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Can we trust the CBRM online?

Translating and validating the eCBRM for the measure of trust in the shower gel/foam category

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Preface

You have in front of you my Master thesis “Can we trust the CBRM online? Translating and validating the eCBRM for the measure of brand trust in the shower foam/gel category”, which I have written over the past six months under supervision of Dr. Csilla Horváth at Radboud University Nijmegen.

This thesis presents the completion of not only my Master in Marketing in Nijmegen, but also of my academic career. I have much enjoyed the past two years at Radboud University and am proud to be able to present this thesis - but first, I would like to take the chance to thank the people without whom I would not have been able to pursue this project.

Seeing how my thesis has interdisciplinary aspects, I want to thank everyone from the IT and web development teams I have been able to ask for help, but especially Jenna Shockley for realizing my/our vision for the eCBRM.

I would also like to thank Ilse and Joy for all the support and animating conversations we had while working on our theses.

Last but surely not least, I want to issue a big thank you to my supervisor, Csilla, for allowing me to think outside of the box and supporting this project in every way.

I hope you enjoy reading this thesis as much as I enjoyed writing it!

Sunna Henkel

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Abstract

The relationships consumers build with brands are of both high value and great interest for researchers and marketing managers alike. However, measurement tools allowing for a comparing analysis of consumer brand relationships in one step are rare.
On this ground, the Consumer Brand Relationship Mapping tool (short: CBRM) has been developed last year. After showing positive results in first research projects, this study now aimed to further the CBRM's development by translating it into an online tool (called the eCBRM) and validating it for the relationship construct of brand trust - which is crucial in relationship marketing, as it presents the starting point for many other relationship types. The category chosen for this project was shower foam and gel. Moreover, a central hypothesis to be tested was that the eCBRM is, in fact, preferred by the participants due to its intuitive and enjoyable design, therefore leading to a higher quality of responses.
In a multifaceted quantitative data analysis involving both within group and between group comparison, the eCBRM proved itself to be a valid and reliable measurement tool. It however also became clear that there are ample points in need of improvement. Therefore, it is not possible to confirm the hypothesis of greater enjoyment by the participants.
This can potentially be resolved in future research by transforming the eCBRM, i.e. with the implementation of a drag-and-drop option, improved explanations, or even a total redesign of the eCBRM, taking it from a target-based design to a simpler, scale-based design.
Nevertheless, the results are positive enough to support further developments and improvements to the eCBRM, which in its current form is already a valid and reliable tool to measure brand trust.

Keywords: Marketing, consumer brand relationships, brand trust, measurement tool development

Introduction

"Trust is the foundation for any brand."
- Marty Neumeier

In the late 1980's, the shift from a left-brained to a right-brained paradigm in Marketing in general and branding in specific has brought forth a focus on the emotional side of Marketing (Grönroos, 1994; Lemon/Verhoef, 2016; Hunt/Morgan, 1994). What followed was a myriad of scientific publications researching the emotions consumers[1] develop for brands - and more specifically, what kinds of relationships consumers form in which ways with "their" brands (see Dwyer et al., 1987; Morgan et al., 2015; Berry, 1995).

What Neumeier refers to in his quote above is the concept of brand trust important to researchers and marketers alike, which has taken a crucial role within the consumer brand relationship literature since its very beginning (Ganesan/Hess, 1997; Hunt/Morgan, 1994). While there are varying definitions of brand trust, it boils down the consumer's belief that the brand/company is not only willing, but also able to deliver on its promises (Ganesan/Hess, 1997; Dwyer et al., 1987; Geyskens et al., 1997). It is furthermore generally accepted that brand trust accounts for multiple desirable branding outcomes, such as behavioral and attitudinal loyalty, satisfaction, positive word of mouth, repurchase intention and personal connections with the brand (Hess/Story, 2015; Won-Moo, 2014; Keller/Swaminathan, 2020; Chiu/Chang/Cheng/Fang, 2009; Geyskens et al., 1997).

