed	0,114	0,736	0,121	73	0,904	0,024	0,194	-0,364	0,411
	Equal variances not assumed			0,121	71,540	0,904	0,024	0,195	-0,365	0,412
VTA5	Equal variances assumed	1,227	0,272	1,241	73	0,219	0,229	0,184	-0,139	0,596
	Equal variances not assumed			1,242	72,782	0,218	0,229	0,184	-0,138	0,596
VTA8	Equal variances assumed	1,985	0,163	-0,171	73	0,864	-0,034	0,199	-0,432	0,363
	Equal variances not assumed			-0,170	65,899	0,866	-0,034	0,201	-0,436	0,368
VTASUM	Equal variances assumed	0,097	0,756	0,601	73	0,550	0,314	0,523	-0,728	1,356
	Equal variances not assumed			0,599	71,744	0,551	0,314	0,524	-0,731	1,359
VTE3	Equal variances assumed	0,215	0,644	-0,622	73	0,536	-0,124	0,199	-0,521	0,273
	Equal variances not assumed			-0,624	72,960	0,534	-0,124	0,198	-0,520	0,272
VTE4	Equal variances assumed	0,009	0,924	-0,201	73	0,842	-0,034	0,170	-0,374	0,305
	Equal variances not assumed			-0,201	72,877	0,841	-0,034	0,170	-0,373	0,305
VTE6	Equal variances assumed	0,469	0,495	1,116	73	0,268	0,212	0,190	-0,166	0,589
	Equal variances not assumed			1,114	71,785	0,269	0,212	0,190	-0,167	0,590
VTE7	Equal variances assumed	0,000	0,990	0,081	73	0,935	0,019	0,236	-0,452	0,490
	Equal variances not assumed			0,081	72,476	0,935	0,019	0,236	-0,452	0,490
VTESUM	Equal variances assumed	0,658	0,420	0,137	73	0,891	0,073	0,529	-0,981	1,127
	Equal variances not assumed			0,138	72,228	0,890	0,073	0,525	-0,974	1,119

Table 10. Independent samples t-test between two groups for the altruistic and egoistic motivations variables.

Group Statistics for donating					
Donating	Temperature prime	N	Mean	Std. Deviation	Std. Error Mean
QD	Warm	36	4,72	0,454	0,076
	Cold	39	4,67	0,478	0,076
QDM	Warm	36	1,56	1,132	0,189
	Cold	39	1,46	0,854	0,137
QNL	Warm	36	1,86	0,351	0,058
	Cold	39	1,79	0,409	0,066

Table 11. Group statistics of means between two groups for the donating variables.

Independent Samples Test for donating										
Donating		Levene's Test for Equality of Variances				t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
QD	Equal variances assumed	1,068	0,305	0,515	73	0,608	0,056	0,108	-0,159	0,270
	Equal variances not assumed			0,516	72,929	0,607	0,056	0,108	-0,159	0,270
QDM	Equal variances assumed	0,594	0,444	0,408	73	0,685	0,094	0,230	-0,365	0,553
	Equal variances not assumed			0,403	64,899	0,688	0,094	0,233	-0,371	0,559
QNL	Equal variances assumed	2,315	0,132	0,750	73	0,456	0,066	0,088	-0,110	0,242
	Equal variances not assumed			0,754	72,620	0,453	0,066	0,088	-0,109	0,241

Table 12. Independent samples t-test for the donating variables.

As we have already stated above, the results of the conducted Independent Samples t-test were not satisfactory and showed no significant difference in the mean performance on the vast majority of the variables. Therefore, we are not able to conclude if our developed hypotheses are to be accepted or rejected. The result of the experiment was supposed to be in line with the current literature, but for some reason our experiment yielded the opposite outcome. We discuss our ideas for the possible reasons of such discrepancy in the further sections of discussion and future research.

4.5 Results

In this section the results from the above data analysis are summarised along with the insights from research papers within the field of embodied cognition related to the impact of ambient temperature on cognition and tourism.

The overall result of our SEM analysis indicated that our developed model included motivation variables which were not accurately enough represented by their factors. Moreover, there was no statistically significant difference between the two groups that were offered a cold or a warm cup. We believe there are two primary reasons (which worked alternatively or cumulatively) for such a result which goes against the expected outcome: 1) possibly we had a biased and too small sample size of only 75 respondents (after the exclusion of outliers), consisting predominantly of young Danish students; 2) possibly the environment in which our respondents were acting during the recruitment and the experiment made them feel too much 'affiliated', thus the cold prime of the cup was not enough to make them feel lonely. Specifically, we assume that because the vast majority of the respondents were recruited during the group work at the university campus, they felt too much belonging to, too affiliated with their peers. Additionally, we assume that we, the experiment conductors, could have affected them in an affiliative way as well, as we were trying to be nice and polite while asking them to take part in our research.

Specifically, we suggest that the reason for the experiment outcome to be the opposite of what was expected is the baseline of the respondents' psychological state, which, we contend, was initially not neutral but elevated for the majority of the participants. Since the experiment conductors talked to all the participants before going into the lab, all participants felt welcome, friendly and uplifted. Also, they were all recruited in Nexus (the student bar at CBS university campus), where most of them sat together with friends during a regular weekday morning or early afternoon. The takeaway of our experiment is that the psychological baseline should always be taken into consideration, because, as has been demonstrated, the cold temperature prime by holding a cold cup cannot affect respondents enough when they feel too affiliated before the experiment.

The outcome of the research could not provide useful results for the volunteer tourism industry, as the first link between the temperature prime and loneliness did not show any statistical difference for two groups. Besides this, we discovered that more than 4 items per variable should be used to describe

the motivations to volunteer, which of course creates a longer questionnaire and potentially rules out some respondents due to the time it takes to answer.

Moreover, we are convinced that the consideration of the respondents' baseline state is crucial for the success of the experiment. We strongly encourage future research to elaborate on this idea and test what is actually the threshold of the embodied cognition effect on respondents' behaviour. Additionally, we advise future researchers within the field to take the respondents' psychological baseline state into consideration during the experiments.

Our research also suggested that 20 out of 75 participants chose to donate money instead of volunteering in person. A new question then rises here: is it more altruistic to 'do good' by donating time instead of money, if the benefits for the project are perceived as same? We also asked if participants would be willing to share their email address to receive the newsletter on the latest volunteer touristic projects. By providing their email they were tested on actual behaviour towards engagement in volunteer tourism and not only their intent to do so. The results here show us that 13 out of 75 participants were more willing to actively engage in volunteering as they provided their email in the questionnaire. Since there was no difference between the two groups (warm vs. cold) we cannot provide a discussion on why some participants chose to donate vs. engage in volunteer tourism. Yet, we can conclude that more participants chose to donate their money rather than giving their email, which means that donating money is seen as an easier action compared to the commitment to receive the emails for possible future participation.

4.6 Reflections on the experimental design

When it comes to design of experiments, there are a lot of areas and pinpoints that could potentially threaten the successful execution and affect the data.

As mentioned earlier, the current experiment was designed according to the best practices gathered from the similar studies conducted by Williams and Bargh (2008), Bargh and Shalev (2012) and Zhong and Leonardelli (2008). Some problems that could be pointed out are that both the physical and psychological baselines for the participants might have been different, than what we see in the above-mentioned papers. These papers did not measure what emotional state their participants were in when they started the experiment. We cannot possibly know if the participants felt lonely, neutral or affiliated at that moment. In this study, we argue, initially all participants felt affiliated as they were taken from a group of friends. Additionally, we were having conversations with the participants

during the experiment on the way to the lab, thus creating extra feeling of affiliation in participants, which made all participants feel connected to people.

Another issue that could have impacted the results is that all participants had to walk up the stairs to the second floor. According to Ostinelli et al. (2014) respondents who walked up stairs were impacted by an increase in self-worth, which reduced motivation and thereby made respondents perform worse in test. In this case, the self-worth boost might have caused the participants to feel so secure that they would never admit to being or feeling lonely, even if they were. By having a significant self-worth boost, the participants might have felt ashamed to answer how they really felt. Besides, these respondents might have experienced a general decrease in motivation and thereby also in the motivation to volunteer.

There might also have been a chance that the lab room was slightly warmer than the places where the participants were taken from in the first place. Some of these areas might have had an impact on the quality of the research and should be taken into consideration for future studies.

General experimental reliability considerations

The following section includes the discussion of the general measures taken while conducting the experiment to provide reliability and validity of the data. It is important to note that the “unreliable measure can never be valid”, meaning that “reliability is a necessary condition for validity” (Hair et al., 2017, p. 107).

According to Bryman (2012), reliability is concerned with the consistency of the measures within the research. The measure is considered reliable when it provides stability over time, meaning that the data gathered and results for a respondent sample do not change. In other words, the results do not change significantly when the measures are re-taken. Indeed, according to Brace (2018), reliability of the questionnaire means that the answers of the respondents must be consistent over time, which would require them to go through the questionnaire several times. Within the current research we do not have the objective possibility to use the test-retest method to provide the stability of the data. The primary obstacles for this are: lack of reasonable time to gather the same sample, lack of respondents' ID data to contact the exact same respondents. Additionally, some of them would potentially refuse to spend extra time on this research, thus making the sample not identical to the first one. Therefore, in such a case the responses would likely change, as the respondents would be already familiar with the questions, thus would possibly respond differently for various internal reasons (Brace, 2018).

The measure is also considered reliable when it provides internal reliability, meaning that the scales used for measuring particular concepts or variables are consistent throughout the whole research project. According to Bryman this means that “respondents’ scores on any one indicator tend to be related to their scores on the other indicators” (Bryman, 2012, p. 169). Lastly, when it provides external (or inter-observer) reliability, meaning that the raw data is categorised, coded or structured in a consistent way. In other words, the data is classified according to the same rules across the whole data pool.

Brace (2018) argues that, as a rule, the questionnaire data is considered sufficiently reliable if the participants comprehend the questions and are able to provide meaningful relevant answers. In our study, as discussed above, we considered all the questions to be easily understood (the blocks about loneliness and volunteer tourism were taken from the existing research papers).

