“Sounds familiar”: The effect of music familiarity on radical innovation adoption

Author: Sander Rekswinkel
Student number: s4607171
Supervisor: Dr. Simone Ritter
2nd examiner: Dr. Csilla Horváth
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Abstract

The majority of radical innovations introduced are failing, as a result of consumers refusing to adopt them, due to evoked resistance (Heidenreich & Handrich, 2015). Based on the Eloboration Likelihood Model it was argued that when introducing radical innovations the emotions of the consumer should be targeted, to increase their adoption rate. As music can evoke strong emotions, the effect of music on the intention to adopt a radical innovation was studied in this project. Familiar music was hypothesized to have a significant effect on the intention to adopt, compared to unfamiliar music and no music, due to its ability to evoke nostalgia. To test this 203 Dutch participants were randomly assigned to an online questionnaire containing a video showcasing a radical innovation called Ohoo, with either familiar, unfamiliar or no music playing. Besides, the intention to adopt, four other variables were also tested. These were: product attitude, willingness to try, willingness to buy and resistance. Furthermore, the moderating effect of similar product expertise was also tested. Results showed that familiar music did not have a significant effect on the intention to adopt as well as on the additional variables. Also, no interaction effect has been found between type of music and similar product expertise on the intention to adopt. However, unlike familiarity, music likeability had a significant effect on all dependent variables. Although, results did not significantly differ for participants who liked the music and participants not exposed to music. These findings suggest that when incorporating music into a radical innovation exposure, highly likeable music should be selected.
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1. Introduction

When operating in a highly competitive environment there is a huge scope of competitors who offer the same or similar products. Therefore, it is extremely important for firms to find new and creative ways to stand out from their respective competitors. One way to do this is to introduce new innovative products (Gourville, 2006). Not only is innovation key for differentiating oneself, it also plays a significant role in the long term survival of an organization (Hess, 2009). Furthermore, innovations can have significant benefits for organizations, in the form of long term financial success (Bayus, Erickson & Jacobson, 2003) and enhancement of primary demand (Nijs et al., 2001).

Despite its importance up to 90% of new innovative projects are still failing (Heidenreich & Handrich, 2015). A reason for this is due to consumers’ resistance to adopt the new product (Heidenreich & Handrich, 2015). Much research has already been done in exploring how innovations can increase consumers adoptions’ rate (Plouffe, Vandenbosch & Hulland, 2001; Guiltinan, 1999). However most studies relating to this topic mainly focus on the key antecedents on the intention to adopt developed by Rogers (1962). Studies acknowledge the importance of especially the relative advantage and the compatibility of the product in particular (Plouffe et al., 2001; Guiltinan, 1999).

However, when looking at radical innovations it cannot always be assumed that consumers have the knowledge and thus the ability to clearly establish the relative advantages and the compatibility, since the product is something they can’t compare to other familiar products (Schweitzer & Van den Hende, 2017). One theoretical model which could offer a solution for this is the Elaboration likelihood model by Petty and Cacioppo (1988). This model states that receivers of a persuasive message should possess the motivation as well as the ability in order for rational arguments to be effective. If the receiver lacks the motivation or the ability or both, the model opts to use a different communicative approach instead called the peripheral route, which aims to target the emotions of the receiver. It is interesting to examine if this also applies for the communication of radical innovations and thus could offer an alternative solution for innovation adoption.

Music is something that can have a very strong effect on emotions (Koelsch, 2010; Salimpoor et al., 2011). Not only does it possess the ability to reduce stress (Thoma et al., 2013) as well as anxiety (Kaempf, Margaret & Amodei, 1989), but it can also influence levels of emotional arousal as well as experienced pleasure (van den Bosch, Salimpoor & Zatorre, 2013). Familiar
music in particular can be said to have a positive effect on someone’s emotional state of pleasure and arousal (Van den Bosch et al., 2013). Especially older positive and lively familiar songs, have the power to elicit positive effects, because it evokes consumers' good moods through favourable nostalgic thoughts (Chou & Lien, 2010). Therefore, positive music with a high level of familiarity and arousal will be examined in this research.

In order to test if familiar music has a positive effect on the intention to adopt a radical innovation, familiar music will be compared to unfamiliar music as well as to when no music is played.

The research question is as follows: Does familiar music increase radical innovation adoption?

To the best of my knowledge, no research has been done in exploring the possible effects of familiar music on the intention to adopt radical innovations. This project will therefore make a significant contribution to missing theory and will aid theory development in the field of innovation adoption. Furthermore, if a significant positive effect is found between playing familiar music and the intention to adopt a radical innovation, it could provide valuable insights for companies wanting to successfully launch a radical new product. To illustrate, if proven to be significant, incorporating familiar music into a radical innovation exposure could be a valuable asset for companies, as it can increase the intention to adopt an innovation. Consequently, this can increase primary demand and profitability for organizations as was mentioned before. Finally, a significant effect could mean that companies are better of targeting the emotions of consumers when promoting a new radical innovation instead of targeting the rational side of the consumer. For example, by showcasing only the relative advantages and benefits the product has to offer. This could save companies considerable amounts of money, which would otherwise ineffectively be used to highlight the product beneficial features when promoting the product.
2. Literature review

2.1. The need for different methods to increase innovation adoption

As previously mentioned, innovation plays an essential role in an organizations’ success. Not only is innovation crucial for the long term survival of an organization (Hess, 2009), but it can also be a highly profitable source for organizations especially in the case of radical innovations (Sorescu, Chandy & Prabhu, 2003; Chaney, Devinney & Winner, 1991). Despite these positive effects the success rate of new products is still shockingly low, which is demonstrated by failure rates of up to 90% (Heidenreich & Handrich, 2015). Many researchers have set out to find ways to improve success rates, by researching how to increase the adoption rate of customers. However, most of these studies, focused on the antecedents developed by Rogers (1962). These antecedents consists out of five key factors that could influence the adoption rate of new products. These are: relative advantage, compatibility with values and experiences, complexity in use or understanding, trialability and observability. Especially relative advantage and compatibility are important for different consumer groups in adopting really new innovative products (Guiltinan, 1999; Plouffe et al., 2001). However, a detailed study has shown that the importance of such success factors has decreased over time, which is indicated by a decrease of effect size (Evanschitzky et al., 2012). In this updated meta-analysis, results were compared with previous effect sizes found by Henard and Szymanski (2001). Predictors of innovation success were divided into four characteristics: product characteristics, process characteristics, marketplace characteristics and organizational characteristics. Almost all effect sizes decreased, and all effects sizes in the category of product characteristics decreased. A possible reason for this could be that over time knowledge of these success factors have become more widespread among managers, making it harder to reap the benefits of gaining a competitive advantage as organizations are focusing on the same aspects of innovation (Evanschitzky et al., 2012). These developments suggest that new creative methods for increasing the success of innovation adoption should be utilized, and thus the scope of methods should be broadened as previous success factors among which are antecedents based on Rogers (1962) are becoming less trustworthy in determining the success of innovations.
2.2. *The ELM model as alternative*

The Elaboration likelihood model of Petty and Cacioppo (ELM, 1988) could provide a new avenue to increase the adoption rate of radical innovations. The ELM model consists out of two routes: the central route and the peripheral route. If the consumer possesses the motivation as well as the ability to correctly interpret a message, senders of the message should make use of the central route, which focusses on persuading the receiver through powerful, strong arguments and thus targets their rationality. If the consumer doesn’t possess the motivation, ability or both, the sender should make use of the peripheral route, which targets the emotions of the receiver.

2.2.1. *Central route not fit for radical innovations*

The central route relies on conceptual schemas formed in the minds of consumers as this provides them with the knowledge and thus the ability to effectively interpret the intended message of the receiver. When evaluating products, consumers make use of these conceptual schemas (Taylor & Noseworthy, 2019). These schemas serve to retrieve already learned information in the mind of consumers, which are related to the product in question. More specifically, schemas can be defined as cognitive structures which represents someone’s expectations about a domain (Bettman, 1979). Radical innovations can be defined as a product that involves a substantial different technology while at the same time offering a substantial increase in customer benefits (Sorescu et al., 2003). When advertising a radical innovation, it is likely that the consumers won’t understand the product in the short amount of time it is shown due to this substantial different technology. Consequently, this will cause a schema disruption in the mind of consumers, since the product is highly incongruent with the current hold set of beliefs and evaluations (Taylor & Noseworthy, 2019). This coincides with the development of reconstructing the existing schema or creating an entirely new schema, which results in anxiety, which then leads to unfavourable product evaluations (Mandler, 1982). Furthermore, since the product is something that can’t be easily compared to other products, it’s more difficult to establish the relative advantages and disadvantages of the product (Schweitzer & Van den Hende, 2017).

2.2.2. *Peripheral route fit for radical innovations*

In the case of radical innovation it is therefore highly recommended to not make use of this central route, but instead to make use of the peripheral route of the ELM model. This route should be utilized if the receiver of a message lacks the motivation, the ability or both to
correctly interpret a message. The peripheral route opts to refrain from rational strong arguments, but instead encourages to target the emotions of the receiver. Thus, instead of putting emphasis on the relative advantage and compatibility of a product, which belongs to the central route of the ELM model, companies should make use of the peripheral route when advertising their radical innovations. This is also supported by the fact that radical innovations have an uncertain nature, making it hard for consumers to retrieve information on a rational level. However, the initial set of experienced emotions could serve as a relevant information source instead, which could serve as an important factor in the process of product evaluation (Chaudhuri, Aboulnasr, & Ligas, 2010). Finally, new product adoptions involve change, uncertainty, as well as risk, meaning resistance is likely based on emotions (Paluch & Wünderlich, 2016) and can therefore best be remedied with, by targeting emotions.

2.3. Product expertise

Being familiar with a similar product category of a radical innovation could however aid the ability of the consumer to understand the radical innovation they are exposed to (Schweitzer & Van den Hende, 2017). These researchers found that familiarity with a similar product category of a radical innovation, helped to increase the identifiability of advantages and disadvantages of the concept of the product described on paper. This can be attributed to the fact that this causes people to have a higher level of cognitive expansion, meaning that it increases people’s ability to retrieve information about the product from their conceptual schemas, as opposed to people with no familiarity or whatsoever. However, the majority of consumers might not have this familiarity especially when it comes to radical innovations, because of the substantial different technology. The average consumer therefore doesn’t possess the ability to interpret the advertisement of the radical innovation.