The gravity of brand trust with all its benefits can be easily illustrated by looking at an everyday situation: In today's world of growing competition, consumers have more choices than ever before. There are an estimated 500.000 brands in 2.000 product categories (Nielsen Media Research, 2020). Simply going to the supermarket to do the weekly shopping forces consumers to make decisions between products that are seemingly identical. It is at this stage that brand trust (as well as other relationship constructs) come into play - the customer sees the range of brands and remembers that with brand 1, she has had good experience, the brand's product lived up to her expectations and she was overall satisfied. She knows she can rely on the brand to deliver the same performance again - so buys that brand again. It has to be noted here that brand trust - while being predominant - is not the only relationship type that offers orientation and simplification in the customer decision journey. Other possible

[1] Throughout this paper, the terms consumer and customer will be used interchangeably.

constructs such as attachment, loyalty, love etc. (Batra et al., 2012; Keller/Swaminathan 2020; Park et al., 2006) take effect as well.

Aside from leading to a wide array of desirable relationship types, brand trust holds valuable outcomes for both the consumer and the brand. On the brand's side, brand trust leads to a long-term connection with its customers, as well as increasing the brand's equity, i.e. the difference a brand has on the consumer's mindset (Keller/Swaminathan, 2020). The benefits brand trust holds for the consumer include simplification of choice, reduced risk and a lowered level of uncertainty (see Geyskens et al., 1997).

Given the broad range of possible relationships and how important not only brand trust, but consumer brand relationships as a whole have become in recent years, it is not surprising that the measurement of those constructs is equally as important. There is a wide selection of tools to measure brand relations a manager or researcher can choose from. This includes personal in-depth interviews as used by Fournier (1998), or traditional Likert-scale measures (see for an overview: Bearden, Netemeyer and Haws, 2011).
However, most of those measurement tools are limited in their ability to measure the relationships a consumer forms with multiple brands at once: Usually, the consumer would have to fill out the same Likert-scale based survey over and over again. This of course leads to little enjoyment for the participant – frankly, she'll get bored quickly – and complicates comparative analysis. With regard to the increasing competitiveness of the market, knowing how the brand in question compares to its competitors is crucial for managers. Furthermore, traditional Likert-scale based measurement tools tend to be perceived as boring and repetitive by study participants, lowering their willingness to partake in such studies. On this basis, the Consumer-Brand Relationship Mapping tool (short: CBRM) has been developed (Horváth, Buunk, van der Ven, Dimitra, 2020: following Horváth et al., 2020). So far, the CBRM has been proven to be easy and enjoyable for the participants, whilst also accurately measuring the tested relationship (Horváth et al., 2020).
Previous research and development of the CBRM (Horváth et al., 2020) has been focused only on brand attachment. While this is an important relationship concept and has been found to be accurately measured by the CBRM, there is still a need to validate this new measurement tool in different settings. This includes both different relationships and different product categories. Researching how on point the CBRM measures a varying set of relationships and categories is crucial in the improvement and further development of the

CBRM with the ultimate goal of making it available as an important tool for researchers. Managers can profit off the eCBRM as well, as it offers them the opportunity to investigate different desirable relationship types their brand has with their customers. This knowledge can lead to a competitive advantage.

Next to choosing a new relationship to measure, it is also important to use a new product category to validate the CBRM. L'Oréal's executive vice president specifically stressed the importance of brand trust for any personal/beauty care products (Zaumseil, 2020). In service marketing, the concept of "black box services" (van't Haaff, 1989; Berry, 1995) describes offerings where the customer does not have the necessary knowledge to understand the service and thus has to trust the provider blindly - this concept can be applied here as well, even though this paper does not deal with services but rather with products. When buying a new shampoo, lotion or shower gel, the customer usually has no understanding of the ingredients or how the product is being made, she can just believe that the brand has her best interest at heart, thereby making brand trust the central relationship construct. Any of the aforementioned product categories would be fitting, but for this paper the category of choice will be shower foam/gel. Not only is it an area of personal interest, shower gel/foam are also used throughout all demographic and geographic groups, allowing for effective data analysis that will lead to generalizable results and therefore maximize the relevance of this report.