Specifically, to ensure the reliability of data, several precautions were deemed possible and pertinent (Brace, 2018):

1. The question lengths were minimised, and the English language constructions used were simplified to allow for minimum confusion and ambiguity.
2. We excluded all potentially unfamiliar terminology except for the term ‘volunteer tourism’, which we intentionally did not explain to respondents, because: a) most of respondents were expected to intuitively understand that we mean the tourism that includes volunteer work (only 2 respondents out of 82 noted they could not easily understand the term) and b) giving the official definition (discussed in the literature review section above) would prime them into altruistic conceptualisation, which would distort the data.
3. The questionnaire was designed to retain attention throughout the whole procedure by including the progress bar at the top of each page, providing a new page for each of the question modules, offering different question types (close and open-ended) as well as minimising the amount of questions in general.
4. All respondents filled in the questionnaire on a laptop, as potentially the mobile phone design could distort the data due to different experience with the device. Therefore, we used same laptop for all the respondents. Lastly, all the respondents were given as similar instructions as possible before the commencement of the experiment.

General experimental validity considerations

The validity of the data means that it measures what it was supposed to measure. To ensure the validity of the data gathered, the following measures were taken (Brace, 2018):

1. The questions were taken from the other studies conducted and statistically validated by researchers previously without rephrasing or other changes to ensure that they measure the intended variables.
2. The questions were asked in the specific order so that the responses given to one section would not affect the subsequent responses. Moreover, there were no additional ‘filler’ questions to bind together the sections (for example, some respondents noted that the questions jumped from the cup evaluation, to UCLA, to volunteer tourism topics. However, as discussed above this was designed on purpose to save time of the respondents for this experiment).

When it comes to the analysis performed, there also are several considerations to provide the validity of the results. According to Hair et al. (2017), the main sources of the measurement error in the research within social sciences come from improper or inaccurate wording of the questions. To note, we considered this a potential threat to data validity (thus potential systematic error) in the current research, as our sample is comprised of predominantly non-native English speaker respondents. Therefore, we made sure that the wording we used was simple to understand and as precisely as possible represented what we intended to ask. In our research we used only the traditional ordinal scales (e.g. Likert scale) which has been proven to yield correct results. Moreover, we made sure we accounted for equidistance, meaning that our scales offered the equal amount of answers below and above the neutral answer with the equal ‘semantic distance’ between the items. We secured a correct testing procedure by using multiple sources of information guiding us: from research papers and theoretical books, to statistical manuals and training videos.

As mentioned, it might be difficult to generalise the results, as the respondents of the laboratory experiment were students at CBS, which only represents the younger and lower income population. This thereby makes the results not generalisable to the general population.

When conducting the experiment, we made sure that the temperature in the cups for respondents were almost precisely same every time. For this matter we used a specific cooking thermometer while pouring the water into the cups. Yet, we believe there might still have been inconsistencies between participants, because (as we found out asking them post-experiment) some of them have perceived

the temperature as pleasant while holding the cold cup, which was supposed to trigger the opposite perception. We hypothesise that people might have different skin sensitivity levels. Further, some participants entered the lab holding their own cup of hot coffee (in such a case they were administered a warm cup as a prime to avoid a significant change in temperature, to avoid potential decrease in the validity of results). In this case, the effect of the warm prime might not have been regarded as “equal to neutral” and potentially distort the embodiment effect.

We speculate that effects of the embodied cognition, when applied for the research of temperature, might have been affected by the climate of the respondent’s location. That is people from different countries might perceive the impact of temperature change differently, for example in Scandinavia people are supposed to be more cold-tolerant from their birth. On one hand, they are on average less impacted by the outside temperature drop, while people from more Southern regions would be affected by the temperature drop much more. Therefore, we would expect that it is harder to capture the change in the loneliness perception for Scandinavians compared to Southerners, especially with the very small sample sizes of the experimental groups (as it is in our research). On the other hand, Scandinavians might feel lonelier on average (compared to the people from the Southern regions), as they constantly live in a cold climate, thus being affected by the described embodiment effects (coldness reinforces loneliness) long-term. The less bright light and shorter days with less sun during winter could also have a profound impact on the baseline state that, as we expect, could be different for people in Southern regions. As this topic lies outside of the scope of current research, we note it here as an idea with an offer for future researchers to elaborate on.

Lastly, we would like to note that even though we provided all the above described conditions to ensure high data validity, our analysis revealed that the scales for motivation variables were not extensive enough, and we were not able to consider the psychological baseline, as we briefly introduced earlier. We suspect that the latter weakened our data quality which eventually led to the absent difference in the mean scores of our two groups measured. The more detailed discussion in the importance of the neutral emotion baseline is discussed in the chapter on findings and discussion.

4.7 Chapter conclusions

Current research belongs to the domain of social research using the deductive approach with quantitative research methods. The design included an experiment with a manipulation of a temperature condition within a laboratory setup. Specifically, the primary data collection was made

by administering the questionnaire to the participants while they received a different manipulation of the temperature. The researchers collected the answers through the online platform. In total, eighty-two participants (~50% females) conducted the laboratory experiment using the snowball sampling method, being randomly assigned to the warm and cold condition. During the data processing, seven participants were taken out from the sample due to inferred topic and aims of the experiment.

The questionnaire consisted of several modules: ostensible cup evaluation test to make participants hold the cup, loneliness measurement through the shortened version by Neto (2014) UCLA Loneliness Scale that had been developed by Russell (1996), altruistic and egoistic motivations for volunteer tourism through shortened list from Ooi and Laing (2010) guided by the overview given by Coghlan and Fennell (2009), demographics, and several additional questions to measure intentions and behaviour (donating and newsletter subscription). Lastly, we included qualifiers (two questions about the research topic understanding and the temperature prime).

As the PLS-SEM analysis showed, the model evaluation criteria were borderline met, meaning that our developed model included motivation variables that were not accurately enough represented by their factors. T-test has shown that there was no significant difference between the groups primed with different temperature for all the variables measured, thus we were not able to neither confirm nor deny our hypotheses and therefore to answer our research question. We further suggest that the reason for such null results was due to affiliation with participants during the experiment. Specifically, we are referring to the psychological baseline that was shifted by affiliation.

We also found that more participants were likely to donate their money rather than donate their time when given such an option, which means that giving money is seen as an easier action compared to the commitment to receive the emails for possible future participation in volunteer tourism projects.

To conclude this chapter, we highlight that we followed the correct to the best of our knowledge (based on thorough literature review) procedure during the experiment and data analysis. However, we also point out the overlooked impact of the affiliation between the experiment conductors and participants, which, we argue, provided the null results. In the next chapters we discuss that the issue of psychological baseline has not been introduced within the field of embodied cognition before, therefore we were not able to take it into account during the experiment. We further offer this insight as a methodological contribution of our thesis and possible idea for future research.

5. LIMITATIONS

As we have decided to follow the guidelines and process recommendations for a thesis (Blumberg et al., 2008; Bryman, 2012; Czarniawska, 2014), specifically the best practices for experiment performance, PLS-SEM analysis and results interpretation (Hair et al., 2017), we expect the quality of the thesis to be high. However, any research comes with its limitations, which are discussed in the following section. The limitations of the current research are predominantly methodological. We will not include the repetition of the discussion on the shortened scales for motivation variables, as this has been provided above.

As discussed, H1 and H3 are both concerned with analysis of the link between cold temperature and feeling of loneliness, where H1 deals with the altruistic motive behind volunteer tourism, and H3 deals with the egoistic motive. On the other hand, H2 and H4 are concerned with the analysis of the link between warm temperature and feeling of decreased loneliness, where H2 deals with the altruistic motive behind volunteer tourism, and H4 deals with the egoistic motive. Therefore, one of the limitations of this study is the fact that we could consider only one factor, or precisely one pair of factors - altruistic and egoistic motivations behind volunteer tourism. Thus, we are not able to assess if the state of loneliness in our model can lead to a change in the volunteer tourism participation – it can only lead to a change in the motivation to participate.

Our research has followed the quantitative approach, which enabled us to test the answers to our questions statistically on the aggregate level. Therefore, we were able to answer our question “what is happening in our model”. In case we would use the qualitative research, we would be able to answer the question “why is it happening in our model” and ask participants directly for their thoughts on the volunteer tourism motivations. In such a case, the research question of the study would ask “why or when people use egoistic vs. altruistic motives while deciding to participate in volunteer tourism”. The limitation of our study is therefore the test of the researchers’ hypothesis of the phenomena of volunteer tourism through types of motivations and not the research of other potential factors impacting volunteer tourism participation (e.g. attitudes or beliefs).

Another limitation was that in the questionnaire we did not provide the precise definition of the term ‘volunteer tourism’, which could have made some respondents unsure about the questions asked. Potentially, they might therefore not have answered what they really would if they had known precisely how to define this concept. We explained the reasoning behind the choice of not including

the definition in the earlier section on the measurements. To note, we asked all the participants upon the experiment if there was anything unclear for them in the questionnaire. Only 2 respondents said they hesitated to answer the questions on volunteer tourism, since they did not clearly understand what the term ‘volunteer tourism’ meant. As described, it allowed to avoid priming of the respondents, but limited our understanding of how well they are familiar with the concept, if familiar at all.

6. FINDINGS AND DISCUSSION

This chapter provides the summary and discussion of the findings we were able to derive from the conducted research. Furthermore, it brings in the literature gathered from the research within the fields of embodied cognition, volunteer tourism, evolutionary psychology and biology. This provides an overview on the topic from all mentioned areas of the research field that could shed light on our current research question.

As Figure 8 shows, the items on the loneliness scale correlated with the loneliness variable (latent variable 1 - LV1) to a greater extent compared to respective items behind the altruistic and egoistic motive variables (LV2 and LV3 respectively). This suggests that the loneliness scale measured the loneliness concept well, while the items behind the respective motive variables were not very representative of altruistic and egoistic concepts. As discussed earlier, this was an expected result, as the loneliness scale was taken from the validated research (Neto, 2014), while the scales for motives were taken from the extended list of volunteer tourism motivations (Ooi & Laing, 2010), not being validated in the short version we used. Precisely, in the original altruistic vs. egoistic motives scale there were 31 items, while we used only 4 for each motive, 8 in total. We argue that this might have been the reason why the correlations were not as high as for the loneliness scale.

We did not notice any correlation between feeling lonely and having altruistic or egoistic motives for volunteer tourism, so the results do not provide us with any further knowledge on this subject. Therefore, since the loneliness prime did not provide us with any significant results, we cannot analyse the link between feeling cold and desire to volunteer to decrease loneliness. Therefore, we are not able to neither accept nor reject all four established hypotheses.

As stated, the participants in the experiment did not feel lonelier by holding a cold cup vs. holding a warm cup. Moreover, the data shows that statistically there was no significant difference between

mean results of two groups for all variables tested (loneliness, altruistic and egoistic motivations, donation intent, donation amount and newsletter subscription). There can be different reasons behind this finding, but most probably, we argue, this happened due to participants elevated feeling of affiliation due to interaction with peers and experiment conductors. To add, the mean loneliness score for the group primed with the warm cup was directionally higher (yet, insignificantly different) than the mean score for the groups primed with the cold cup. No research to our knowledge can explain this effect, therefore we attribute it to the biased data due to affiliated state. We offer future research to look into this curious phenomenon more closely.