2.4. The power of music

It has already been proven that emotions can severely influence consumers’ decision making (Achar et al., 2016). Advertisers, therefore incorporate emotional cues in their commercials in an attempt to target the emotions of consumers (Achar et al., 2016). The emotional cue which is used the most in these commercials is music (Yalch, 1991). Music is a powerful tool to target emotions (Koelsch, 2010; Salimpoor et al., 2011). Not only does it thus have the power to evoke emotions, but it’s also capable of influencing buying behaviour and thus the intention to adopt products. The effects of music on buying behaviour is a phenomenon that has already been studied many times. It has been found that the type of music played has a
significant effect on shopping intentions (Broekemier, Marquardt & Gentry, 2008). In this research it was found that shopping intentions were the highest when happy and likeable music was played. Furthermore, music likeability can also positively affect purchase intentions as well as brand attitudes and advertisement attitudes (Galan, 2009). The tempo of music can also have an effect on product consumption. For example, people who were exposed to fast music ordered more beers as opposed to people who weren’t exposed to such music (Guéguen et al., 2008). However, the effectiveness of tempo can also depend on gender. It has been found that playing no music or slow-tempo music works better to increase purchase intention for females, whereas males are more positively affected by music and fast-tempo music (Andersson et al., 2012). Song lyrics can also affect behaviour (North & Hargreaves, 2008). This is illustrated by the fact that people who were exposed to songs with aggressive lyrics showed more aggressive behaviour, compared to people who were exposed to songs with neutral lyrics (Fischer & Greitemeyer, 2006). Song lyrics are also capable of affecting buying behaviour. Male customers who were exposed to romantic songs in a flower shop ended up spending more money, compared to when no music was played or non-romantic songs were playing (Jacob et al., 2009). All of this shows that music can indeed have an effect on buying behaviour, however, to my best knowledge no research has been done if this also is the case for radical innovations.

2.5. The power of familiar music

As described above, music can influence behaviour through many different aspects, such as: type, tempo and lyrics. However, another important aspect to create favourable emotions and thus increase the intention to adopt is, familiarity. Familiar music has the power to evoke stronger positive feelings of emotions than unfamiliar music (Ali & Peynircio, 2010). This can be attributed to the fact that unlike unfamiliar songs, familiar songs have the power to elicit positive effects through favourable nostalgic thoughts (Chou & Lien, 2010; Cheung et al., 2013). However, these positive effects were only proven for lively and positive songs, with a high level of arousal. In this research by Chou and Lien (2010) the effect of incorporating 10 year old popular lyrical songs into an advertisement, on the attitude towards the ad as well as the brand was tested and compared with newer popular lyrical songs. The older songs evoked significantly more feelings of nostalgia, which in turn led to a good mood through favourable nostalgic thoughts. This caused the older familiar songs to have a positive effect on the attitude towards the brand as well as the attitude towards the product. Furthermore, being familiar with music played in an advertisement can also positively shape someone’s
preferences for that advertisement (Marchegiani & Phau, 2012). While song familiarity can also have a positive effect on product attitudes as well as purchase intention (Chou & Lien, 2014). Finally, the nostalgic feelings that are caused as a result of listening to familiar music can also counter the feelings of stress and uncertainty that comes with radical innovations. Nostalgia can also provide a more comprehensive and faster route to product evaluation, which reduces the need to carefully examine product messages (Baumgartner et al., 1992). Such careful analysis is not always possible due to the complicated techniques used in radical innovations as they can be perceived as incomprehensive, making a familiar song a great alternative for product adoption.

To my best knowledge, no research has been done on the effect of playing familiar music while exposing potential consumers to a radical innovation on their adoption intention. This study will therefore make a valuable contribution to fill in this current gap.

2.6. Research question and hypothesis

With the help of the literature provided above the following research question has been formulated:

- Does familiar music increase radical innovation adoption?

Based on the literature. The following hypothesis are formulated:

H1a: Incorporating familiar music into a radical innovation exposure will lead to a higher intention to adopt compared to the incorporation of unfamiliar music or no music.

This hypothesis is supported by literature from Chou and Lien (2010). In this research it is stated that familiar songs possess the power to create positive attitudes towards advertisements as well as brands, due to favourable nostalgic thoughts. Furthermore, this hypothesis is also supported by literature from Chou and Lien (2014) because in this research a positive effect of song familiarity on product attitude and purchase intention has been found. These researches have shown that unlike unfamiliar music, familiar music can evoke feelings of nostalgia (Cheung et al., 2013), which leads to positive attitudes towards the product and brand, as well as an increase of purchase intention. Therefore, despite the fact that unfamiliar music is also capable of inducing positive feelings of emotions and can contain similar positive music elements as familiar music in the form of tempo, a positive mood, high arousal and a high likeability, it is expected that familiar music will still have a significantly higher effect on the intention to adopt a radical innovation. In conclusion, based on the literature
above along with the notion that nostalgia can counter feelings of stress and anxiety which are associated with radical innovations, it can be expected that familiar songs will have a more positive effect on radical innovation adoption compared to when, unfamiliar or no music is played.

**H1b:** Incorporating unfamiliar music into a radical innovation exposure will lead to a higher intention to adopt compared to the incorporation of no music.

This hypothesis is based on the ELM model developed by Patty and Cacioppo (1988). As previously discussed the peripheral route also known as the emotional route is better suited to increase the intention to adopt radical innovations. Keeping this in mind, unfamiliar music is still able to target emotions better than when no music is played. Due to its power to evoke emotions.

**H2:** The positive effects of both familiar and unfamiliar music on the intention to adopt a radical innovation will be weaker for people who have a higher level of similar product expertise regarding the radical innovation compared to people who don’t have the same level of expertise. Consequently, the effect of no music will be stronger for people who have a higher level of similar product expertise regarding the radical innovation compared to people who don’t have the same level of expertise.

The final hypothesis is based on literature by Schweitzer and Van den Hende (2017). These researchers found that familiarity with a similar product category of a radical innovation, helped to increase identifiability of advantages and disadvantages of the product. Keeping the ELM model in mind again, this shows that familiarity with a similar product category increases the ability to understand the benefits and downsides of a radical innovation. If these consumers also possess the motivation alongside the ability to interpret the message, the central route might be better suited and emphasizing the relative advantages of a product might be a better option. Meaning participants will likely become less vulnerable to stimuli which target their emotions such as music. Thus, weaker effects are expected for both music groups if the consumer possesses a higher level of product expertise in a similar product category. On the contrary, stronger effects are expected for the no music group if the consumers possesses a higher a level of similar product expertise. This is because of the fact that consumers with a high level of similar product expertise are expected to understand the product significantly better than people with no or low similar product expertise. The absence of emotional targeting in the form of music will therefore impact the people with no or low
similar product expertise significantly more than people with a high level of similar product expertise, when it comes to their intention to adopt the radical innovation.

2.7. Conceptual model

![Diagram showing the relationship between types of music, product expertise, and intention to adopt a radical innovation.](image-url)
3. Method

3.1. Material

In this study one independent variable was manipulated. The independent variable which was manipulated was the type of music. Participants were exposed to the following types of music: Familiar music, Unfamiliar music and No music. The manipulation consisted of incorporating a fragment of one of these types of music into a video clip showcasing a radical innovation. A fragment of the song ‘Sonnetanz’ by Klangkarussell was selected to represent the piece of familiar music and a fragment of the song ‘Blused and Abused’ by Quincas Moreira was selected to represent the piece of unfamiliar music. In the case of no music participants were shown the video of the radical innovation without sound. The radical innovation, which was selected was the Ohoo Water ball.

3.1.1. Questionnaire

Each type of music was included in an online version of a questionnaire made in Qualtrics and was distributed online. Every questionnaire contained the same video showcasing the Ohoo Water ball.

3.1.2. Music criteria

The selected pieces of music were based on the following five criteria:

(1) To exclude the confounding effect of lyrics, original songs were selected which did not include lyrics. Furthermore, this ensured that participants were able to recognize the familiar song, without having to rely on lyrics.

(2) In order to evoke feelings of nostalgia, the selected familiar piece of music had to be at least 5 years old.

(3) The selected pieces of music needed to contain a high level of arousal, a positive mood and needed to be well liked. Since positive effects of familiar music have mainly been found for music fitting those criteria.
(4) The selected pieces of music needed to contain a similar level of arousal, mood and likeability. To ensure familiarity was the only differentiating factor between the two pieces of music.

(5) The selected piece of familiar music needed to be well known to a variety of different age groups. This was done to ensure that there would be no significant differences in terms of familiarity for different age groups.

3.1.3. Radical innovation criteria

The radical innovation was selected based on the definition by Sorescu et al. (2003). In this paper radical innovations are defined as a product that involves a substantial different technology, while at the same time offering a substantial increase in customer benefits. For the purpose of this study and in order to be truly perceived as a radical innovation, the selected radical innovation also had to be: (1) Unfamiliar to the public, (2) Deviant from existing products, (3) Perceived as radical and (4) Inducing resistance.

3.2. Pre-test

Before distributing the online questionnaire a pre-test was conducted to test for various aspects regarding the selected pieces of music. Two pieces of familiar and unfamiliar music were included in this pre-test. The two pieces of familiar music were: ‘Sonnentanz’ by Klangkarussell and ‘Tequila’ by the Champs. The two pieces of unfamiliar music were: ‘Tea for Two’ by The Whole Other and ‘Bluesed and Abused’ by Quincas Moreira. In the same pre-test three radical innovations were also included and tested for the right criteria. The three innovations were: Smart wardrobe, Iwatch and Ohoo

The pre-test was distributed to 46 participants. In the end 45 eligible participants remained for the analysis of the results. One participant was dropped due to being ambiguous about their age, making it questionable if the rest of their answers were reliable. The age of participants ranged from 21 to 70 years old, with an average age of 41. The pre-test was filled in by 18 males (40%) and 27 females (60%). The education level which was most frequent in the questionnaire was HBO (Dutch university of applied sciences) with 16 participants (35.6%) and WO (Dutch university) also with 16 participants (35.6%). All 45 participants filled in the correct word used in the sound check, which was “coffee”, ensuring that sound was working properly for everyone.
3.3. Pre-test Music

Music was tested for familiarity, positive mood, a high level of arousal and likeability. Furthermore, the goal of the pre-test was to select a piece of music which was perceived as highly familiar, as well as to select a piece of music which was perceived as the highly unfamiliar. Moreover, the aim of the pre-test was to ensure that both these pieces of music elicited a similar level of mood, arousal and likeability to guarantee that music only differed in terms of familiarity. After a brief introduction and a short sound check to ensure that the sound was working for participants, participants were exposed to a fragment of either one of the familiar songs or one of the unfamiliar songs, depending on the randomized order the participants were exposed to. After listening to this fragment, song familiarity was measured with the use of 3 items based on research by Roehm (2001) where participants could rate each item based on a seven point bipolar scale. The questions accompanying these scales were: *To what extent are you familiar with the music played in this clip? To what extent do you know the music played in this clip? and To what extent did you recognize the music played in this clip?* The items were: *not at all familiar/highly familiar, don’t know it well at all/know it very well, don’t recognize it right away/ recognize it right away.* The reliability of these measurements was good for all selected pieces of music (*α*<sub>sonnentanz</sub> = .98; *α*<sub>tequila</sub> = .89; *α*<sub>tea for two</sub> = .97; *α*<sub>blused and abused</sub> = .93).