Moreover, a major drawback of the current development stage of the CBRM lies in it being a physical measurement tool that requires the participants and the researcher to be in the same room. Due to the COVID-19 pandemic, this has already posed problems in the data collection during the previous research and is likely to hinder data collection for this project as well. Moreover, the current pandemic has proven how critical it is to be able to switch to a fully digital environment in a moment's notice, giving further proof to the assumption that the next decades will see an increase in the demand for fully digitalized measurement tools. Both points lead to an urgent need to translate the CBRM into an online tool. Translation into an online tool moreover allows for a look into how the CBRM differs when there is no personal assistance as in the original setting - will the reduction of the interviewer effect lead to better or worse results, and how do participants enjoy the CBRM as a quantitative tool? Using an online tool furthermore allows for broader, non-geographically bound data collection. The eCBRM will moreover be able to host multiple projects at once, and allows for easy and quick adjustments in the project.

The research objective of this thesis is therefore two-fold:

- validation of the current CBRM in the different setting of brand trust in the shower gel/foam category
- translation of the physical CBRM into an online tool, the eCBRM.

This dual aim will be mirrored in the organization of the following thesis. There will be five sections, of which the first one will give an in-depth overview of brand trust as the prime form of consumer-brand relationships. Section 2 will deal with the applied methodology, describing data collection and planned analyses. This will be followed by a chapter describing the eCBRM and the considerations that went into its development. Section 4 will center around the data analysis results, with an integrated discussion of them. Lastly, section 5 will answer the research objectives, explain the managerial and theoretical implications, and pay attention to research limitations and future research.

Literature review

Consumer-Brand Relationships: Origin, theories and components

The paradigm shift in the 1980s to a more emotional focus in Marketing has led to the development of Relationship Marketing, a practice that entails the establishment, development and maintenance of strong and long-lasting relational ties between brand and customer (Berry, 1983 [in Berry, 1995]; Hunt/Morgan, 1994). The American Marketing Association (2021) describes Relationship Marketing as the "strategies and tactics for segmenting consumers to build loyalty", however, this definition only focuses on loyalty as an outcome whilst a variety of different brand relationships can be built by relationship marketing, most notably brand trust.

Consumer-brand relationships are defined as the "degree to which [consumers] resonate or connect with a brand" (Keller/Swaminathan, 2020, p. 107). This definition includes two important elements: Firstly, there is the (generally accepted) assumption that people can be emotionally attached to brands in the same way as they are to other people. Secondly, Keller and Swaminathan (2020) include the idea of resonating - or identifying - with a brand. Consumer's actual (and ideal) self-image (Malär et al., 2011) and the degree to which that overlaps with the brand are crucial antecedents of emotional attachment to brands and therefore important to consider when building brand relationships.

One of the most important dimensions of consumer-brand relationships is reciprocity - there

has to be a constant exchange between the partners in the relationship (Keller/Swaminathan, 2020; Fournier, 1998).

Modelling Consumer-Brand Relationships

Considering the complexity of interpersonal relationships and emotions, which builds the ground for this metaphorical approach to Marketing, it is not surprising that there is a myriad of opportunities to describe consumer-brand relationships. Hence, there is not one commonly used model. Instead, different authors have come up with their own metaphors and modellings of the relationships. While Fournier (1998) for example formulates 15 relationship types, modelled after interpersonal relationships (such as flings, best friendships or arranged marriages), Keller and Swaminathan (2020) define behavioral loyalty, attitudinal attachment, sense of community and active engagement as the four key dimensions of relationships. Becker et al. (2010) hypothesizes only the broader categories of Passion and Intimacy/Loyalty. Those are, however, only three examples out of the cosmos of consumer-brand relationship literature – the metaphors range from very simplistic models to more complex descriptions. The given adequacy of the explanation of the relationships, i.e. the use of the relationship transfer, is hereby an important determinant in how useful the concept of consumer-brand relationships is (Breivik/Thorbjornsen, 2008)[2].