6.1 Reflection on the impact of psychological baseline

The findings from the data highlight that there was no statistically significant difference between the mean scores for the two groups (Tables 7, 9, 11). Such an outcome is an indicator of a low validity of the data as a result of conducting the experiment, which did not take into consideration some confounding variables. In current case we contend that one of the apparent impactful variables was the psychological baseline state of our respondents, which was not neutral before the experiment, but elevated towards feeling affiliated. In the following section we present the detailed discussion of our arguably most important contribution with our experiment.

As we discussed earlier in several sections, we found that the psychological baseline state which is elevated from ‘feeling neutral’ to ‘feeling affiliated’ has many implications. We argue that the contribution we are able to make with our finding on methodology could benefit not only the current state of the industry, but hopefully allow future researchers to benefit from better understanding of the factors, impacting embodiment effects. We also hope that in the future more thorough investigation could provide more precise information on the underlying mechanism, investigating not only the direction of the effect – the more affiliated you feel, the less physical coldness might impact you – but also measuring the exact coefficients that amplify or reduce this effect.

As has been noted in the section on data analysis, the results of the experiment have not provided the answers to the research question as was expected. Specifically, there was no significant difference found between the groups exposed to cold and warm cup primes on their state of loneliness. This result, as discussed, goes against the previous extant research done within the field of embodied cognition, which suggests that the cold prime leads to the increase in the feeling of loneliness (e.g. Bargh & Shalev (2012)). Such an effect has been found to be substantiated by the research from

evolutionary psychology (e.g. study on baby monkeys by Harlow (1958) as well as from biology, specifically neurophysiology (same structures within the brain were found to be responsible for the feelings as well as temperature perception (Zhang & Risen, 2014). Well known research on hierarchy of needs by Maslow (1943) and the pyramid of fundamental motives by Griskevicius and Kenrick (2013) suggest that loneliness is an undesirable state for humans, therefore they would naturally strive to alleviate it.

Additionally, such null results were not expected as the experiment was conducted with the maximum replication of the previous experiments within the field as well as thorough consideration of possible confounding factors.

We therefore argue that current findings must be taken with the grain of salt and the experiment must be re-done with even more meticulous consideration of the procedure. One of our main ideas as for the experiment failure is the fact that we measured the construct of loneliness using the respondents who were exposed to extremely 'affiliated' environment of the university student cafe (cafe Nexus at CBS). Therefore, we argue, the respondents' baseline state before the experiment was naturally elevated from 'neutral' to 'friendly/affiliated'. To note, it is not possible at this point to understand how much the level of the psychological baseline was elevated, we can only offer that the shift was high enough to counterbalance the cold prime's , effect on loneliness feeling, which was expected due to all the precautions taken during the priming, e.g. the accurately measured temperature of ~14° Celsius, lab setup.

We affirm that the omission of such a factor is a significant flaw of the experiment conduct, as evidently it led to the opposite than expected results. However, we would like to stress that none of the existing research papers that heavily guided current experiment mention even consideration of such a factor. As a result, the greatest emphasis was put on the technical aspects of the experiment procedure and not the aspects of the emotional state of the respondents. Additionally, we argue that it would have been almost impossible to conduct this experiment with better quality taken the constraints, such as respondents' sample, timing and other limited resources that were available for current research, as discussed in the chapter on limitations. Thus, we strongly recommend further research to repeat our experiment with the better sample and implementing all the relevant learnings.

We think that the results we gathered were more interesting than if we would get them as expected, because it allowed us to find a potential moderator of the very well-established relationship between the cold temperature prime and loneliness.

To the extent of our knowledge, no one has ever published any critique on the psychological baseline when conducting embodied cognition experiments, and very little was published on the physiological baseline state (Van Acker et al., 2016). Existing research, reflected upon in the literature review earlier, stresses that the effects of the embodied cognition are very strong and occur fast, which we consider key to understand the effect of the psychological baseline.

Wei et al. (2015) offered a discussion on the aspect of the physiological baseline. In the limitations to their two studies they note the importance to include the control group with the room-temperature condition that they overlooked initially. Yet, they did not address the psychological baseline of their respondents. Wei et al. (2015) also looked into the context of experiments on embodied cognition, where they state that the mechanism of embodied cognition can only be generalised to the specific context analysed and cannot be transferred to other contexts.

Baek and Yoon (2017) state in their research paper that in the second study they decided to improve their results and account for a ‘non-emotional baseline’ introducing a control group in the experiment to make sure their results are generalisable. However, they did not provide an explanation of what they considered a “non-emotional baseline control group” to be, therefore we cannot know what exactly they included in the definition of this baseline (Baek & Yoon, 2017, p. 443).

The results of our current experiment suggest researchers that embodiment does not overtake the cognition by default, they rather co-influence an individual depending on the particular situation. Thus, we offer future researchers to re-do our experiment to validate the obtained results as well as generally pay extra attention to the experiment performance. We contend that the approach by Williams and Bargh (2008) to recruit the experimenter who would guide the respondents to the lab without knowing the goals of the study and with no extra affiliation (in form of e.g. a friendly conversation) would be a significant improvement, which could potentially lead to the change in the final analysis.

6.2 Chapter conclusions

Even though the psychological baseline was not what we initially planned to contribute with, it arguably is valuable for the academic field of embodied cognition. As we discovered, affecting participants' cognition through temperature was not as easily done as anticipated. This finding suggests that the psychological baseline might be one of the key factors to consider while conducting research on embodied affects.

7. IMPLICATIONS

This section provides a discussion on the implications of the current experiment for the tourism industry as well as academic society. The managerial implications are presented to be used by managers of various organisations related to volunteering initiatives as well as tourism to increase the customer wellbeing, employee satisfaction and possibly ROI (or other identified KPIs). The methodological implications of this thesis could be useful for academics and researchers from consumer psychology in general and the embodied cognition field specifically.

7.1 Managerial implications

The main goal of this study was to establish if cold temperature could affect the cognition through embodiment and activate the egoistic motives (Williams & Bargh, 2008) in those consumers who would consider engaging in volunteer tourism. The results of the experiment have shown that there was no statistically significant difference between the groups receiving physically cold or warm primes. Therefore, we cannot conclude that participants have more egoistic (vs. altruistic) motives to engage in volunteer tourism after being primed with cold (vs. warm) temperature. Thus, we cannot provide the managers of the tourism industry with valuable advice coming from the experiment as expected. Yet, it is our opinion that our research provides useful insights for managers of the tourism industry from the academic literature that has been gathered and discussed above.

From the existing research we know that it is important to be aware of the motives that a volunteer might hold (Brown, 2005), as these guiding motives impact the effort they put into the project as well as the goals they expect to achieve. Thus, we argue that it is very relevant and even important for professionals within the volunteer tourism sector to distinguish between the motives in volunteers they recruit. For example, different motives attract skilled and unskilled volunteers and drive different expectations for the work process. The motives can change during the project, impacting volunteers'

productivity, and thus impacting the overall volunteer satisfaction with the project outcome. This in turn can affect their willingness to participate further and spread positive feedback across their network. Understandably, negative feedback often alienates people, who could potentially be very helpful in volunteering projects abroad (e.g. people with special skills or professions, like teachers, doctors, lawyers), making the project goals not completed.

Indeed, it is important for managers, decision makers and other stakeholders of the tourism and leisure sector to take motives into consideration, since they arguably might affect the volunteer's satisfaction with the experience. According to Teng et al. (2015), satisfying experiences provide repeat customers and thereby more revenue for the business.

Consequently, in order to provide managers with a tool to attract the needed volunteers (for their own satisfaction as well as for the success of the project), we aimed at identifying the descriptive attributes (the 8 items behind our 2 volunteer tourism motivation variables: 4 altruistic and 4 egoistic), which would resonate with particular motivation and could be used in the marketing and social campaigns aiming to attract volunteer tourists in the future. For example, if a specific project would benefit from highly skilled people with rather altruistic motive to participate, the marketing managers could get inspired by the attributes from our list, e.g. "It is a meaningful thing to do", "I want to assist the natural environment", "I want to contribute to the places I visit". The attributes can be used in different contexts for various types of advertising and brand communications, for example in social media, for printed advertising campaigns, and brand videos.

We would like to accentuate that, to us, it is very important to consider attracting different volunteers based on their primary motivations. We are convinced that particular projects need different volunteers: for example, any volunteers just in large quantity (e.g. many people with medium strength to build houses for people in the distant communities), or the volunteers who need to be highly qualified (e.g. professional teachers of a certain language or science to teach children in poor regions, doctors or nurses, engineers). In the first case, volunteers could be accepted even when guided by egoistic motivations (like gaining valuable experience for a CV, finding new friends, or just travelling to rare distant natural locations), while for the second type of volunteers must be people who would be guided by altruistic motives to 'donate their time and effort', as the requirements for participation would shy away not qualified people who just want to travel.

This brings to our attention further arguably important point: research shows (Raymon, 2008) that sometimes bringing unqualified volunteers who are just motivated by an idea of having fun holidays in an ‘unusual’ way, could have adverse effects. We argue that such ‘materialistic’ approach could potentially harm the natural environment and local communities and can be detrimental to the effort of qualified volunteers.

On the other hand, we argue that it is possible that in some cases the ‘egoistically’ motivated volunteers could be more helpful, dedicated and committed to the cause compared to altruistic ones, who could have no specific goals nor expectations. For example, a student with an egoistic motive, who wished to spend his/her gap year helping the indigenous community in Australia to benefit his/her CV before entering the job market, could be more interested in meaningful work which brings actual improvement and positive results for the project. Thus, success of the volunteering project would motivate them more than the abstract and quite subjective desire to ‘help others in need’ would. In other words, internal motivation would lead the effort during the project. Additionally, the more they achieve/finish, the more, for example, they can add to their CV. On contrary, volunteers who just wish to ‘contribute to the places that they visit’ might have no clear idea what they are working towards, therefore making them less effective during the project and less attached to the final outcome. In other words, the internal motivation might be too weak to push the effort for the needed results. That is, a volunteer tourist can be more or less productive towards the goal of the project depending on his/her motivation.

Previous and the current research clearly suggest that embodied cognition does not always impact humans to the same degree: previous research states that the effect depends on the context (Wei et al., 2015) and current research shows that it also depends on the psychological state. To note, we encourage further research to look at the other potential moderators and mediators between the physical primes and psychological effects.