Afterwards, the song fragment was tested to establish if it indeed evoked a positive mood. Four items with a seven point scale were selected from research by Chou and Lien (2014). The scale used in this research was: *Not at all/Very* and the items were: *Happy, joyful, pleased and cheerful.* The reliability of these measurements was good for all selected pieces of music (*α*<sub>sonnentanz</sub> = .98; *α*<sub>tequila</sub> = .96; *α*<sub>tea for two</sub> = .97; *α*<sub>blused and abused</sub> = .95). The statement accompanying these items and scales was: *This music makes me feel.*

Following up on this, the song fragment was tested to ensure that it elicited a high level of arousal. Adjectives to measure arousal were based on research by Thompson, Schellenberg and Husain (2001). These adjectives were: *Lively, active, energetic, full of pep and vigorous.* The same seven point scale as mentioned above was used to measure this, which is: *Not at all/Very.* The reliability of these measurements was good for all selected pieces of music (*α*<sub>sonnentanz</sub> = .97; *α*<sub>tequila</sub> = .90; *α*<sub>tea for two</sub> = .96; *α*<sub>blused and abused</sub> = .94). The same statement as mentioned above was used to accompany these items and scales, which was: *This music makes me feel.*
Finally, in order to test if the participants liked the music they listened to, one item with a seven point scale was used from Holbrook and Schindler (1989). This item was: I dislike it a lot/I like it a lot. The question accompanying this item was: To what extent did you like the music played in this clip? This process was the same for all selected pieces of music and hence was repeated four times.

3.3.1. Pre-test results Familiar music

Due to the fact that the pre-test contained two different versions as a result of a collaboration with another group of students, only 24 participants were exposed to both pieces of familiar music. The following results which are based on a score of 1 to 7, with 1 being the lowest and 7 being the highest, showed that both pieces of familiar music scored high on: Familiarity (Sonnentanz: $M = 5.32$, $SD = 1.97$; Tequila: $M = 5.60$, $SD = 0.98$), Mood (Sonnentanz: $M = 5.06$, $SD = 1.53$; Tequila: $M = 5.44$, $SD = 1.02$), Arousal (Sonnentanz: $M = 4.80$, $SD = 1.57$; Tequila: $M = 5.24$, $SD = 0.99$) and Likeability (Sonnentanz: $M = 5.33$, $SD = 1.09$; Tequila: $M = 5.46$, $SD = 1.72$).

3.3.2. Pre-test results Unfamiliar music

All 45 participants were, however, exposed to both pieces of unfamiliar music. The following results which are based on a score of 1 to 7, with 1 being the lowest and 7 being the highest, showed that both pieces of unfamiliar music scored low on Familiarity (Tea for Two: $M = 1.55$, $SD = 0.98$; Bluesed and Abused: $M = 2.03$, $SD = 1.27$). Furthermore, although scoring slightly lower than both pieces of familiar music, the scores for Mood (Tea for Two: $M = 3.73$, $SD = 1.30$; Bluesed and Abused: $M = 4.56$, $SD = 1.28$), Arousal (Tea for Two: $M = 3.60$, $SD = 1.40$; Bluesed and Abused: $M = 4.20$, $SD = 1.22$) and Likeability (Tea for Two: $M = 3.16$, $SD = 1.36$; Bluesed and Abused: $M = 3.96$, $SD = 1.52$) were still relatively high. However, particularly the results for the music piece of Tea for Two were a bit on the lower side.

3.3.3. Final selection pieces of music

Despite the fact that the familiar music piece of Tequila ($M = 5.60$, $SD = 0.98$) scored higher on familiarity than the familiar music piece of Sonnentanz ($M = 5.32$, $SD = 1.97$). Sonnentanz by Klangkarussell was chosen to be included in the main online questionnaire. This is due to the fact that the goal of the pre-test was not only to test for Familiarity and Unfamiliarity, but
also to select a piece of familiar music and unfamiliar music which scored similar on the
aspects of Arousal, Mood and Likeability to ensure music would only differ in terms of
Familiarity to avoid bias. That is also the reason why the unfamiliar music piece of Blused
and Abused by Quincas Moreira ($M = 2.03, SD = 1.27$) was selected instead of the unfamiliar
music piece of Tea for Two ($M = 1.55, SD = 0.98$), despite the fact that Tea for Two scored
lower on familiarity. When looking at the scores for Sonnentanz regarding Mood ($M = 5.06,$
$SD = 1.53$), Arousal ($M = 4.80, SD = 1.57$) and Likeability ($M = 5.33, SD = 1.09$) and Blused
and Abused regarding Mood ($M = 4.56, SD = 1.28$), Arousal ($M = 4.20, SD = 1.22$) and
Likeability ($M = 3.96, SD = 1.52$) it was found that these two pieces of music scored the most
similar out of the four pieces of music.

An independent sample t-test was carried out to test if both selected pieces of music differed
significantly on their level of Familiarity. An independent samples t-test showed a significant
difference between Sonnentanz ($M = 5.32, SD = 1.97$) and Blused and Abused ($M = 2.03, SD
= 1.27$) with regard to the level of Familiarity ($t (33.53) = 7.39, p < .001$).

Furthermore, an independent sample t-test was carried out to test if both selected pieces of
music did not differ significantly on their level of Mood, Arousal and Likeability. No
significant difference was found between Sonnentanz ($M = 5.06, SD = 1.53$) and Blused and
Abused ($M = 4.56, SD = 1.28$) with regard to the level of Mood ($t (67) = 1.46, p = .149$).
Similarly to Mood, an independent samples t-test did not show a significant difference
between Sonnentanz ($M = 4.80, SD = 1.57$) and Blused and Abused ($M = 4.20, SD = 1.22$)
with regard to the level of Arousal ($t (67) = 1.78, p = .079$). However, a significant
difference was found between Sonnentanz ($M = 5.33, SD = 1.09$) and Blused and Abused ($M = 3.96, SD
= 1.52$) with regard to the level of Likeability ($t (67) = 3.73, p < .001$). Despite this significant
difference, the concept of Likeability will still be measured in the main questionnaire, to test
if both songs are well liked in the main questionnaire as well, and also to test if a significant
difference will arise again in terms of Likeability between the selected piece of familiar music
and unfamiliar music. The pre-test scores for all music concepts measured regarding all four
pieces of music tested can be found in Appendix A.

3.4. Pre-test Radical Innovations

When participants were done with answering questions about all four selected pieces of
music, questions about the three selected radical innovations were asked. The three selected
innovations were tested for product unfamiliarity, deviance from existing products, degree of
radical innovativeness and the degree of resistance customers had towards this product. The purpose of this was to select the innovation which was perceived as the most unfamiliar, deviant, innovative and which induced the most resistance among consumers, to use in the main online questionnaire.

The three radical innovations were: Smart wardrobe, Iwatch and Ohoo. The Smart wardrobe is a wardrobe which could be used to store clothes, while also being able to iron these clothes, thus offering the benefit of not having to use an ironing board to manually iron your clothes. The IWatch is a technologically advanced Smart watch making use of a holographic touchscreen, offering the customer the benefit of having access to a full screen the size of a laptop incorporated in a small device, which could be worn around their wrist. Finally, Ohoo is an edible water ball, which could serve as a substitute for water bottles, this offers consumers the benefit of not having to throw away their plastic bottles, which reduces the amount of plastic in their household and which is also beneficial for the environment.

The pre-test for the radical innovations started by showing a brief description of the radical innovation, depending on the counterbalanced order. Participants were made aware that they would be shown a clip of this product without sound. This was done to ensure that participants rated the product fairly without being affected by music or sound. To test if participants were unfamiliar with the product a total of four items were used with a seven point scale. First two items were selected based on research from Chaudhuri et al. (2010). These items were: *I had knowledge of the product before today* and *I have heard about the product before today*. The last two items were selected based on research by Sabbe, Verbeke and van Damme (2008). These were: *I consider myself as a user of the product* and *I consider myself as an expert in the product*. The scales for these items ranged from *Strongly disagree/Strongly agree*. Due to the fact that all Cronbach's alpha scores were deemed as questionable for all individual products (*α* smart wardrobe = .65; *α* iwatch = .56; *α* ohoo = .66) item 3: *I consider myself as a user of the product* was dropped, which significantly increased all Cronbach’s alpha scores (*α* smart wardrobe = .76; *α* iwatch = .59; *α* ohoo = .76). The Cronbach's alpha score regarding the IWatch, however, still remained questionable. After these questions, it was tested if the product deviated from other existing products. Four items were used based on research from Lowe and Alpert (2015). The items were: *This product is new*, *This product is different*, *This product is unique* and *This product is original*. A seven point scale was used for each item ranging from: *Strongly disagree/Strongly agree*. The
reliability of these measurements was good for all selected innovations ($\alpha_{\text{smart wardrobe}} = .95$; $\alpha_{\text{iwatch}} = .91$; $\alpha_{\text{ohoo}} = .77$). Afterwards, the innovativeness of the product was tested with one item with a seven point scale ranging from Not at all innovative/Extremely innovative based again on research of Lowe and Alpert (2015). The item accompanying this scale was: How innovative is the product? Finally in order to test the degree of resistance towards the product in question and why it imposed resistance, three items were used based on Kleijnen, Lee and Wetzels (2009), Ram and Sheth (1989) and Laukkanen, Sinkkonen and Laukkanen (2007). To test the degree of resistance a seven point scale was used, ranging from Strongly disagree/Strongly agree and was accompanied by the following item: I feel resistance towards this product. If participants experienced resistance an open follow up question was asked which was: Could you argue why you experience resistance? Finally, a list with options was provided and participants were asked to select the most fitting option for experiencing resistance. The options were: It does not fit into my daily life/lifestyle, The image does not appeal to me, The product has too many economical and/or financial risks, I am worried that this product is harmful or poses a threat to my health, I am worried that this product will not be accepted within my social circle, I value my current products (tradition). This process was the same for all three selected innovations and hence was repeated three times.

3.4.1. Pre-test results Innovations

All 45 participants were exposed to all three innovations. The following results are again based on a score of 1 to 7, with 1 being the lowest and 7 being the highest. All three innovations scored low on Product Familiarity showcasing that customers were unfamiliar with the products presented (Smart Wardrobe: $M = 2.20$, $SD = 1.60$; IWatch: $M = 2.17$, $SD = 1.14$; Ohoo: $M = 1.68$, $SD = 1.32$). Furthermore all innovations were seen as Deviant (Smart Wardrobe: $M = 5.36$, $SD = 1.14$; IWatch: $M = 5.35$, $SD = 1.19$; Ohoo: $M = 5.97$, $SD = 0.84$) and Radical (Smart Wardrobe: $M = 5.04$, $SD = 1.20$; IWatch: $M = 5.16$, $SD = 1.26$; Ohoo: $M = 5.31$, $SD = 1.43$). Finally, Resistance towards the product varied from, not so much resistance to medium resistance depending on the product (Smart Wardrobe: $M = 3.11$, $SD = 1.47$; IWatch: $M = 3.60$, $SD = 1.72$; Ohoo: $M = 4.22$, $SD = 2.01$). The people who experienced resistance towards the product, were also asked why. The main reason for resistance towards the Smart Wardrobe was because it posed too many financial and economic risks, which was indicated by 4 people. The main reason for resistance towards the IWatch was because it didn’t fit into the consumers’ daily lifestyle, which was indicated by 7
people. To conclude, the main reason for resistance towards Ohoo lied in the fact that consumers were worried that the product would cause a threat to their health, which was indicated by 12 people.