In the current research the results have shown that when humans are already feeling highly affiliated, the cold prime (on contrary to the existing research) could not override such elevated psychological state. This provides the evidence that in some cases the cold temperature cannot overrule strong affiliation bonds. Such insight brings our discussion and managerial implications to a whole different industry where people engage in social interactions. Specifically, in the industry of entertainment and leisure, for example in a bar or a club, where almost all drinks are served cold, the waiter/bartender might be perceived as a cold person according to the embodiment effects uncovered by Williams and

Bargh (2012). However, according to our discovery of the overriding impact of the elevated emotional state (i.e. feeling of being affiliated), the customers' affiliation cannot be easily overruled by the cold drinks. Thereby, we argue that this could explain why in a setting of a bar (and similar places) the customers do not feel lonely (nor perceive other people as being more 'cold'), even consuming the cold drinks: the embodiment impact of a cold prime is not strong enough to bring down the elevated affiliation.

Since we contend that our experiment was not conducted properly due to the overlooked importance of the neutral baseline emotional state of the respondents, we encourage future research to replicate our study improving the setup. As noted, we contend that there are limited managerial implication of our experiment for the volunteer tourism industry at this, as we were not able to identify any difference between the groups tested. Thus, we are not able to advise professionals within volunteer tourism industry to target their communication in a certain way to attract volunteers of certain motivation with the attributes that we tested.

Nonetheless, we were able to imply that the results of our discovery have potential to explain the phenomena occurring in other industries, such as entertainment and leisure. We encourage further research to build up on existing research on embodied cognition and current experiment results.

7.2 Methodological contribution

The theoretical contribution to methodology of experiments within social sciences that we are able to make, was not something that was expected at the stage of study design. Nonetheless, we argue that the discovery of the psychological baseline importance, discussed in the previous chapter, might bring useful applicable knowledge for the research within marketing, consumer behaviour, psychology and especially embodied cognition.

We hypothesise that possibly such a baseline has gone below the radar of the researchers, as the evidence for the embodiment effect is very strong, spreading from evolutionary psychology to neuroscience, as discussed earlier. It has therefore possibly been taken for granted that the cognition must be subordinate to such powerful physiological mechanisms that developed for human survival needs (for example, see the research on baby monkeys by Harlow (1958)).

To summarise, we suggest that researchers within social sciences consider taking participants' psychological baseline into consideration before starting their experiments. This is especially relevant

in cases when any type of psychological construct is researched (for example, loneliness, as in the current case). As stated before, we argue that the whole field of embodied cognition can benefit from applying our findings in their research. If the hypothesis of the impact of psychological baseline on the strengths of embodiment effect would be proven in other experiments, we argue that it would be important to validate the experiments published in highly ranked journals by authors such as Williams and Bargh (2008), Zhong and Leonardelli (2008) and IJzerman and Semin (2009).

7.3 Chapter conclusions

This chapter presented the implications of our findings for the stakeholders within the tourism industry as well as academic researchers within consumer psychology, specifically embodied cognition. We offer managers within volunteer tourism industry to increase their understanding of the motivations behind volunteering, as these guiding motives impact the effort, expectations and consequently satisfaction with the experience. Fair understanding of the motivations is also arguably important to attract the needed skilled or unskilled volunteers, which could have a profound impact on the general concept of volunteering, nature and receiving communities.

The methodological contribution of this thesis was not planned beforehand, yet we suggest that researchers within social sciences should consider taking participants' psychological and physiological baseline into consideration before starting their experiments in social sciences.

8. SUGGESTIONS FOR FUTURE RESEARCH

The following section provides the ideas which emerged from the results of this thesis that we assert would be interesting to investigate further.

Typically, in research papers we observe researchers taking numerous things into consideration when conducting their experiments (i.e. various moderators and mediators in their models), particularly establishing various baselines beforehand, but not psychological baselines. For example, Zhang and Risen (2014, p. 968) controlled for “individual differences as well as any differences caused by the manipulation that may not have been due to feelings of coldness”, which indicates that they suspected that other factors (moderators or mediators) could affect the feeling of coldness.

Therefore, for future research our primary recommendation would be to investigate the psychological baseline of the respondents in experiments related to embodied cognition. Our findings

lead us to identification of a bigger research gap than the one we started with. Initially we started identifying the thesis idea by pondering if the effects of embodied cognition would apply in the context of volunteer tourism. While at the end of our data analysis we found ourselves asking if embodied cognition in general affects humans at any psychological state, or if it only affects humans when they are in a specific physiological state. In other words, we hypothesise that the strength of the embodiment effect depends on the initial baseline state.

Additionally, we argue that based on our findings it would be extremely interesting and relevant to re-do our experiment based on the ideas taken from the highly ranked journal articles, like Williams and Bargh (2008) or Bargh and Shalev (2012) with this new consideration of the psychological baseline state.

Specifically, for future research we suggest the following approach: ideally a between-subjects 2x3 study design, where participants are divided into cold vs. warm temperature condition (e.g. cups, thermo pads, ambient room temperature), and later into three groups considering their different psychological states at the time of the experiment (i.e. lonely, neutral and affiliated). Therefore, half of each group would be primed with cold temperature and the other half with warm temperature to establish if there would be a difference in the results. Based on the literature review and own findings within current research, we offer that the affiliated participants would not feel significantly lonelier after being exposed to the cold temperature prime, whereas the 'lonely group' and possibly the 'neutral one' would show a significant change in their feelings of loneliness. Thereby we offer future research to focus on analysing the psychological baseline before doing an embodiment experiment.

Further research could apply the new psychological baseline findings to various industries and contexts within consumer research field. Specifically, it would be interesting to see whether there is an impact of the psychological baseline state on the self-regulation processes (Lee et al., 2014), and the cumulative vs. compensatory effects of embodied cognition (Zhang & Risen, 2014).

Next, we argue that it would still be relevant to analyse if there is a desire to alter the lonely state with engagement in volunteering activities, including difference in egoistic vs. altruistic motives behind such activities. Can these motives be primed in any way? Why do people volunteer during their holidays? Would it lead to improved outcome if organisations only used altruistic motivated volunteers? Do motivations really matter at all? We do not know this at the moment; however, it

would be relevant to find out for the tourism industry and for the communities that seek help of volunteers.

Future research might also have a causal study in mind, where it would be interesting to look deeper into why warm temperature is linked with affiliation, and cold temperature is linked with loneliness. As stated earlier, several papers have attempted to explain how warm temperature is linked to affiliation, but there is no clear definition for why this is the case, and if this is the same for cold temperature. On the other hand, the field could also benefit from more knowledge about the link between affiliation and volunteering. Why doing good is linked with affiliation by for example donating money to charity (Lee & Shrum, 2012), even though the giver does not experience social warmth directly? Lastly, it would be beneficial for the field of volunteer tourism to know why volunteers have different motives, and if these motives can be changed.

Future research could benefit from looking into the context of the embodiment effect. As stated by Fay and Maner (2015), the context in which embodiment is being carried out is crucial to the results. For example, some research has found that warm temperature can increase human desire to affiliate (Fay & Maner, 2012; IJzerman et al., 2013; Williams & Bargh, 2008). This provides the grounds for argumentation on why it is important to keep investigating the field and especially the contexts it is applied to.

How fast and for how long the embodiment effect occurs are other open-ended questions, as these have not been answered by any of the above-mentioned researchers. This is why the respondents in our laboratory experiment were asked to hold the cup throughout the whole experiment and we included the ostensible cup evaluation exercise. With these, we intended to make sure the embodiment effect occurred before we asked participants about loneliness and that it lasted until the final questions of about their donation intentions, which leads to the suggestion that future research should analyse how fast it occurs and for how long the effect of embodiment lasts for participants, since this knowledge would be valuable for researchers with embodied cognition.

Another very interesting question has arisen from the semantic analysis of the measured items behind variables within the model. As discussed previously, the analysis of factor loadings has shown that several items are not representative of the respective constructs. As almost all the respondents from the sample were non-native English speakers, we assume that there is a possibility of poor understanding of the meaning behind the items. For example, as discussed, the factor analysis

uncovered the weak representation of loneliness through the item ‘How often do you feel unhappy being so withdrawn?’ We offer that for a non-native English speaker it might be a challenge to understand the meaning of this phrase without any context (which was the case during the experiment).

We would also encourage future research to build up on our findings and search for better, more accurate and representational items behind altruistic and egoistic volunteer motivations. As discussed before, we took only 4 items from a long list for each motivation and eventually needed to leave out one item from each variable as not correlated. We concluded that our scales were not developed satisfactorily, and future researchers could therefore enrich the field by providing more accurate short scales for altruistic and egoistic volunteer motivations.

Further, we extended this idea and came up with the conclusion that possibly the original scale which was used in the research by Ooi and Laing (2010) might have included other ‘not easy to understand’ items. Specifically (however, not included in our scale), the item ‘give back to the less privileged’ is arguably entailing a double notion. As stated by Brown (2005), the idea of volunteers to ‘give back to the community’ is seen as a cornerstone and possibly the strongest altruistic motivation for engagement. The most intuitive understanding of such a phrase would be ‘sharing what you have with others around, as those others belong to the same community as you’. Similar meaning could be intuitively derived from the mentioned scale by Ooi and Laing (2010): ‘share something that you have with those who are less well off’. Therefore, we offer to research the meaning of all the items included in the scales for the native speaker or even translate them to the native language.

On top, we questioned if someone who ‘gives something back to the community/others’ at some point ‘took something from the community’ in first place? We contend that such a play of words might be easily understood on the top level by most respondents. However, there may be a deeper meaning in this metaphor, leading to the formation of undesirable ‘pseudo-egoistic’ motives for some tourists, as they would be reluctant to admit that they would like to engage in volunteer tourism, as that would force them to admit that they took something from community in first place. Thus, we offer this semantic puzzle for possible future research. This gap could potentially be filled through concept development in qualitative research.

9. GENERAL CONCLUSION

To conclude, we refer to literature review combined with our findings and reflect upon the initial goals of this thesis. Current research belongs to the domain of embodied cognition, which holds that sensory information gathered by the body has an effect on the physiological and psychological states of an individual (Barsalou 2008; Lakoff & Johnson 1980; Hung & Labroo, 2011; Krishna, 2012; Lee & Schwarz, 2010).

Current thesis aimed to research if a human body can be affected by the temperature of ambient environment to the extent that it can influence emotional state and consequently change human behaviour. Research shows that loneliness can be primed by physical coldness (physiological route) or through social or imagined coldness (psychological route). Being affected, the body strives to self-regulate and alleviate this negative state by seeking physical or social warmth (through discussed cumulative or compensatory effects).

In recent years, an exponential growth of volunteer tourism has generated a great deal of interest in academic circles. Adding to this, present research provides a deeper insight into the field of embodied cognition, where temperature (cold vs. warm) affects consumer motivations to engage in volunteer tourism. Therefore, our particular idea was to benefit stakeholders within tourism and general society by validating if the cold temperature could prime people to feel lonely and make them strive for the alteration of this negative state through motivation to participate in volunteer tourism. We argue that this could help lonely people by providing a solution for them on how to alleviate the feeling of loneliness and at the same time help communities and nature in need for volunteers. Additionally, we aimed to enrich the academic field through testing the theory if coldness leads to volunteering due to altruistic or egoistic motives. Therefore, our research question was stated as: How does the ambient temperature of the environment surrounding people impact their motives to engage in volunteer tourism?

In order to answer the research question, an experiment was conducted with 82 CBS students, where they were primed with cold or warm temperature and were measured for loneliness and motivations to engage in volunteer tourism. Additionally, we measured their willingness to donate money or provide their email for a volunteer projects newsletter.

We did not find any statically significant difference between the two groups due to the skewed results of the experiment. Specifically, the data was not satisfactorily valid as we did not take into consideration the psychological state of the participants prior to the experiment. Their psychological baseline state was elevated due to affiliation with their friends and conductors of the experiment. To our knowledge, no research paper within embodied cognition discussed this issue before, and consequently we did not take it into account either. Thus, we were not able to reject nor deny our hypotheses, as the statistical analysis did not show any difference in the mean results for our groups due to data validity issue. Further, we were not able to provide an answer to our research question.

As a result, we are not able to provide a conclusion on the motivations for volunteer tourism after the cold prime, nor how ambient temperature of the environment impacts human behaviour in general. However, even though we cannot benefit tourism industry with our findings, we discovered the importance of the baseline for experiment which contributes to the academic field of embodied cognition. Specifically, our data implies that the psychological state has a profound impact on humans and that temperature prime does not always overrule it. We consider this discovery of high methodological and theoretical value for the academic field within embodied cognition and advise future researchers to measure the psychological baseline of their respondents and make sure it is neutral prior to experiments.

As a final conclusion, we argue that this thesis opens up the door for further research on the psychological baseline and its impact on embodied cognition mechanism. Specifically, we hypothesise that the elevated state of affiliation is counteracting the impact of the cold prime, which is novel to the embodied cognition research field. This could explain why in social settings (e.g. bars) people who consume cold drinks do not feel lonely, as opposed to what the embodied cognition research would state. Therefore, we strongly encourage future research to look deeper into the mechanism behind temperature impact on loneliness and affiliation in social settings.

10. REFERENCE LIST

- Ældre sagen (2019). *PRISEN FOR ENSOMHED ER HØJ*. Retrieved from <https://www.aeldresagen.dk/presse/maerkesager/ensomhed/fakta/prisen-for-ensomhed-er-hoej>.
- Agger, S. (2014, june). *Ensomhed koster samfundet 132 millioner*. Retrieved from <https://ekstrabladet.dk/bibliotek/velfair/article4840919.ece>.
- Alexander, Z. (2012). International volunteer tourism experience in South Africa: an investigation into the impact on the tourist. *Journal of Hospitality Marketing & Management*, 21(7), 779-799.
- Amsel, B., Urbach, T., & Kutas, M. (2014). Empirically grounding grounded cognition: The case of color. *NeuroImage*, 99, 149-157.
- Areni, C. S., & Kim, D. (1993). "The influence of background music on shopping behavior: classical versus top-40 music in a wine store", *Advances in Consumer Research*, 20, 336-40.
- Asch, S. E. (1946). Forming impressions of personality. *Journal of Abnormal and Social Psychology*, 41, 258-290.
- Astrachan, C. B., Patel, V. K., & Wanzenried, G. (2014). A comparative study of CB-SEM and PLS-SEM for theory development in family firm research. *Journal of Family Business Strategy*, 5 (1), 116-128.
- Babin, B., Hair, J., & Boles, J. (2008). Publishing Research in Marketing Journals Using Structural Equation Modeling. *Journal of Marketing Theory and Practice*, 16(4), 279-286.
- Baek, E., Choo, H. J., & Lee, S. H. M. (2018). Using warmth as the visual design of a store: Intimacy, relational needs, and approach intentions. *Journal of Business Research*, 88, 91-101.
- Baek, T., & Yoon, S. (2017). Guilt and Shame: Environmental Message Framing Effects. *Journal of Advertising*, 46(3), 440-453.

- Bagozzi, R.P., & Yi, Y. (2012). "Specification, evaluation, and interpretation of structural equation models". *Journal of the Academy of Marketing Science*, 40(1), 8-34.
- Balcetis, E., & Dunning, D. (2007). Cognitive dissonance and the perception of natural environments. *Psychological Science*, 18(10), 917-921.
- Bargh, J., & Shalev, I. (2012). The substitutability of physical and social warmth in daily life. *Emotion*, 12(1), 154-162.
- Bargh, J., & Shalev, I. (2014). On the Association between Loneliness and Physical Warmth-Seeking through Bathing: Reply to Donnellan et al. (2014) and Three Further Replications of Bargh & Shalev (2012) Study 1. *Emotion*, 15(1), 123.
- Barsalou, L. (2008). Grounded Cognition. *Annual Review of Psychology*, 59(1), 617-645.
- Barsalou, L. W. (1999). Perceptual symbol systems. *Behavioral and Brain Sciences*, 22, 577-660.
- Barsalou, L. W., Niedenthal, P. M., Barbey, A. K., & Ruppert, J. A. (2003). Social embodiment. *Psychology of learning and motivation*, 43, 43-92.
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin* 117, 497-529.
- Becker, G. S. (1976). Altruism, Egoism, and Genetic Fitness: Economics and Sociobiology. *Journal of Economic Literature*, 14(3), 817-826.
- Bhalla, M., & Proffitt, D.R. (1999). Visual-motor recalibration in geographical slant perception. *Journal of Experimental Psychology: Human Perception and Performance*, 25, 1076-1096.
- Blumberg, B., Cooper, D. R., & Schindler, P. S. (2008). *Business research methods* (Vol. 2). London: McGraw-Hill Higher Education.
- Borghi, A., & Cimatti, F. (2010). Embodied cognition and beyond: Acting and sensing the body. *Neuropsychologia*, 48(3), 763-773.

- Borsboom, D., Mellenbergh, G.J., & van Heerden, J. (2004). "The concept of validity". *Psychological Review*, 111(4), 1061-1071.
- Bowlby, J. (1969). *Attachment and loss* v. 3 (Vol. 1). Random House.
- Furman, W., & Buhrmester, D. (2009). Methods and measures: The network of relationships inventory: Behavioral systems version. *International Journal of Behavioral Development*, 33, 470-478.
- Brace, I. (2018). *Questionnaire design: How to plan, structure and write survey material for effective market research* (4.th ed.). London: KoganPage.
- Broekemier, G., Marquardt, R., & Gentry, J. (2008). An exploration of happy/sad and liked/disliked music effects on shopping intentions in a women's clothing store service setting. *Journal of Services Marketing*, 22(1), 59-67.
- Brown, S. (2005). Travelling with a purpose: Understanding the motives and benefits of volunteer vacationers. *Current Issues in Tourism*, 8(6), 479-496.
- Brown, S., & Lehto, X. (2005). Travelling with a Purpose: Understanding the Motives and Benefits of Volunteer Vacationers, *Current Issues in Tourism*, 8(6), 479-496.
- Bryman, A. (2012). *Social Research Methods*. Fourth edition. New York: Oxford.
- Buckingham, B.R. (1921). "Intelligence and its measurement: a symposium", *Journal of Educational Psychology*, 12(5), 271-275.
- Cacioppo, J. T., & Patrick, B. (2008). *Loneliness: Human nature and the need for social connection*. New York: W. W. Norton & Company.
- Cacioppo, J., Hawkley, L., Ernst, J., Burleson, M., Berntson, G., Nouriani, B., & Spiegel, D. (2006). Loneliness within a nomological net: An evolutionary perspective. *Journal of Research in Personality*, 40(6), 1054-1085.
- Cacioppo, S., Grippo, A., London, S., Goossens, L., & Cacioppo, J. (2015). Loneliness: Clinical Import and Interventions. *Perspectives on Psychological Science*, 10(2), 238-249.

- Callanan, M., & Thomas, S. (2005). Volunteer tourism: Deconstructing volunteer activities within a dynamic environment. In M. Novelli (Ed.), *Niche tourism: Contemporary issues, trends and cases* (pp. 183–200). Sydney: Elsevier.
- Canham, S. L., Mauro, P., & Kaufmann, C. N. (2015). Alcohol consumption loneliness and mid-and-late-life. *In Conference in drug and alcohol dependence, 146*, 238.
- Centers for Disease Control and Prevention. (2014). Retrieved from <http://www.cdc.gov/>.
- Cheema, A., & Patrick, V. M. (2012). Influence of warm versus cool temperatures on consumer choice: A resource depletion account. *Journal of Marketing Research, 49*, 984–995.
- Coghlan, A. (2005). Towards an understanding of the volunteer tourism experience. Unpublished PhD dissertation, James Cook University, Townsville, Queensland.
- Coghlan, A., & Fennell, D. (2009). Myth or substance: An examination of altruism as the basis of volunteer tourism. *Annals of Leisure Research, 12*(3-4), 377-402.
- Cohen, L., Manion, L., & Morrison, K. (2007). *Research methods in education* (6th Edition). London: Routledge.
- Conrad, F., Couper, M., Tourangeau, R., & Peytchev, A. (2005). Impact of progress feedback on task completion: first impressions matter. *Proceedings of ACM CHI 2005 Conference on Human Factors in Computing Systems, 2*, 1921-1924.
- Conrad, F., Couper, M., Tourangeau, R., & Peytchev, A. (2005). Impact of progress feedback on task completion: First impressions matter. *CHI '05 Extended Abstracts on Human Factors in Computing Systems*, 1921-1924.
- Czarniawska, B. (2014). *Social science research: From field to desk*. London: SAGE Publications.
- DeWall, C. N., Maner, J. K., & Rouby, D. A. (2009). Social exclusion and early-stage interpersonal perception: Selective attention to signs of acceptance following social exclusion. *Journal of Personality and Social Psychology, 96*, 729–741.
- Diamantopoulos, A., Riefler, P., & Roth, K. P. (2008), Advancing formative measurement models, *Journal of Business Research, 61*(12), 1203-1218.