3.4.2. Final selection Innovation

The Innovation which was selected based on the pre-test conducted was the Ohoo Waterball. This product scored the best on Product Familiarity (Smart Wardrobe: $M = 2.20, SD = 1.60$; iWatch: $M = 2.17, SD = 1.14$; Ohoo: $M = 1.68, SD = 1.32$), Deviance (Smart Wardrobe: $M = 5.36, SD = 1.14$; iWatch: $M = 5.35, SD = 1.19$; Ohoo: $M = 5.97, SD = 0.84$), Radicalness (Smart Wardrobe: $M = 5.04, SD = 1.20$; iWatch: $M = 5.16, SD = 1.26$; Ohoo: $M = 5.31, SD = 1.43$) and finally, Resistance (Smart Wardrobe: $M = 3.11, SD = 1.47$; iWatch: $M = 3.60, SD = 1.72$; Ohoo: $M = 4.22, SD = 2.01$). Therefore, Ohoo was included in the main questionnaire. The pre-test scores for all radical innovation concepts measured regarding all three radical innovations can be found in Appendix B.

3.5. Participants

In total 209 Dutch participants participated in the experiment by filling in the questionnaire. In the end 203 eligible participants remained, due to the fact that six participants either were younger than 18 years old, did not fill in the correct word for the sound check or watched less than 10 seconds of the video showcasing the radical innovation. The version of the questionnaire including familiar music was filled in by 69 participants, the version of the questionnaire including unfamiliar music was filled in by 64 participants and the version of the questionnaire with no music was filled in by 70 participants.

The average age of the participants in the questionnaire was 33.01 ($SD = 14.40$; range: 18-68). The majority of the participants was female (61.1%) and the education level of participants ranged from Secondary school to WO (University), with HBO (Dutch university of applied sciences) occurring most frequently (42.4%). A one way Anova showed that there was no relation between the Music Condition and Age ($F (2, 200) = 1.179, p = .310$). Furthermore, a Chi Square test showed no relation between the Music Condition and Gender ($\chi^2 (2) = 0.74, p = .691$) as well as no relation between the Music Condition and Education level ($\chi^2 (8) = 5.05, p = .752$).
3.6. Design

The experiment made use of a 3x1 between-subjects design. In order to test the effect of the type of music played on the intention to adopt a radical innovation, each participant was randomly assigned to a questionnaire, consisting of a video clip showcasing the Ohoo Waterball with either familiar music playing, unfamiliar music playing or no music playing depending on the condition participants were exposed to.

3.7. Instrumentation

In this research one main dependent variable was measured, the Intention to adopt the radical innovation. For exploratory reasons, four additional adoption related dependent variables were measured, the Attitude towards the product, Willingness to try the product, Willingness to buy the product and Resistance towards the product. These additional variables were tested to examine the possible effects of familiar music on product attitude, buying behaviour, adoption intention and degree of resistance. Attitude is an important predictor of behaviour according to the Theory of Planned behaviour of Ajzen (1991) and could influence buying behaviour and thus the intention to adopt a radical innovation as well. Furthermore, the variables Willingness to buy the product and Willingness to try the product are closely related to the intention to adopt a product and will therefore be included as well. As was explained in the literature review section, radical innovations tend to induce resistance in consumers, which prevents them from being willing to adopt the product, it is therefore interesting to see if resistance will decrease as a consequence of playing familiar or even unfamiliar music as opposed to playing no music at all.

3.7.1. Intention to adopt the radical innovation

In order to measure The intention to adopt the radical innovation three items were used with a seven point Likert scale ranging from Strongly disagree/Strongly agree based on research from Zahid and Din (2019). The three items used were as follows: I intend to use this product in the future, It is likely that I will use this product in the future and I will use this product in the future. The reliability of this measurement was good (α = .94)
3.7.2. **Attitude towards the product**

To measure *The Attitude towards the product* three items were used with a seven point semantic differential scale based on research from Gopinath and Glassman (2008). These three items were as follows: Unpleasant/Pleasant, Unfavourable/Favourable and Dislike/Like. The statement accompanying these items was: *My feelings towards the product are*. The reliability of this measurement was good ($\alpha = .88$)

3.7.3. **Willingness to try the product**

In order to measure *The Willingness to try the product* three items were used with a seven point Likert scale ranging from Strongly disagree/Strongly agree based on research from Chaudhuri et al. (2010). The three items used were as follows: *I would be willing to spend time to know the product better, I would be willing to spend the effort to know the product better* and *If asked, I am willing to test the product*. The reliability of this measurement was good ($\alpha = .80$)

3.7.4. **Willingness to buy the product**

In order to measure *The Willingness to buy the product* three items were used with a seven point Likert scale ranging from Very low/Very high based on research from Dodds, Monroe and Grewal (1991). The three items used were as follows: *The likelihood of purchasing this product is, The probability that I would consider buying the product is* and *My willingness to buy the product is*. The reliability of this measurement was good ($\alpha = .95$)

3.7.5. **Resistance towards the product**

To test the degree of resistance towards the product in question and why it imposed resistance, three items were used based on Kleijnen et al. (2009), Ram and Sheth (1989) and Laukkanen et al. (2007). To test the degree of resistance a seven point scale was used, ranging from Strongly disagree/Strongly agree and was accompanied by the following item: *I feel resistance towards this product*. If participants experienced resistance an open follow up question was asked which was: *Could you argue why you experience resistance?*. Finally, a list with options was provided and participants were asked to select the most fitting option for experiencing resistance. The options were: *It does not fit into my daily life/lifestyle, The image does not appeal to me, The product has too many economical and/or financial risks, I*
am worried that this product is harmful or poses a threat to my health, I am worried that this product will not be accepted within my social circle, I value my current products (tradition).

3.8. Control variables Music

To control if the selected pieces of music were indeed perceived as familiar and unfamiliar as was established in the pre-test and if the selected pieces of music elicited a high and similar level of Mood, Arousal and Likeability to guarantee that music only differed in regard of familiarity, the same measurements were used as in the pre-test.

3.8.1. Familiarity

Song familiarity was measured with the use of three items based on research by Roehm (2001) where participants could rate each item based on a seven point bipolar scale. These items were: not at all familiar/highly familiar, don't know it well at all/know it very well, don’t recognize it right away/ recognize it right away. The reliability of this measurement was good (α = .98)

3.8.2. Mood

To measure if the music had a positive mood, four items with a seven point scale were selected from research by Chou and Lien (2014). The scale used in this research was: Not at all/Very and the items were: Happy, joyful, pleased and cheerful. The statement accompanying these items and scales was: This music makes me feel. The reliability of these measurements was good (α = .91)

3.8.3. Arousal

In order to measure if music elicited a high level of Arousal. Five adjectives to measure arousal were used based on research by Thompson et al. (2001). These adjectives were: Lively, active, energetic, full of pep and vigorous and were measured with a seven point scale ranging from Not at all/Very. The same statement as mentioned above was used to accompany these items and scales, which was: This music makes me feel. The reliability of these measurements was good for all selected pieces of music was good (α = .91)
3.8.4. **Likeability**

To test if the participants liked the music they listened to, one item with a seven point scale was used from Holbrook and Schindler (1989). This item was: *I dislike it a lot/I like it a lot.* The question accompanying this item was: *To what extent did you like the music played in this clip?*

3.9. **Moderator Product expertise**

To test if being familiar with a similar product category weakens the possible effect of familiar music and unfamiliar music on the intention to adopt a radical innovation and strengthens the effect of no music on the intention to adopt a radical innovation, three items were used based on research by Sussman and Siegel (2003), Bhattacherjee and Sanford (2006) and Schweitzer and Van den Hende (2016) to test the product expertise of participants regarding a similar product category. These three items were: *To what extent are you an expert on the topic of sustainable water bottles?, How would you rate your prior knowledge about sustainable water bottles? and How knowledgeable are you on using sustainable water bottles?* Answers ranged from *Not at all/To a great extent.* The reliability of this measure was good (α=.92)

3.10. **Procedure**

The questionnaire was distributed online via the programme of Qualtrics. Participants were randomly assigned to one of the music conditions (Familiar music, Unfamiliar music and No music). The questionnaire was distributed via Whatsapp, Facebook, Linkedin, Instagram and email. The questionnaire was filled in on computers and smartphones. Before participants were exposed to the video showing a radical innovation accompanied by one of the music conditions, a brief introduction was shown. The introduction stated that participation was completely voluntary and that answers would remain anonymous. It also mentioned that the questionnaire would approximately take 10 minutes. Furthermore, the introduction described that the results would be used for a Master thesis at the Radboud University. In the end the names of the students and supervisors were mentioned. In order to make participants unaware of the manipulation the goal of the research has not been described.

After this introduction, participants were exposed to a short sound check. This was done to ensure that sound was working properly for the participants. Participants were asked to fill in
the word they heard in the sound check, which was “Coffee”. Next, participants were exposed to a brief description of the Ohoo Waterball and a 32 second video clip showing the Ohoo Waterball, which included a fragment of familiar music, unfamiliar music or no music at all, depending on the version of the questionnaire. After this video participants were asked to answer questions about their attitude towards the product, willingness to try the product, intention to adopt the product, willingness to buy the product and their degree of resistance towards the product. If participants had resistance towards the product two follow up questions were asked to establish why they experienced resistance. At the top of every question the same image of the Ohoo Waterball was shown so participants would still have a clear picture of the product when answering the questions. When these sets of questions were answered, participants were asked to listen to a 40 second fragment of the music they had heard in the video, which was either familiar or unfamiliar depending on the version of the questionnaire. After listening to this fragment, participants were asked questions regarding the piece of music they heard. This was done to control for music familiarity, a positive mood, a high level of arousal and likeability. After these questions participants were exposed to the video showing the Ohoo Waterball again. After this video, participants were asked about their product expertise regarding sustainable water bottles. Finally, at the end of the questionnaire, participants were asked some general questions regarding demographics including: gender, age and educational level. When participants were done with answering all questions they were thanked for their response and received the option to send an email in case of further questions. No reward was given for filling in the questionnaire.