- Dipankar, R., Chien Wei, L., & Ming, C., (2017). The effects of temperature cues on charitable donation. *Journal of Consumer Marketing*. 34, 20-28.
- Durante, K., & Griskevicius, V. (2016). Evolution and consumer behavior. *Current Opinion in Psychology*, 10, 27-32.
- Eerland, A., Guadalupe, T., & Zwaan, R. (2011). Leaning to the Left Makes the Eiffel Tower Seem Smaller. *Psychological Science*, 22(12), 1511-1514.
- Eisenberger, N. I., Lieberman, M. D., & Williams, K. D. (2003). Does rejection hurt? An fMRI study of social exclusion. *Science*, 302(5643), 290-292.
- Elliott, D. (2008). Voluntourism. Retrieved from <http://www.concierge.com/cntraveler/articles/12200>.
- Fay, A. J., & Maner, J. K. (2012). Warmth, spatial proximity, and social attachment: The embodied perception of a social metaphor. *Journal of Experimental Social Psychology*, 48, 1369–1372.
- Fay, A., & Maner, J. (2015). Embodied effects are moderated by situational cues: Warmth, threat, and the desire for affiliation. *British Journal of Social Psychology*, 54(2), 291-305.
- Fay, A., & Maner, J. (2018). Comfortably Warm: A momentary lapse of reaffiliation after exclusion. *Journal of Experimental Psychology: General*, 147(8), 1154-1169.
- Fennell, D. (2006). Evolution in tourism: The theory of reciprocal altruism and tourist-host interactions. *Current Issues in Tourism*, 9(2), 105–124.
- Fiske, S., Cuddy, A., & Glick, P. (2007). Universal dimensions of social cognition: warmth and competence. *Trends in Cognitive Sciences*, 11(2), 77-83.
- Fiske, S., Cuddy, A., & Glick, P. (2007). Warmth and Competence as Universal Dimensions of Social Perception: The Stereotype Content Model and the BIAS Map. *Advances in Experimental Social Psychology*. 40, 61-149.

- Florack, A., Kleber, J., Busch, R., & Stöhr, D. (2014). Detaching the ties of ownership: The effects of hand washing on the exchange of endowed products. *Journal of Consumer Psychology, 24*(2), 284–289.
- Gazley, B. (2001) Volunteer vacationers and what research can tell us about them. *E-Volunteerism* (12).
- Gibson, J. J. (1977). *The theory of affordances*. Hillsdale, USA, 1, 2.
- Gintis, H. (2002). Altruism and emotions. *Behavioral and Brain Sciences, 25*, 258–259.
- Gray, D. E. (2013). *Doing research in the real world*. London: SAGE Publications.
- Gray, N., & Campbell, L. (2007). A decommodified experience? Exploring aesthetic, economic and ethical values for volunteer ecotourism in Costa Rica. *Journal of Sustainable Tourism, 15*(5), 463-482.
- Griskevicius, V., & Kenrick, D. (2013). Fundamental motives: How evolutionary needs influence consumer behavior. *Journal of Consumer Psychology, 23*(3), 372-386.
- Griskevicius, V., & Kenrick, D. (2013). Fundamental motives: How evolutionary needs influence consumer behavior. *Journal of Consumer Psychology, 23*(3), 372-386.
- Guttentag, D. A. (2009). The possible negative impacts of volunteer tourism. *International Journal of Tourism Research, 11*(6), 537-551
- Hahn, A. C., Whitehead, R. D., Albrecht, M., Lefevre, C. E., & Perrett, D. I. (2012). Hot or not? Thermal reactions to social contact. *Biology letters, 8*(5), 864-867.
- Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). Multivariate data analysis. New Jersey. USA: Englewood Cliffs.
- Hair, J., Hult, G., Ringle, C., Sarstedt, M., & Thiele, K. (2017). Mirror, mirror on the wall: a comparative evaluation of composite-based structural equation modeling methods. *Journal of the Academy of Marketing Science, 45*(5), 616-632.
- Halali, E., Meiran, N., & Shalev, I. (2017). Keep it cool: temperature priming effect on cognitive control. *Psychological Research, 81*(2), 343-354.

- Halpenny, E. A., & Caissie, L. T. (2003). Volunteering on nature conservation projects: Volunteer experiences, attitudes and values. *Tourism Recreation Research*, 28(3), 25–33.
- Halpenny, E. A., & Caissie, L. T. (2003). Volunteering on nature conservation projects: Volunteer experiences, attitudes and values. *Tourism Recreation Research*, 28(3), 25–33.
- Hancock, G. R. (2003). Fortune cookies, measurement error, and experimental design. *Journal of Modern Applied Statistical Methods*, 2(2), 3.
- Harlow, H. (1958). The nature of love. *American Psychologist*, 13, 673–685.
- Herbert, B. M., & Pollatos, O. (2012). The body in the mind. On the relationship between interoception and embodiment. *Topics in Cognitive Science*, 4(4), 692–704.
- Herz, R. (2010). The emotional, cognitive and biological basics of olfaction: Implications and considerations for scent marketing. In A. Krishna (Ed.), *Sensory marketing: Research on the sensuality of products* (pp. 75–86). New York: Routledge, Psychology Press.
- Hong, J., & Sun, Y. (2012). Warm it up with love: The effect of physical coldness on liking of romance movies. *The Journal of Consumer Research*, 39(2), 293–306. <https://thriveglobal.com/stories/annual-173-billion-worth-of-volunteer-tourism-industry-is-enough-to-make-a-change/>
- Huang, G. C., Unger, J. B., Soto, D., Fujimoto, K., Pentz, M. A., Jordan-Marsh, M., Valente, T. W. (2014). Peer influences: The impact of online and offline friendship networks on adolescent smoking and alcohol use. *The Journal of Adolescent Health*, 54, 508–514.
- Hulland, J. (1999). Use of partial least squares (PLS) in strategic management research: a review of four recent studies. *Strategic management journal*, 20(2), 195-204.
- Hume, L., Dodd, C., & Grigg, N. (2003). “In-store selection of wine – no evidence for the mediation of music?”, *Perceptual and Motor Skills*, 96, 1252-4.

- Hung, I., & Labroo, A. (2011). From Firm Muscles to Firm Willpower: Understanding the Role of Embodied Cognition in Self-Regulation. *Journal of Consumer Research*, 37(6), 1046-1064.
- IJzerman, H., & Semin, G. (2009). The Thermometer of Social Relations: Mapping Social Proximity on Temperature. *Psychological Science*, 20(10), 1214-1220.
- IJzerman, H., & Semin, G. (2010). Temperature perceptions as a ground for social proximity. *Journal of Experimental Social Psychology*, 46(6), 867-873.
- IJzerman, H., Coan, J., Wagemans, F., Missler, M., Van Beest, I., Lindenberg, S., & Tops, M. (2015). A theory of social thermoregulation in human primates. *Frontiers in Psychology*, 6, 1-17.
- IJzerman, H., Gallucci, M., Pouw, W., Weißgerber, S., Van Doesum, N., & Williams, K. (2012). Cold-blooded loneliness: Social exclusion leads to lower skin temperatures. *Acta Psychologica*, 140(3), 283-288.
- IJzerman, H., Karremans, J., Thomsen, L., & Schubert, T. (2013). Caring for sharing: How attachment styles modulate communal cues of physical warmth. *Social Psychology*, 44(2), 160-166.
- IJzerman, H., Neyroud, L., Courset, R., Schrama, M., Post, J., & Pronk, T. (2018). Socially thermoregulated thinking: How past experiences matter in thinking about our loved ones. *Journal of Experimental Social Psychology*, 79, 349-355.
- Inagaki, T. K., Irwin, M. R., & Eisenberger, N. I. (2015). Blocking opioids attenuates physical warmth-induced feelings of social connection. *Emotion*, 15, 494–500.
- Inagaki, T., & Eisenberger, N. (2013). Shared Neural Mechanisms Underlying Social Warmth and Physical Warmth. *Psychological Science*, 24(11), 2272-2280.
- Jaccard, J., Wan, C.K., 1996. *LISREL Approaches to Interaction Effects in Multiple Regression*. Thousand Oaks, California: SAGE publications.
- Jain, R., & Bagdare, S. (2011). Music and consumption experience: A review. *International Journal of Retail and Distribution Management*, 39(4), 289-302.

- Jedidi, K., Jagpal, H. S., & DeSarbo, W. S. (1997). Finite-mixture structural equation models for response-based segmentation and unobserved heterogeneity. *Marketing Science*, *16*(1), 39-59.
- Kang, Y., Williams, L. E., Clark, M., Gray, J. R., & Bargh, J. A. (2011). Physical temperature effects on trust behavior: The role of the insula. *Social Cognitive and Affective Neuroscience*, *6*, 507–515.
- Kaplan, D. (2008). *Structural Equation Modeling: Foundations and Extensions (2nd ed.)*. SAGE publications.
- Kent State University, (2019, May) SPSS Tutorials: Independent Samples t Test. Retrieved from <https://libguides.library.kent.edu/spss/independentttest>.
- Kleine, R.B. (2011). Convergence of Structural Equation Modeling and Multilevel Modeling. SAGE Publications Ltd. p. 562-589.
- Kock, F., Josiassen, A., Assaf, G., Karpen, Ingo., & Farrelly, F. (2019). Tourism Ethnocentrism and Its Effects on Tourist and Resident Behavior. *Journal of Travel Research*, *58*(3), 427 –439.
- Kolb, P., Gockel, C., & Werth, L. (2012). The effects of temperature on service employees' customer orientation: An experimental approach. *Ergonomics*, *55*, 621–635.
- Krishna, A. (2011). Can supporting a cause decrease donations and happiness? The cause marketing paradox. *Journal of Consumer Psychology*, *21*(3), 338-345.
- Krishna, A. (2012). An integrative review of sensory marketing: Engaging the senses to affect perception, judgment and behavior. *Journal of Consumer Psychology*, *22*(3), 332–351.
- Krishna, A., & Schwarz, N. (2014). Sensory marketing, embodiment, and grounded cognition: A review and introduction. *Journal of Consumer Psychology*, *24*(2), 159-168.
- Kross, E., Egner, T., Ochsner, K., Hirsch, J., & Downey, G. (2007). Neural dynamics of rejection sensitivity. *Journal of Cognitive Neuroscience*, *19*(6), 945-956.
- Lakoff, G., & Johnson, M. (1999). *Philosophy in the flesh: The embodied mind and its challenge to Western thought*. New York, USA: Basic Books.

- Lakoff, G., & Johnson, M. (1980). *Metaphors we live by*. Chicago, IL: University of.
- Lakoff, G., & Johnson, M. (1980). The metaphorical structure of the human conceptual system. *Cognitive science*, 4(2), 195-208.
- Landau, M. J., Meier, B. P., & Keefer, L. A. (2010). A metaphor-enriched social cognition. *Psychological Bulletin* 136, 1045–1067.
- Lee, J., & Shrum, L. J. (2012). Conspicuous consumption versus charitable behavior in response to social exclusion: A differential needs explanation. *Journal of Consumer Research*, 39, 1–17.
- Lee, J., Shrum, L. J., & Yi, Y. (2016). The role of communication norms in social exclusion effects. *Journal of Consumer Psychology*, 27(1), 108-116.
- Lee, S. W., & Schwarz, N. (2010). Dirty hands and dirty mouths embodiment of the moral-purity metaphor is specific to the motor modality involved in moral transgression. *Psychological Science*, 21, 1423–1425.
- Lee, S., Rotman, J., & Perkins, A. (2014). Embodied cognition and social consumption: Self-regulating temperature through social products and behaviors. *Journal of Consumer Psychology*, 24(2), 234-240.
- Li, Y., Johnson, E. J., & Zaval, L. (2011). Local warming: Daily temperature change influences belief in global warming. *Psychological science*, 22(4), 454-459.
- Lo, A., & Lee, C. (2011). Motivations and perceived value of volunteer tourists from Hong Kong. *Tourism Management*, 32(2), 326-334.
- MacDonald, G., & Leary, M. R. (2005). Why does social exclusion hurt? The relationship between social and physical pain. *Psychological Bulletin*, 131(2), 202–223.
- MacKenzie, S. B., Podsakoff, P. M., & Podsakoff, N. P. (2011). “Construct measurement and validation procedures in MIS and behavior research: integrating new and existing techniques”. *MIS Quarterly*, 35, 293-334.

- Maner, J. K., DeWall, C. N., Baumeister, R. F., & Schaller, M. (2007). Does social exclusion motivate interpersonal reconnection? Resolving the “porcupine problem”. *Journal of Personality and Social Psychology*, *92*(1), 42–55.
- Marangoni C, Ickes W (1989) Loneliness: a theoretical review with implications for measurement. *Journal of Social Personal Relationships* *6*(93) 93–128.
- Maslow, A. H. (1943). A theory of human motivation. *Psychological review*, *50*(4), 370.
- Matthews, A. (2008). Negotiated selves: Exploring the impact of local-global interactions on young volunteer travellers. In K.D. Lyons & S. Wearing (Eds.), *Journeys of discovery in volunteer tourism* (pp. 101–117). Wallingford, UK: CABI.
- McGehee, N. G., & Norman, W. (2002). Alternative tourism as impetus for consciousness-raising. *Tourism Analysis*, *6*, 239-251.
- McGehee, N., & Santos, C. (2005). Social change, discourse and volunteer tourism. *Annals of Tourism Research*, *32*(3), 760-779.
- Mead, N. L., Baumeister, R. F., Stillman, T. F., Rawn, C. D., & Vohs, K. D. (2011). Social exclusion causes people to spend and consume strategically in the service of affiliation. *Journal of Consumer Research*, *37*, 902–919.
- Meier, B. P., Schnall, S., Schwarz, N., & Bargh, J. A. (2012). Embodiment in social psychology. *Topics in Cognitive Science*, *4*, 705–716.
- Meier, B. P., Scholer, A. A., & Fincher-Kiefer, R. (2014). Conceptual metaphor theory and person perception. In M. Landau, M. D. Robinson, & B. P. Meier (Eds.), *The power of metaphor: Examining its influence on social life* (pp. 43–64). Washington, DC: American Psychological Association.
- Mellenbergh, G. J. (1996). “Measurement precision in test score and item response models”. *Psychological Methods*, *3*, 293-299.
- Milner, A., & Goodale, M. (2008). Two visual systems re-viewed. *Neuropsychologia*, *46*(3), 774-785.

- Morrin, M. (2010). Scent marketing: An overview. In A. Krishna (Ed.), *Sensory marketing: Research on the sensuality of products* (pp. 75–86). New York: Routledge, Psychology Press.
- Mustonen, P. (2005). Volunteer tourism: postmodern pilgrimage? *Journal of Tourism and Cultural Change*, 3(3), 160-177.
- Mustonen, P. (2007). Volunteer tourism – altruism or mere tourism? *Anatolia: An International Journal of Tourism and Hospitality Research*, 18(1), 97–115.
- Mustonen, P. (2007). Volunteer tourism — Altruism or mere tourism? *Anatolia: An international Journal of Tourism and Hospitality Research*, 18(1), 97–115.
- Netemeyer, R.G., Bearden, W.O. and Sharma, S. (2003). *Scaling Procedures: Issues and Applications*. California. SAGE Publication.
- Neto, F. (2014). Psychometric analysis of the short-form UCLA Loneliness Scale (ULS-6) in older adults. *European Journal of Ageing*, 11(4), 313-319.
- Niedenthal, P., Barsalou, L., Winkielman, P., Krauth-Gruber, S., & Ric, F. (2005). Embodiment in Attitudes, Social Perception, and Emotion Silvia Krauth-Gruber and François Ric. *Personality and Social Psychology Review*, 9(3), 184-211.
- Nissen, M. (2015, April). *GRAFIK Så ensomme er danskerne*. Retrived from <https://www.dr.dk/nyheder/indland/grafik-saa-ensomme-er-danskerne>
- Ooi, N., & Laing, J. (2010). Backpacker tourism: Sustainable and purposeful? Investigating the overlap between backpacker tourism and volunteer tourism motivations. *Journal of Sustainable Tourism*, 18(2), 191-206.
- Ostinelli, M., Luna, D., & Ringberg, T. (2014). When up brings you down: The effects of imagined vertical movements on motivation, performance, and consumer behavior. *Journal of Consumer Psychology*, 24(2), 271–283.
- Özdemir, Y., Kuzucu, Y., & Ak, S. (2014). Depression, loneliness and Internet addiction: How important is low self-control? *Computers in Human Behavior*, 34, 284–290.

- Padilla, M. A., & Divers, J. (2015). A Comparison of Composite Reliability Estimators: Coefficient Omega Confidence Intervals in the Current Literature. *Educational and psychological measurement*, 76(3), 436–453.
- Panksepp, J. (1998). Attention deficit hyperactivity disorders, psychostimulants, and intolerance of childhood playfulness: A tragedy in the making? *Current Directions in Psychological Science*, 7(3), 91-98.
- Panksepp, J., Nelson, E., & Bekkedal, M. (1997). Brain systems for the mediation of social separation-distress and social- reward: Evolutionary antecedents and neuropeptide intermediaries. *Annals of the New York Academy of Sciences*, 807, 78–100.
- Paraskevaidis, P., & Andriotis, K. (2016). Altruism in tourism: Social Exchange Theory vs Altruistic Surplus Phenomenon in host volunteering. *Annals of Tourism Research*, 62, 26-37.
- Pariyar, S. (2017, October). *Annual \$173 Billion Worth Of Volunteer Tourism Industry Is Enough To Make A Change*. Retrieved from: <https://thriveglobal.com/stories/annual-173-billion-worth-of-volunteer-tourism-industry-is-enough-to-make-a-change/>
- Parsons, L. M., Fox, P. T., Downs, J. H., Glass, T., Hirsch, T. B., Martin, C. C., Jerabek, P. A., & Lancaster, J. L. (1995). Use of implicit motor imagery for visual shape discrimination as revealed by PET. *Nature*, 375, 54-58.
- Pecher, D., & Zwaan, R. A. (Eds.). (2005). *Grounding cognition: The role of perception and action in memory, language, and thinking*. Cambridge University Press.
- Peplau, L. A., & Perlman, D. (1982). Perspectives on loneliness. In L. A. Peplau & D. Perlman (Eds.), *Loneliness: A sourcebook of current theory, research and therapy* (pp. 1–20). New York: Wiley-Interscience.
- Percy, E. J., Hoffmann, J. L., & Sherman, S. J. (2011). Sticky metaphors and the persistence of the traditional voluntary manslaughter doctrine. *University of Michigan Journal of Law Reform*, 44, 383–427.
- Piliavin, J. A., & Cham, H.-W. (1990). Altruism. A Review of Recent Theory and Research. *Annual Review of Sociology*, 16, 27- 65.

- Rai, D., Lin, C., & Yang, C. (2017). The effects of temperature cues on charitable donation. *Journal of Consumer Marketing*, 34(1), 20-28.
- Raymond, R. (2008). 'Make a difference!': The role of sending organisations in volunteer tourism. In K. Lyons & S. Wearing (Eds.), *Journeys of discovery in volunteer tourism* (pp. 48–62). Wallingford, UK: CABI International.
- Reisberg, D. (Ed.). (1992). *Auditory imagery*. Hillsdale, NJ, US: Lawrence Erlbaum Associates, Inc.
- Rushton, J. P. (1980). *Altruism, socialization, and society*. Englewood Cliffs, NJ: Prentice-Hall. Rushton.
- Russell, D. W. (1996). UCLA Loneliness Scale (Version 3): Reliability, validity, and factor structure. *Journal of Personality Assessment*, 66(1), 20-40.
- Russell, D., Cutrona, C. E., Rose, J., & Yurko, K. (1984). Social and emotional loneliness: An examination of weiss's typology of loneliness. *Journal of Personality and Social Psychology*, 46, 1313–1321.
- Russell, D., Peplau, L. A., & Cutrona, C. E. (1980). The revised UCLA Loneliness Scale: Concurrent and discriminant validity evidence. *Journal of Personality and Social Psychology*, 39, 472-480.
- Sachs, J. D., Layard, R., & Helliwell, J. F. (2018). World Happiness Report 2018 (No. id: 12761).
- Sassenrath, C., Sassenberg, K., & Semin, G. (2013). Cool, but understanding...Experiencing cooler temperatures promotes perspective-taking performance. *Acta Psychologica*, 143(2), 245-251.
- Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research methods for business students*. Essex: Financial Times/Prentice Hall.
- Schilder, J. D., IJzerman, H., & Denissen, J. J. A. (2014). Physical warmth and perceptual focus: a replication of IJzerman & Semin (2009). *PloS one*, 9 (11),