3.11. Statistical treatment

SPSS Statistics 25.0 was used for the analysis of the results and for conducting all statistical tests. An Independent sample T test was conducted to test for significant differences between the selected piece of familiar and unfamiliar music regarding Familiarity, Mood, Arousal and Likeability. A Manova was conducted to test for significant differences between the Types of Music (Familiar music, Unfamiliar music and No music) for every dependent variable (Intention to adopt the radical innovation, Attitude towards the product, Willingness to try the product, Willingness to buy the product, and Resistance towards the product). Also, an Ancova was conducted to test the moderating effect of Product expertise on the Intention to Adopt the radical innovation for all music conditions and a Two way Anova was used to test the moderating effect of Music Likeability on all dependent variables (Intention to adopt the radical innovation, Attitude towards the product, Willingness to try the product, Willingness
to buy the product, and Resistance towards the product). Finally a Manova was conducted to test for significant differences between the degree of Music Likeability (Low Likeability and High Likeability and No music) for every dependent variable (Intention to adopt the radical innovation, Attitude towards the product, Willingness to try the product, Willingness to buy the product, and Resistance towards the product).

4. Results

4.1. Control variables music

4.1.1. Music Familiarity

When looking at the scores regarding familiarity for Sonnentanz ($M = 5.80, SD = 1.58$) and Blused and Abused ($M = 2.23, SD = 1.59$) it can be concluded that the piece of familiar music (Sonnentanz) was indeed perceived as familiar and that the piece of unfamiliar music (Blused and Abused) was indeed perceived as unfamiliar. An independent sample t-test showed that both pieces of music differed significantly on their level of familiarity ($t (131) = 12.97, p < .001$).

4.1.2. Music Mood

When looking at the scores regarding Mood for Sonnentanz ($M = 5.17, SD = 1.13$) and Blused and Abused ($M = 4.93, SD = 1.03$) it can be concluded that both pieces of music were perceived as having a positive mood. An independent sample t-test did not show a significant difference regarding their level of positive mood ($t (131) = 1.24, p = .216$).

4.1.3. Music Arousal

When looking at the scores regarding Arousal for Sonnentanz ($M = 4.73, SD = 1.11$) and Blused and Abused ($M = 4.49, SD = 1.01$) it can be concluded that both pieces of music were perceived as having a high level of Arousal. An independent sample t-test did not show a significant difference regarding their level of arousal ($t (131) = 1.31, p = .191$).

4.1.4. Music Likeability

When looking at the scores regarding Likeability for Sonnentanz ($M = 5.13, SD = 1.32$) and Blused and Abused ($M = 4.30, SD = 1.39$) it can be concluded that both pieces of music were
well liked. However, an independent sample t-test showed a significant difference regarding the level of Likeability ($t(131) = 3.56, p = .001$).

4.2. **Results Dependent variables Full Sample**

4.2.1. **Intention to adopt the radical innovation**

A Manova did not show a significant difference between Familiar music, Unfamiliar music and No music with regard to the Intention to adopt the radical innovation ($F(2, 200) = 0.443, p = .643$). The intention to adopt the radical innovation did not significantly differ for Familiar music ($M = 3.49, SD = 1.38$) compared to Unfamiliar music ($M = 3.36, SD = 1.45$), ($p = .603$) or No music ($M = 3.59, SD = 1.34$), ($p = .672$).

4.2.2. **Attitude towards the product**

A Manova did not show a significant difference between Familiar music, Unfamiliar music and No music with regard to the Attitude towards the product ($F(2, 200) = 0.460, p = .632$). The Attitude towards the product did not significantly differ for Familiar music ($M = 4.47, SD = 1.35$) compared to Unfamiliar music ($M = 4.30, SD = 1.30$), ($p = .458$) or No music ($M = 4.52, SD = 1.45$), ($p = .848$).

4.2.3. **Willingness to try the product**

A Manova did not show a significant difference between Familiar music, Unfamiliar music and No music with regard to the Willingness to try the product ($F(2, 200) = 0.061, p = .940$). The Willingness to try the product did not significantly differ for Familiar music ($M = 4.63, SD = 1.26$) compared to Unfamiliar music ($M = 4.68, SD = 1.21$), ($p = .837$) or No music ($M = 4.60, SD = 1.34$), ($p = .882$).

4.2.4. **Willingness to buy the product**

A Manova did not show a significant difference between Familiar music, Unfamiliar music and No music with regard to the Willingness to buy the product ($F(2, 200) = 0.843, p = .432$). The Willingness to buy the product did not significantly differ for Familiar music ($M = 3.49, SD = 1.51$) compared to Unfamiliar music ($M = 3.15, SD = 1.65$), ($p = .208$) or No music ($M = 3.33, SD = 1.46$), ($p = .528$)
4.2.5. Resistance towards the product

A Manova did not show a significant difference between Familiar music, Unfamiliar music and No music with regard to the Resistance towards the product \( (F(2, 200) = 0.707, p = .494) \). The Resistance towards the product did not significantly differ for Familiar music \( (M = 3.87, SD = 1.84) \) compared to Unfamiliar music \( (M = 4.22, SD = 1.66) \), \( (p = .253) \) or No music \( (M = 3.94, SD = 1.82) \), \( (p = .813) \).

The main reason for resistance towards the Ohoo Waterball was the same for every version of the questionnaire, namely: I am worried that this product is harmful or poses a threat to my health (Familiar music: 26.1%; Unfamiliar music: 25% and No Music: 22.9%) 

4.3. Results Dependent variables Partial sample

The same Manova test was again conducted for all dependent variables but only included the participants who saw the entire video (32 seconds) to test if this would create different results. However, no significant differences were found between this group and the full sample group when looking at each dependent variable.

4.4. Moderator variable

4.4.1. Product expertise

An Ancova did not show a significant interaction between the effect of Type of Music and Product Expertise on the Intention to adopt a radical innovation \( (F(2, 197) = 0.211, p = .810) \). A Two way Anova showed that participants who scored high on product expertise regarding sustainable water bottles \( (3.5 \text{ and higher out of } 7) \) did not significantly scored lower in terms of their Intention to adopt a radical innovation when exposed to Familiar music \( (M = 3.58, SD = 1.68) \), compared to participants who scored low on product expertise regarding sustainable water bottles \( (\text{lower than } 3.5 \text{ out of } 7) \) when exposed to Familiar music \( (M = 3.42, SD = 1.06) \), \( (p = .636) \). Furthermore, participants who scored higher on product expertise regarding sustainable water bottles did not significantly scored lower in terms of their Intention to adopt a radical innovation when exposed to Unfamiliar music \( (M = 3.63, SD = 1.32) \), compared to participants who scored low on product expertise regarding sustainable water bottles when exposed to Unfamiliar music \( (M = 3.21, SD = 1.52) \), \( (p = .270) \). Finally, participants who scored high on product expertise regarding sustainable water bottles did not significantly scored higher in terms of their Intention to adopt a radical innovation when exposed to No
music ($M = 3.64, SD = 1.40$), compared to participants who scored low on product expertise regarding sustainable water bottles when exposed to No music ($M = 3.56, SD = 1.32$), ($p = .810$) The respective findings are summarized in Table 1 below.

Table 1. *Intention to adopt the product for participants scoring low on product expertise regarding sustainable water bottles (3.5 and under, with 1 being the lowest) when exposed to familiar music (FM), unfamiliar music (UM) and no music (NM) and for participants scoring high on product expertise regarding sustainable water bottles (3.5 and above, with 7 being the highest) when exposed to familiar music (FM), unfamiliar music (UM) or no music (NM) (1 = no intention to adopt the product at all, 7 = very high intention to adopt the product)*

<table>
<thead>
<tr>
<th>Product expertise</th>
<th>$M$</th>
<th>$SD$</th>
<th>$n$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low (FM)</td>
<td>3.42</td>
<td>1.06</td>
<td>36</td>
</tr>
<tr>
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<td>33</td>
</tr>
<tr>
<td>Low (UM)</td>
<td>3.21</td>
<td>1.52</td>
<td>40</td>
</tr>
<tr>
<td>High (UM)</td>
<td>3.63</td>
<td>1.32</td>
<td>24</td>
</tr>
<tr>
<td>Low (NM)</td>
<td>3.56</td>
<td>1.32</td>
<td>44</td>
</tr>
<tr>
<td>High (NM)</td>
<td>3.64</td>
<td>1.40</td>
<td>26</td>
</tr>
</tbody>
</table>

4.5. Music Likeability

Due to the fact that both pieces of music differed significantly in terms of Likeability a Two way Anova was conducted to test for a significant interaction effect between both types of music conditions (Familiar and Unfamiliar) and Likeability on the: Intention to adopt the radical innovation, Attitude towards the product, Willingness to try the product, Willingness to buy the product, and Resistance towards the product.

4.5.1. Intention to adopt the radical innovation

A Two way Anova did not show a significant interaction between the effect of Type of music (Familiar and Unfamiliar) and Likeability on the Intention to adopt a radical innovation ($F (1, 129) = 1.366, p = .245$). However, a significant direct effect was found between the effect of Likeability and the Intention to adopt the product. A Manova showed a significant difference between Low Likeability and High Likeability with regard to the Intention to adopt the radical
innovation \((F(1, 131) = 7.676, p = .006)\). The intention to adopt the radical innovation was significantly higher for participants who liked the music \((M = 3.70, SD = 1.33)\) compared to people who did not like the music or were indifferent towards the music \((M = 3.03, SD = 1.45)\). Based on these results a Manova was conducted to test if there would also be a significant difference in effect between participants who liked the music and participants who were not exposed to music on the intention to adopt the radical innovations. A Manova showed no significant difference between High Likeability and No Music with regard to the Intention to adopt the radical innovation \((F(1, 147) = 0.273, p = .602)\). The intention to adopt the radical innovation was not significantly higher for participants who liked the music \((M = 3.70, SD = 1.33)\) compared to people who were not exposed to music \((M = 3.59, SD = 1.34)\). The respective findings are summarized in Table 2 below.

Table 2. *Intention to adopt the radical innovation scores for participants with a high level of Likeability (5 and above, with 7 being the highest), participants with a neutral and low level of Likeability (4 and under, with 1 being the lowest) and participants not exposed to music (1 = no intention to adopt the product at all, 7 = very high intention to adopt the product)*

<table>
<thead>
<tr>
<th>Music Likeability</th>
<th>M</th>
<th>SD</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>High level</td>
<td>3.70</td>
<td>1.33</td>
<td>79</td>
</tr>
<tr>
<td>Low or neutral level</td>
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<td>1.45</td>
<td>54</td>
</tr>
<tr>
<td>No music</td>
<td>3.59</td>
<td>1.34</td>
<td>70</td>
</tr>
</tbody>
</table>

4.5.2. **Attitude towards the product**

A Two way Anova showed a significant interaction between the effect of Type of music (Familiar and Unfamiliar) and Likeability on the Attitude towards the product \((F(1, 129) = 4.577, p = .034)\). Familiar music had a significant effect on the Attitude towards the product, compared to Unfamiliar music, but only if the music was perceived as Highly Likeable. Furthermore, a significant direct effect was found between the effect of Likeability and Attitude towards the product. A Manova showed a significant difference between Low Likeability and High Likeability with regard to the Attitude towards the product \((F(1, 131) = 14.008, p < .001)\). The attitude towards the product was significantly higher for participants who liked the music \((M = 4.73, SD = 1.09)\) compared to people who did not like the music or
were indifferent towards the music \((M = 3.90, SD = 1.48)\) Based on these results a Manova was conducted to test if there would also be a significant difference in effect between participants who liked the music and participants who were not exposed to music on the attitude towards the product. A Manova showed no significant difference between High Likeability and No Music with regard to the Attitude towards the product \((F(1, 147) = 1.022, p = .314)\). The attitude towards the product was not significantly higher for participants who liked the music \((M = 4.73, SD = 1.09)\) compared to people who were not exposed to music \((M = 4.52, SD = 1.45)\). The respective findings are summarized in Table 3 below.

Table 3.  
**Attitude towards the product scores for participants with a high level of Likeability (5 and above, with 7 being the highest), participants with a neutral and low level of Likeability (4 and under, with 1 being the lowest) and participants who were not exposed to music (1 = very negative attitude towards the product, 7 = very positive attitude towards the product)**

<table>
<thead>
<tr>
<th>Music Likeability</th>
<th>M</th>
<th>SD</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>High level</td>
<td>4.73</td>
<td>1.09</td>
<td>79</td>
</tr>
<tr>
<td>Low or neutral level</td>
<td>3.90</td>
<td>1.48</td>
<td>54</td>
</tr>
<tr>
<td>No music</td>
<td>4.52</td>
<td>1.45</td>
<td>70</td>
</tr>
</tbody>
</table>

### 4.5.3. Willingness to try the product

A Two way Anova did not show a significant interaction between the effect of Type of music (Familiar and Unfamiliar) and Likeability on the Willingness to try the product \((F(1, 129) = 2.388, p = .125)\). However, a significant direct effect was found between Likeability and the Willingness to try the product. A Manova showed a significant difference between Low Likeability and High Likeability with regard to the Willingness to try the product \((F(1, 131) = 12.842, p < .001)\). The willingness to try the product was significantly higher for participants who liked the music \((M = 4.96, SD = 1.05)\) compared to people who did not like the music or were indifferent towards the music \((M = 4.21, SD = 1.36)\). Based on these results a Manova was conducted to test if there would also be a significant difference in effect between participants who liked the music and participants who were not exposed to music on the willingness to try the product. A Manova showed no significant difference between High Likeability and No Music with regard to the Willingness to try the product \((F(1, 147) = \)
3.340, $p = .070$). The willingness to try the product was not significantly higher for participants who liked the music ($M = 4.96, SD = 1.05$) compared to people who were not exposed to music ($M = 4.60, SD = 1.34$). The respective findings are summarized in Table 4 below.

Table 4.  **Willingness to try the product scores for participants with a high level of Likeability (5 and above, with 7 being the highest), participants with a neutral and low level of Likeability (4 and under, with 1 being the lowest) and participants who were no exposed to music (1 = not willing to try the product at all, 7 = very much willing to try the product)**

<table>
<thead>
<tr>
<th>Music Likeability</th>
<th>$M$</th>
<th>$SD$</th>
<th>$n$</th>
</tr>
</thead>
<tbody>
<tr>
<td>High level</td>
<td>4.96</td>
<td>1.05</td>
<td>79</td>
</tr>
<tr>
<td>Low or neutral level</td>
<td>4.21</td>
<td>1.36</td>
<td>54</td>
</tr>
<tr>
<td>No music</td>
<td>4.60</td>
<td>1.34</td>
<td>70</td>
</tr>
</tbody>
</table>

4.5.4. **Willingness to buy the product**

A Two way Anova did not show a significant interaction between the effect of Type of music (Familiar and Unfamiliar) and Likeability on the Willingness to buy the product ($F(1, 129) = .746, p = .389$). However, a significant direct effect was found between Likeability and the Willingness to buy the product. A Manova showed a significant difference between Low Likeability and High Likeability with regard to the Willingness to buy the product ($F(1, 131) = 10.114, p = .002$). The willingness to buy the product was significantly higher for participants who liked the music ($M = 3.68, SD = 1.52$) compared to people who did not like the music or were indifferent towards the music ($M = 2.81, SD = 1.54$). Based on these results a Manova was conducted to test if there would also be a significant difference in effect between participants who liked the music and participants who were not exposed to music on the willingness to buy the product. A Manova showed no significant difference between High Likeability and No Music with regard to the Willingness to buy the product ($F(1, 147) = 1.942, p = .166$). The willingness to buy the product was not significantly higher for participants who liked the music ($M = 3.68, SD = 1.52$) compared to people who were not exposed to music ($M = 3.33, SD = 1.46$). The respective findings are summarized in Table 5 below.
Table 5. Willingness to buy the product scores for participants with a high level of Likeability (5 and above, with 7 being the highest), participants with a neutral and low level of Likeability (4 and under, with 1 being the lowest) and participants who were not exposed to music (1 = not willing to buy the product at all, 7 = very much willing to buy the product)

<table>
<thead>
<tr>
<th>Music Likeability</th>
<th>Willingness to buy the product</th>
</tr>
</thead>
<tbody>
<tr>
<td>High level</td>
<td>M=3.68, SD=1.52, n=79</td>
</tr>
<tr>
<td>Low or neutral level</td>
<td>M=2.81, SD=1.54, n=54</td>
</tr>
<tr>
<td>No music</td>
<td>M=3.33, SD=1.46, n=70</td>
</tr>
</tbody>
</table>

4.5.5. Resistance towards the product

A Two way Anova did not show a significant interaction between the effect of Type of music (Familiar and Unfamiliar) and Likeability on the Resistance towards the product ($F(1, 129) = 1.976, p = .162$). However a significant direct effect was found between Likeability and the Resistance towards the product. A Manova showed a significant difference between Low Likeability and High Likeability with regard to the Resistance towards the product ($F(1, 131) = 9.684, p = .002$). The resistance towards the product was significantly lower for participants who liked the music ($M = 3.66, SD = 1.67$) compared to people who did not like the music or were indifferent towards the music ($M = 4.59, SD = 1.74$). Based on these results a Manova was conducted to test if there would also be a significant difference in effect between participants who liked the music and participants who were not exposed to music on the resistance towards the product. A Manova showed no significant difference between High Likeability and No Music with regard to the Resistance towards the product ($F(1, 147) = 0.992, p = .321$). The resistance towards the product was not significantly lower for participants who liked the music ($M = 3.66, SD = 1.67$) compared to people who were not exposed to music ($M = 3.94, SD = 1.82$). The respective findings are summarized in Table 6 below.
Table 6. Resistance towards the product scores for participants with a high level of Likeability (5 and above with 7 being the highest), participants with a neutral and low level of Likeability (4 and under with 1 being the lowest) and participants who were not exposed to music (1 = very low resistance towards the product, 7 = very high resistance towards the product)

<table>
<thead>
<tr>
<th>Music Likeability</th>
<th>$M$</th>
<th>$SD$</th>
<th>$n$</th>
</tr>
</thead>
<tbody>
<tr>
<td>High level</td>
<td>3.66</td>
<td>1.67</td>
<td>79</td>
</tr>
<tr>
<td>Low or neutral level</td>
<td>4.59</td>
<td>1.74</td>
<td>54</td>
</tr>
<tr>
<td>No music</td>
<td>3.94</td>
<td>1.82</td>
<td>70</td>
</tr>
</tbody>
</table>

5. Conclusion

The aim of this project was to research if familiar music had a significant positive effect on the intention to adopt a radical innovation. To test this effect, familiar music was incorporated into a video showcasing a radical innovation. Furthermore, the same video could also include unfamiliar music or no music. This was done to test for significant differences between these three types of music, on the intention to adopt a radical innovation. Two hypotheses were formulated, to test if the type of music had a significant effect on the intention to adopt a radical innovation. In Hypothesis 1a it was expected that incorporating familiar music into a radical innovation exposure, would lead to a higher intention to adopt a radical innovation compared to the incorporation of unfamiliar or no music. No significant differences were found between familiar music, unfamiliar music or no music. Hypothesis 1a is therefore rejected. In hypothesis 1b it was expected that incorporating unfamiliar music into a radical innovation exposure, would lead to a higher intention to adopt a radical innovation compared to the incorporation of no music. As was already established in the previous hypothesis, no significant differences were found between unfamiliar music and no music regarding the intention to adopt a radical innovation. Hypothesis 1b is therefore rejected. A third hypothesis has been formulated to test the moderating effect of product expertise for the type of music on the intention to adopt a radical innovation. In this hypothesis, labelled as hypothesis 2 it was expected that the positive effects of familiar and unfamiliar music on the intention to adopt a radical innovation would be weaker for people with a higher level of similar product expertise, compared to people who do not have the same level of expertise. While the effect of a higher level of similar product expertise would strengthen the effect of participants
exposed to no music on the intention to adopt a radical innovation. No significant interaction effect was found between type of music and product expertise on the intention to adopt a radical innovation, therefore hypothesis 2 is rejected. Furthermore, although not included in the research question or hypothesis, four additional exploratory dependent variables were tested. These were: Attitude towards the product, Willingness to try the product, Willingness to buy the product and Resistance towards the product. The effect of the type of music on all the additional exploratory variables showed no significant differences between the three music conditions. Finally, the effect of Music Likeability on all dependent variables has also been researched. This was due to the fact that Familiar music was significantly more well liked, compared to Unfamiliar music. Participants who scored high on Music Likeability scored significantly higher on all dependent variables, compared to participants who scored low or neutral on Music Likeability. However, no significant difference was found between participants who scored high on Music Likeability, compared to participants who were not exposed to music for all dependent variables. Finally, a positive significant interaction effect was found between both types of music (Familiar and Unfamiliar) and Music Likeability on the Attitude towards the product. This effect showed that familiar music only had a significant effect on the Attitude towards the product compared to unfamiliar music if familiar music was well liked.

6. Discussion

The fact that familiar music did not have a significant positive effect on the intention to adopt a radical innovation is not in line with research by Chou and Lien (2010) and Chou and Lien (2014). Research by Chou and Lien (2010) showed that familiar songs had a positive influence on creating a positive attitude towards advertisements and brands, because of favourable nostalgic thoughts. Furthermore, Chou and Lien (2014) found a positive effect between song familiarity and product attitude as well as purchase intention. Differences in results found between both studies and this project, could be explained by the fact that both studies incorporated older familiar music which contained lyrics, as opposed to older familiar music which originally does not contain lyrics as was the case with this project. A familiar melody accompanied by familiar lyrics, might therefore be more suited in inducing favourable nostalgic thoughts than a familiar melody alone. This finding is also in line with research by Chou and Lien (2014) who stated that the relevance of lyrics can play an important role in old songs when it comes to creating positive effects of nostalgia and emotions. Finally, Chou and
Lien (2010) used familiar songs which were at least 10 years old in their research, whereas Sonntanz by Klangkarusell was 7 years old. Perhaps more favourable nostalgic thoughts would have been created if the song in this project was older or at least 10 years old as well.