- Schwarz, N. (2012). Feelings-as-information theory. In P. A. M. Van Lange, A. Kruglanski, & E. T. Higgins (Eds.), *Handbook of theories of social psychology* (pp. 289–308). Thousand Oaks, CA: SAGE publications.
- Schwarz, N., & Clore, G. L. (2007). Feelings and phenomenal experiences. In A. Kruglanski, & E. T. Higgins (Eds.), *Social psychology. Handbook of basic principles* (pp. 385–407) (2nd ed.). New York: Guilford.
- Shahzalal, M., & Font, X. (2018). Influencing altruistic tourist behaviour: Persuasive communication to affect attitudes and self-efficacy beliefs. *International Journal of Tourism Research*, 20(3), 326-334.
- Shalev, I. (2018). Using Motivated Cue Integration Theory to Understand a Moment-by-Moment Transformative Change: A New Look at the Focusing Technique. *Frontiers in Human Neuroscience*, 12, 10-13.
- Sheldon, K. M., & Gunz, A. (2009). Psychological needs as basic motives, not just experiential requirements. *Journal of Personality*, 77(5), 1467–1492.
- Sin, H. L. (2009). Volunteer tourism – “Involve me and I will learn”? *Annals of Tourism Research*, 36(3), 480–501.
- Singh, S., & Singh, T. V. (2004). Volunteer Tourism: New Pilgrimages to the Himalayas. In T. V. Singh (Ed.), *New Horizons of Tourism: Strange Experiences and Stranger Practises*, (pp. 181-194). Wallingford: Cabi.
- Smith, L. B. (2005). Cognition as a dynamic system: Principles from embodiment. *Developmental Review*, 25(3-4), 278-298.
- Sober, E., & Wilson, D. S. (1998). *Unto others: The evolution and psychology of unselfish behavior*. Cambridge, MA: Harvard University Press.
- Soderman, N., & Snead, S.L. (2008). Opening the gap: The motivation of gap year travellers to volunteer in Latin America. In K.D. Lyons & S. Wearing (Eds.), *Journeys of discovery in volunteer tourism* (pp. 101–117). Wallingford, UK: CABI.

- Steenkamp, J-B, E. M, & Baumgartner, H. (2000). On the Use of Structural Equation Models in Experimental Designs. *International Journal of Research in Marketing*, 17, 195-202.
- Steinmetz, J., & Posten, A. (2017). Physical temperature affects response behavior. *Journal of Experimental Social Psychology*, 70, 294-300.
- Suhr, D. D. (2006). Exploratory or confirmatory factor analysis?. University of Northern Colorado
- Sullivan, J. (2018). Learning and Embodied Cognition: A Review and Proposal. *Psychology Learning and Teaching*, 17(2), 128-143.
- Sundhedsstyrelsen (2016). Sygdomsbyrden i Danmark, Risikofaktorer, Retrieved from www.Sundhedsstyrelsen.dk
- Teng, Y., Wu, K., & Liu, H. (2015). Integrating Altruism and the Theory of Planned Behavior to Predict Patronage Intention of a Green Hotel. *Journal of Hospitality and Tourism Research*, 39(3), 299-315.
- Todorov, A., Baron, S. G., & Oosterhof, N. N. (2008). Evaluating face trustworthiness: A model based approach. *Social Cognitive and Affective Neuroscience*, 3, 119–127.
- Tourism Research & Marketing. (2008). Volunteer tourism: A global analysis. A report by tourism research and marketing. Barcelona, Spain: Association for Tourism and Leisure Education.
- Van Acker, B., Kerselaers, K., Pantophlet, J., & IJzerman, H. (2016). Homelike thermoregulation: How physical coldness makes an advertised house a home. *Journal of Experimental Social Psychology*, 67, 20-27.
- Van Vugt, M., De Cremer, D., & Janssen, D. P. (2007). Gender differences in cooperation and competition: The male-warrior hypothesis. *Psychological Science*, 18, 19–23.
- Vanhalst, J., Soenens, B., Luyckx, K., Van Petegem, S., Weeks, M. S., & Asher, S. R. (2015). Why do the lonely stay lonely? Chronically lonely adolescents' attributions and emotions in situations of social inclusion and exclusion. *Journal of Personality and Social Psychology*, 109(5), 932–948.

- Varela, F. J., Thompson, E., & Rosch, E (1991). *The embodied mind: Cognitive science and human experience*. Cambridge, Mass: The MIT Press.
- Voluntourism.org. (2008). Voluntourism. Retrieved 17 April 2008 from: <http://www.voluntourism.org/>.
- Wearing S. (2001). *Volunteer Tourism: Experiences that Make a Difference*. CABI Publishing: New York.
- Wearing, S. L. (2003) Volunteer Tourism. *Tourism Recreation Research*, 28 (3), 3-4.
- Wearing, S., & McGehee, N. G. (2013). Volunteer tourism: A review. *Tourism Management*, 38, 120–130.
- Wearing, S., & Neil, J. (2000). Refiguring self and identity through volunteer tourism. *Loisir et Societe*, 23(2), 389-419.
- Wei, W., Ma, J., & Wang, L. (2015). The ‘warm’ side of coldness: Cold promotes interpersonal warmth in negative contexts. *British Journal of Social Psychology*, 54(4), 712-727.
- Weiler, B., & Richins, H. (1995). Extreme, extravagant and elite: A profile of ecotourists on Earthwatch expeditions. *Tourism Recreation Research*, 28(3), 63–72.
- Weiss, R. S. (1973). *Loneliness: The experience of emotional and social isolation*. Cambridge, MA: MIT Press.
- Wieland, A., Kock, F., & Josiassen, A. (2018). Scale purification: state-of-the-art review and guidelines. *International Journal of Contemporary Hospitality Management*, 30(11), 3346-3362.
- Williams, L. E., & Bargh, J. A. (2008). Experiencing physical warmth promotes interpersonal warmth. *Science*, 322, 606–607.
- Williams, L. E., Huang, J. Y., & Bargh, J. A. (2009). The scaffolded mind: Higher mental processes are grounded in early experience of the physical world. *European journal of social psychology*, 39(7), 1257-1267.

- Wilson, M. (2002). Six views of embodied cognition. *Psychonomic Bulletin & Review*, 9(4), 625-636.
- Woosnam, K. M., & Lee, Y. J. (2011). Applying social distance to voluntourism research. *Annals of Tourism Research*, 38(1), 309-313.
- Zajonc, R. B. (1968). Attitudinal effects of mere exposure. *Journal of Personality and Social Psychology Monograph*, 9(2), 1-27.
- Zhang, Y., Risen, J. (2014). Embodied Motivation: Using a Goal Systems Framework to Understand the Preference for Social and Physical Warmth. *Journal of Personality and Social Psychology*, 107(6), 965-977.
- Zhong, C. B., & Leonardelli, G. J. (2008). Cold and lonely: Does social exclusion literally feel cold? *Psychological Science*, 19, 838-842.
- Zhong, C. B., & Liljenquist, K. (2006). Washing away your sins: Threatened morality and physical cleansing. *Science*, 313(5792), 1451-1452.

11. APPENDICES

11.1 Appendix 1 - Questionnaire

Volunteer tourism questionnaire

Start of Block: Block 14

Q1 The cup is pleasant to hold.

- Strongly disagree (1)
 - Disagree (2)
 - Somewhat disagree (3)
 - Neither agree nor disagree (4)
 - Somewhat agree (5)
 - Agree (6)
 - Strongly agree (7)
-

Q2 The cup is suitable for transporting drinks over a longer period of time.

- Strongly disagree (1)
 - Disagree (2)
 - Somewhat disagree (3)
 - Neither agree nor disagree (4)
 - Somewhat agree (5)
 - Agree (6)
 - Strongly agree (7)
-

Q3 I would recommend this cup to my friends.

- Strongly disagree (1)
- Disagree (2)
- Somewhat disagree (3)
- Neither agree nor disagree (4)
- Somewhat agree (5)
- Agree (6)
- Strongly agree (7)

End of Block: Block 14

Start of Block: Block 8

Q4 How often do you feel lack of companionship?

- Never (4)
 - Rarely (3)
 - Sometimes (2)
 - Often (1)
-

Q5 How often do you feel part of a group of friends?

- Never (1)
 - Rarely (2)
 - Sometimes (3)
 - Often (4)
-

Q6 How often do you feel left out?

- Never (1)
- Rarely (2)
- Sometimes (3)
- Often (4)

Q7 How often do you feel isolated from others?

- Never (1)
 - Rarely (2)
 - Sometimes (3)
 - Often (4)
-

Q8 How often do you feel unhappy being so withdrawn?

- Never (1)
 - Rarely (2)
 - Sometimes (3)
 - Often (4)
-

Q9 How often do you feel people are around you but not with you?

- Never (1)
- Rarely (2)
- Sometimes (3)
- Often (4)

End of Block: Block 8

Start of Block: Block 9

Q10 If I was motivated to participate in volunteer tourism, I would do it because:

	Strongly disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Strongly agree (5)
It is a meaningful thing to do (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I want to assist the natural environment (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I want to be challenged (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I want to experience something different and new (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I want to immerse myself in the local culture (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I want to learn valuable life skills (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I want to gain valuable experience for my CV (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I want to contribute to the places I visit (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

End of Block: Block 9

Start of Block: Block 14

Q11 What is your current age?

- below 18 (1)
 - 18-22 (2)
 - 23-27 (4)
 - 28-32 (5)
 - 33 and over (6)
-

Q12 What is your gender?

- Male (1)
 - Female (2)
-

Q13 What is your nationality?

Q14 Which of the following options best describes your current study/work situation:

- Full-time employee (1)
- Part-time employee (2)
- Student with a job/internship (3)
- Student (including PhD, and Postdoc) (4)
- Other (5)

End of Block: Block 14

Start of Block: Block 11

Q15 Would you rather donate money then actively volunteer?

- Yes (4)
- No (5)

End of Block: Block 11

Start of Block: Block 7

Display This Question:

If Would you rather donate money, then actively volunteer? = Yes

Q16 If yes, how much DKK would you donate?

End of Block: Block 7

Start of Block: Block 15

Q17 Would you like to receive a monthly newsletter about volunteer tourism projects?

If yes, please provide your email below.

If you cannot find '@' please just type 'at'.

(you may now put the cup down if needed)

End of Block: Block 15

Start of Block: Block 7

Q18 Do you have an idea what was the goal of this experiment?

If yes, please share your thoughts.

End of Block: Block 7

Start of Block: Block 8

Q19 The water in the cup was...

Warm (1)

Cold (2)

End of Block: Block 8

11.2 Appendix 2 – Questionnaire outlook in Qualtrics.

Survey Completion
0% ————— 100%

The cup is pleasant to hold.

Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The cup is suitable for transporting drinks over a longer period of time.

Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>