Furthermore, unfamiliar music did not have a positive significant effect on the intention to adopt compared to when no music is played. This result is not in line with the Elaboration Likelihood Model (ELM) of Patty and Cacioppo (1988). This model states that if people don’t possess the ability, motivation or both to correctly interpret a message or in this case a radical innovation, the emotions of the receiver should be targeted instead of the rationality of the receiver, if the sender wishes to persuade the receiver to use the radical innovation. Overall, people don’t possess the ability to correctly interpret a radical innovation, because it’s a substantially new product which they have likely never seen before, and therefore targeting the emotions of the receiver would be a more effective method of persuasion than targeting the rationality of the receiver. As was already discussed in the literature review, music is very capable in targeting emotions. Therefore it was expected that unfamiliar music, which was well liked, had a positive mood and a high level of arousal, would still have a positive significant effect on the intention to adopt a radical innovation compared to no music, as it still targets the emotions of the receiver with positive feelings. A possible reason a different result was found than expected could lie in the fact that, although containing positive aspects, unfamiliar music still remains completely new for participants. This could have negated these positive aspects as they were already faced by an unknown radical innovation. This could have created more feelings of stress and anxiety as they were faced by two unknown aspects at the same time, on a visionary level as well as on an auditory level.

In the final hypothesis no significant interaction effect was found between all three types of music and product expertise on the intention to adopt a product. This finding is not in line with research by Schweitzer and Van den Hende (2017). These researchers found that familiarity with a similar product category of a radical innovation, helped to increase identifiability of advantages and disadvantages of the product. Based on this finding it was hypothesized that participants with a higher level of a similar product category expertise, would be more qualified to understand the Ohoo Water ball, and would therefore be less affected by emotions as opposed to people with a low level of similar product expertise, based on the ELM model. Furthermore, people with a high level of similar product category expertise were expected to score significantly higher on the intention to adopt the radical innovation when exposed to no music compared to people with a low level of similar product
category expertise, since people with a high level of similar product category would understand the video better and would focus more on the rational aspects. Being familiar with sustainable water bottles did not significantly weaken the effect of familiar and unfamiliar music on the intention to adopt the radical innovation and it did not strengthen the effect for no music on the intention to adopt the radical innovation. Differences in results could be explained by the fact that in the research by Schweitzer and Van den Hende (2017) the concept of the product was described to participants on paper, instead of being shown to participants via a video. This could have made it easier for people who are familiar with a similar product category to gather information about the new product and identify the advantages and disadvantages as opposed to a video which did not include any written or verbal information about the product whatsoever. Finally, since the Ohoo Water ball is a very new and unique product on its own, it was very hard to find a comparable category for it. Therefore, despite having expertise in the field of sustainable water bottles, participants could still have had trouble grasping and understanding the Ohoo water ball and the idea behind it, since it is such a unique product, which cannot be easily compared to a similar product category.

Despite not being discussed in the literature review, similar effects were suspected for all the other exploratory variables as well (Attitude towards the product, Willingness to buy the product, Willingness to try the product and Resistance towards the product) since these dependent variables can said to be intertwined with the main dependent variable: Intention to adopt the radical innovation. A difference in results can therefore also be attributed to the reasons discussed above regarding the intention to adopt the radical innovation for all additional dependent variables (Attitude towards the product, Willingness to buy the product, Willingness to try the product and Resistance towards the product).

The fact that Music likeability had a significant effect on all five dependent variables is in line with research by Galan (2009) and Broekemier et al. (2008). In research by Galan (2009) it was found that music likeability had a significant effect on the attitude towards the brand, attitude towards the advertisement and the intention to buy the product. This is also in line with the fact that a significant interaction effect was found between both types of music (Familiar and Unfamiliar) and music likeability on the attitude towards the product. Furthermore, research by Broekmier et al. (2008) showed that shopping intentions are positively influenced when happy and likeable music is played. Both of these researches show that purchase intentions and thus the intention to adopt the product can be positively
affected by playing music which is perceived as likeable. The results of this project also seem to confirm that these findings apply for radical innovations.

6.1. Limitations

This project has a few limitations which are worth mentioning. First of all, due to the Covid 19 pandemic taking place at the time of the project, a lab study which would originally be the ideal method for this project could not be done. Instead an online questionnaire was done, as data could still be collected, while abiding to the rules of social distancing. A lab study would have ensured that participants would have watched the whole video and would have guaranteed that participants would all be exposed to the same environmental setting as well as the same music conditions (volume, headphones, etc). This would have enhanced the data quality. Secondly, the selected familiar song of Sonnentanz might not have been old enough to create true feelings of nostalgia, as it was 7 years old. Finally, the song did not contain lyrics, to avoid the confounding of lyrics, however, lyrics do play a role when it comes to creating nostalgic feelings and emotions (Chou & Lien, 2014). Results could have been different if a song of at least 10 years old was chosen which contained familiar lyrics.

6.2. Implications

Despite these limitations, this project still provided some valuable insights for companies wanting to successfully introduce new radical innovations. No significant difference was found between incorporating familiar music, unfamiliar music or no music into a radical innovation exposure, when it comes to positively influencing the intention to adopt the radical innovation. On the contrary, the music likeability of the song selected to play in a radical innovation exposure seems of utter importance, when wanting to positively influence the consumers’: Intention to adopt the product, attitude towards the product, willingness to try the product, willingness to buy the product and resistance towards the product. Songs which are experienced as well liked score significantly better on all these aspects, compared to music which is not well liked or which people feel indifferent towards. However, no significant difference was found between songs which are experienced as well liked compared to when no music was played for all five dependent variables. Due to the fact that all advertisements contain sound nowadays with the majority of them including music as well, it would be odd for companies to promote their radical innovation in a video without sound. Therefore, despite this difference being non-significant it is still recommended for companies to include songs
which are well liked into a radical innovation exposure such as an advertisement, as it can severely increase the chances of radical innovation adoption compared to songs which are experienced as not well liked or neutral. Despite the fact that familiar music does not seem to have a significant positive effect on the intention to adopt a radical innovation, it is still recommended to incorporate familiar music into a radical innovation exposure. This is due to the fact that familiar music scored significantly higher on music likeability than unfamiliar music as was established in this project. It is therefore opted that familiar music should be included into a radical innovation exposure, not because of feelings of nostalgia, but because of its high likeability.

6.3. Further research

In future research it is recommended that the effect of incorporating familiar and unfamiliar music with lyrics is also studied and compared with familiar and unfamiliar music which does not originally contain lyrics as was the case in this research. This would be a good method to account for the possible effect of lyrics on the intention to adopt a radical innovation. Furthermore, it would also be interesting to do a similar study, but in a lab setting to control for environmental and music settings, as this would significantly improve the quality of the data.

6.4. Closing words

Despite the fact that familiar music did not have a significant positive impact on the intention to adopt a radical innovation, incorporating familiar music into a radical innovation exposure can still be a powerful tool for companies, because of its high likeability. If companies chose to incorporate music into their promotion videos showing a radical innovation, it is essential that the music is experienced as well liked. Therefore, before airing such a promotion video it is highly recommended that the selected music is thoroughly tested for a high level of likeability as this can severely impact the success of a radical innovation.
Reference list


Schweitzer, F. and Van den Hende, E. (2016). Drivers and Consequences of Narrative Transportation: Understanding the Role of Stories and Domain-Specific Skills in


Appendix A

Pre-test results music

Table 7. The level of music familiarity for all four pieces of music (FM=Familiar music, UM=Unfamiliar music) in the pre-test (1 = not familiar at all, 7 = very familiar)

<table>
<thead>
<tr>
<th>Song</th>
<th>M</th>
<th>SD</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blused and Abused (UM)</td>
<td>2.03</td>
<td>1.27</td>
<td>45</td>
</tr>
<tr>
<td>Tea for Two (UM)</td>
<td>1.55</td>
<td>0.98</td>
<td>45</td>
</tr>
<tr>
<td>Sonnentanz (FM)</td>
<td>5.32</td>
<td>1.97</td>
<td>24</td>
</tr>
<tr>
<td>Tequila (FM)</td>
<td>5.60</td>
<td>0.98</td>
<td>24</td>
</tr>
</tbody>
</table>

Table 8. The level of positive mood for all four pieces of music (FM=Familiar music, UM=Unfamiliar music) in the pre-test (1 = very negative mood, 7 = very positive mood)

<table>
<thead>
<tr>
<th>Song</th>
<th>M</th>
<th>SD</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blused and Abused (UM)</td>
<td>4.56</td>
<td>1.28</td>
<td>45</td>
</tr>
<tr>
<td>Tea for Two (UM)</td>
<td>3.73</td>
<td>1.30</td>
<td>45</td>
</tr>
<tr>
<td>Sonnentanz (FM)</td>
<td>5.06</td>
<td>1.53</td>
<td>24</td>
</tr>
<tr>
<td>Tequila (FM)</td>
<td>5.44</td>
<td>1.02</td>
<td>24</td>
</tr>
</tbody>
</table>
Table 9. *The level of arousal for all four pieces of music (FM=Familiar music, UM=Unfamiliar music) in the pre-test (1 = very low arousal, 7 = very high arousal)*

<table>
<thead>
<tr>
<th>Song</th>
<th>$M$</th>
<th>$SD$</th>
<th>$n$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blused and Abused (UM)</td>
<td>4.20</td>
<td>1.22</td>
<td>45</td>
</tr>
<tr>
<td>Tea for Two (UM)</td>
<td>3.60</td>
<td>1.40</td>
<td>45</td>
</tr>
<tr>
<td>Sonnentanz (FM)</td>
<td>4.81</td>
<td>1.57</td>
<td>24</td>
</tr>
<tr>
<td>Tequila (FM)</td>
<td>5.24</td>
<td>0.99</td>
<td>24</td>
</tr>
</tbody>
</table>

Table 10. *The level of music likeability for all four pieces of music (FM=Familiar music, UM=Unfamiliar music) in the pre-test (1 = do not like it at all, 7 = very much like it)*

<table>
<thead>
<tr>
<th>Song</th>
<th>$M$</th>
<th>$SD$</th>
<th>$n$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blused and Abused (UM)</td>
<td>3.96</td>
<td>1.52</td>
<td>45</td>
</tr>
<tr>
<td>Tea for Two (UM)</td>
<td>3.16</td>
<td>1.36</td>
<td>45</td>
</tr>
<tr>
<td>Sonnentanz (FM)</td>
<td>5.46</td>
<td>1.72</td>
<td>24</td>
</tr>
<tr>
<td>Tequila (FM)</td>
<td>5.33</td>
<td>1.09</td>
<td>24</td>
</tr>
</tbody>
</table>
Appendix B

Pre-test results Radical innovations

Table 11. The level of product familiarity for all three radical innovations in the pre-test (1 = not familiar at all, 7 = very familiar)

<table>
<thead>
<tr>
<th>Radical innovation</th>
<th>$M$</th>
<th>$SD$</th>
<th>$n$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smart wardrobe</td>
<td>2.20</td>
<td>1.60</td>
<td>45</td>
</tr>
<tr>
<td>IWear</td>
<td>2.17</td>
<td>1.14</td>
<td>45</td>
</tr>
<tr>
<td>Ohoo Water ball</td>
<td>1.68</td>
<td>1.32</td>
<td>45</td>
</tr>
</tbody>
</table>

Table 12. The level of product deviance for all three radical innovations in the pre-test (1 = not deviant at all, 7 = very deviant)

<table>
<thead>
<tr>
<th>Radical innovation</th>
<th>$M$</th>
<th>$SD$</th>
<th>$n$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smart wardrobe</td>
<td>5.36</td>
<td>1.14</td>
<td>45</td>
</tr>
<tr>
<td>IWear</td>
<td>5.35</td>
<td>1.19</td>
<td>45</td>
</tr>
<tr>
<td>Ohoo Water ball</td>
<td>5.97</td>
<td>0.84</td>
<td>45</td>
</tr>
</tbody>
</table>
Table 13. *The level of product radicalness for all three radical innovations in the pre-test (1 = not radical at all, 7 = very radical)*

<table>
<thead>
<tr>
<th>Radical innovation</th>
<th>$M$</th>
<th>$SD$</th>
<th>$n$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smart wardrobe</td>
<td>5.04</td>
<td>1.21</td>
<td>45</td>
</tr>
<tr>
<td>IWatch</td>
<td>5.16</td>
<td>1.26</td>
<td>45</td>
</tr>
<tr>
<td>Ohoo Water ball</td>
<td>5.31</td>
<td>1.43</td>
<td>45</td>
</tr>
</tbody>
</table>

Table 14. *The level of product resistance for all three radical innovations in the pre-test (1 = no resistance at all, 7 = very much resistance)*

<table>
<thead>
<tr>
<th>Radical innovation</th>
<th>$M$</th>
<th>$SD$</th>
<th>$n$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smart wardrobe</td>
<td>3.11</td>
<td>1.47</td>
<td>45</td>
</tr>
<tr>
<td>IWatch</td>
<td>3.60</td>
<td>1.72</td>
<td>45</td>
</tr>
<tr>
<td>Ohoo Water ball</td>
<td>4.22</td>
<td>2.01</td>
<td>45</td>
</tr>
<tr>
<td>Reason for resistance</td>
<td>Smart Wardrobe</td>
<td>Iwatch</td>
<td>Ohoo Water ball</td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
<td>---------------</td>
<td>--------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Does not fit into my daily life/Lifestyle</td>
<td>2</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>The image does not appeal to me</td>
<td>1</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Product has too many economical and or/financial risks</td>
<td>4</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>I am worried this product is harmful or poses a threat to my health</td>
<td>0</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>I am worried this product will not be accepted within my social circle</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>I value my current product (tradition)</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>
Appendix C

Main online questionnaire

Beste deelnemer,

Bedankt voor uw deelname aan dit onderzoek.

Deze enquête is onderdeel van onze masterscriptie. Uw antwoorden worden anoniem verwerkt en vertrouwelijk behandeld. De resultaten worden enkel geanalyseerd en verwerkt door ondergetekenden. U kunt de enquête op elk gewenst moment verlaten. Het invullen van deze enquête duurt ongeveer 10 minuten.

Faya Pijpers
Niek Klaassen
Sander Rekswinkel
Sophie ter Woerds

Supervisors:
dr. C. Horváth
dr. S.M. Ritter

Master Marketing
Radboud Universiteit Nijmegen

Deze vragenlijst bevat geluidsfragmenten. We vragen u naar onderstaand audiofragment te luisteren om te controleren of het geluid werkt. Klik op de afspeelknop om het fragment te starten.

(geluidsfragment koffie)

Schrijf het woord op dat u hoorde tijdens dit geluidsfragment.

(open tekst)

U krijgt nu een video over het product Ohoo te zien. Ohoo is een eetbare waterbal die kan dienen als alternatief voor bijvoorbeeld een waterfles.

(Video Ohoo Waterbal) (Met bekende, onbekende of geen muziek afhankelijk van de versie)

Mijn gevoelens tegenover dit product zijn:

Onplezierig (o) (o) (o) (o) (o) (o) Plezierig

Nadelig (o) (o) (o) (o) (o) (o) Voordelig

Negatief (o) (o) (o) (o) (o) (o) Positief
In hoeverre bent u het eens met de volgende stellingen:

<table>
<thead>
<tr>
<th>Helemaal mee</th>
<th>Enigszins mee</th>
<th>Enigszins mee eens</th>
<th>Helemaal mee eens</th>
</tr>
</thead>
<tbody>
<tr>
<td>mee</td>
<td>oneens</td>
<td>Neutraal mee eens</td>
<td>Mee eens</td>
</tr>
</tbody>
</table>

Ik zou graag tijd willen besteden om meer over het product te weten te komen

Ik zou graag de moeite (o) willen nemen om meer over het product te weten te komen

Ik ben bereid om het product te testen, indien dit mij wordt gevraagd

---

<table>
<thead>
<tr>
<th>Helemaal mee</th>
<th>Enigszins mee</th>
<th>Enigszins mee eens</th>
<th>Helemaal mee eens</th>
</tr>
</thead>
<tbody>
<tr>
<td>mee</td>
<td>oneens</td>
<td>Neutraal mee eens</td>
<td>Mee eens</td>
</tr>
<tr>
<td>bereid om het product te testen, indien dit mij wordt gevraagd</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
</tr>
</tbody>
</table>

Ik ben van plan dit product in de toekomst te gebruiken

Het is waarschijnlijk dat ik dit product in de toekomst ga gebruiken

Ik zal dit product in de toekomst gebruiken

---

52
In hoeverre bent u het eens met de volgende stellingen:

<table>
<thead>
<tr>
<th>Heel klein</th>
<th>Klein</th>
<th>Enigszins klein</th>
<th>Neutraal</th>
<th>Enigszins groot</th>
<th>Groot</th>
<th>Heel Groot</th>
</tr>
</thead>
<tbody>
<tr>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
</tr>
</tbody>
</table>

De waarschijnlijkheid dat ik de waterbal zou kopen is:

| (o)        | (o)   | (o)             | (o)      | (o)            | (o)   | (o)        |

De kans dat ik overweeg de waterbal te kopen is:

| (o)        | (o)   | (o)             | (o)      | (o)            | (o)   | (o)        |

Mijn bereidheid om de waterbal te kopen is:

| (o)        | (o)   | (o)             | (o)      | (o)            | (o)   | (o)        |

In hoeverre bent u het eens met de volgende stelling: ‘Ik voel weerstand ten opzichte van de eetbare water bal.’

(o) Helemaal mee oneens
(o) Mee oneens
(o) Enigszins mee oneens
(o) Neutraal
(o) Enigszins mee eens
(o) Mee eens
(o) Helemaal mee eens

Zou u kunnen toelichten waarom u weerstand ervaart? (Vraag indien weerstand ervaren wordt)

(Open tekst)

Selecteer de meest geschikte reden waarom u weerstand ervaart: (Vraag indien weerstand ervaren wordt)

(o) Het past niet in mijn dagelijkse leven/levensstijl
(o) Het imago spreekt mij niet aan
(o) Het product heeft te veel economische en/of financiële risico’s
(o) Ik ben bezorgd dat dit product schadelijk of ongeschikt is voor mijn gezondheid
(o) Ik ben bezorgd dat dit product niet geaccepteerd wordt door mijn vriendenkring (sociaal risico)
(o) Ik hecht waarde aan mijn huidige producten (traditie)
Luister nogmaals naar de muziek uit de video: (Muziekvragen alleen voor de participanten blootgesteld aan de video met muziek)

(Muziek fragment bekende of onbekende muziek afhankelijk van de versie)

In hoeverre bent u bekend met de muziek uit het geluidsfragment:
Totaal niet bekend (o) (o) (o) (o) (o) (o) (o) Heel bekend

In hoeverre kent u de muziek uit het geluidsfragment:
Ik ken het totaal niet (o) (o) (o) (o) (o) (o) Ik ken het heel goed

In hoeverre herkent u de muziek uit het geluidsfragment:
Ik herken het niet (o) (o) (o) (o) (o) (o) Ik herken het gelijk

Door deze muziek voel ik me:

<table>
<thead>
<tr>
<th></th>
<th>Helemaal mee eens</th>
<th>Helemaal oneens</th>
<th>Enigszins mee eens</th>
<th>Enigszins oneens</th>
<th>Neutraal</th>
<th>Enigszins mee eens</th>
<th>Enigszins oneens</th>
<th>Helemaal mee eens</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vrolijk</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
</tr>
<tr>
<td>Blij</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
</tr>
<tr>
<td>Tevreden</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
</tr>
<tr>
<td>Opgewekt</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
</tr>
</tbody>
</table>
Door deze muziek voel ik me:

<table>
<thead>
<tr>
<th></th>
<th>Helemaal mee</th>
<th>Enigszins mee eens</th>
<th>Enigszins mee eens</th>
<th>Enigszins mee eens</th>
<th>Helemaal mee eens</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mee</td>
<td>oneens</td>
<td>Neutraal</td>
<td>mee eens</td>
<td>mee eens</td>
</tr>
<tr>
<td>Levendig</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
</tr>
<tr>
<td>Actief</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
</tr>
<tr>
<td>Energiek</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
</tr>
<tr>
<td>Vol met pit</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
</tr>
<tr>
<td>Krachtig</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
<td>(o)</td>
</tr>
</tbody>
</table>

In hoeverre vindt u de muziek uit het geluidsfragment leuk?
Helemaal niet leuk (o) (o) (o) (o) (o) (o) (o) Heel erg leuk

In hoeverre beschouwt u uzelf als een expert op het gebied van duurzame waterflessen?
Helemaal niet (o) (o) (o) (o) (o) (o) (o) Helemaal wel

In hoeverre heeft u voorkennis over duurzame waterflessen?
Helemaal niet (o) (o) (o) (o) (o) (o) (o) Helemaal wel

In hoeverre beschouwt u uzelf als deskundig in het gebruik van duurzame waterflessen?
Helemaal niet (o) (o) (o) (o) (o) (o) (o) Helemaal wel
Wat is uw geslacht?
(o) Man
(o) Vrouw
(o) Anders
(o) Wil ik niet zeggen

Wat is uw leeftijd?
(Open tekst)

Wat is uw hoogst afgeronde opleiding?
(o) Middelbaar onderwijs
(o) MBO
(o) HBO
(o) WO/Universiteit
(o) Anders, namelijk (open tekst)