Origin and Development of relationships

Consumer-brand relationships are generally thought to be the outcome of branding activities. Dwyer et al. (1987) propose a five-step model to develop relationships between customer and brand, consisting of (1) awareness, (2) exploration, (3) expansion, (4) commitment and (5) dissolution. Note that the ending of the relationship is specifically included in this development model, emphasizing the fact that, just like the interpersonal relationships they are modelled after, consumer-brand relationships can end for a multitude of reasons (Fajer/Schouten, 1995). Keller and Swaminathan (2020) go into more detail by describing brand relationships - or, in their terms, brand resonance (p. 108) - as the highest level and outcome of the brand resonance pyramid. The building steps for resonance are salience, performance/imagery and judgements/feelings. Various sources of relationships have been described, such as the actual self-image (Malär et al., 2011), simply the satisfaction of

[2] An interesting, while more philosophical, point for discussion here is that we normally do not have clear definitions of human emotions or relationship constructs. One person's idea of love is not necessarily identical with another person's understanding. So how can we ever be really sure of the adequacy of the metaphorical transfer?

customer's needs and wants (Berry, 1995) or image and personal meaning - referred to as "the customer's heart" (Rust et al., 2001, p. 9).

A crucial step in building customer-brand relationships is the establishment of brand trust, as this serves as a stepping stone for many relationship types (Lau/Lee, 1999; Geyskens et al., 1998). Of course, brand trust is a relationship type in itself - it is just a necessary condition to establish this as a first relationship, on which the brander can develop other types, such as loyalty or brand love.

Advantages and Outcomes of Consumer-Brand Relationships

Just as important as how brand relationships develop is to understand the variety advantages they hold. Most importantly, stable customer-brand relationships enable the brand to retain their customers more easily, which is more profitable than acquiring new ones (Berry, 1995). Moreover, relationships are an immensely important stepping stone towards building brand equity, i.e. the "differential effect of brand knowledge on the consumer response to the marketing of a brand" (Keller/Swaminathan, 2020, p.). This in turn leads to more overall customer equity (Rust et al., 2001) - in simple words, it is of economic benefit for the brand.

For the customer, brand relationships offer risk reduction, simplification and a feeling of importance (Jackson, 1993).

Especially brand trust holds many valuable advantages for both brands and customers, as brand trust stands at the beginning of most other relationship constructs, i.e. loyalty (Geyskens et al., 1998). How brand trust develops and what other outcomes there are will be discussed in the following chapter.

Brand Trust: Antecedents, outcomes and components

In the history of consumer-brand relationships, trust and commitment have always been in the focus (Hunt/Morgan, 1994). In fact, early research has defined trust as the very basis of relationship marketing (see Berry, 1995).

There have been multiple definitions of brand trust (Hunt/Morgan, 1994; Ganesan/Hess, 1995; Berry, 1995 etc.; refer to Geyskens et al., 1998 for an overview), but most commonly brand trust is seen as the consumer's belief that the brand is willing and able to deliver on its promise (Erdem/Swait, 2004). Dimensions of trust have been defined as credibility and benevolence, where the former describes the consumer believing in the brand living up to its

promises and the latter the consumer's conviction that the brand's motifs and intentions are benign (Ganesan/Hess, 1997).

Antecedents and development

Brand trust is the result of a calculative process in which the consumer takes into account several characteristics of the brand in question, which she deems to be distinctive of the brand's quality and reliability (Doney/Cannon, 1997; Chaudhuri/Holbrook, 2001). Generally, the customer does not spontaneously trust a brand - she considers with great care different aspects, such as the costs v. the rewards of continuing the relationship. A possible example would be the following: A customer, let's name her Jane, is looking for a good skincare brand. She notices different brands popping up, and hears from her friends about what brands they use and trusts. In order to determine which brand she trusts most, she makes a pro and contra list containing aspects such as previous positive/negative experiences, what her friends have told her, what the brand communicates, whether the brand has a reward system, and potential negative aspects such the shitstorm one brand received last year for not being able to deliver the products in a timely manner. After thorough examination, she makes her decision based on her calculation of which brand she deems the most likely to live up to her expectations and the brand's promises.

There is a considerable amount of research into what the consumer takes into account during this calculative process - they are the antecedents of brand trust. Shared values, communication and low opportunistic behaviour have been constituted as leading to brand trust in the Key Mediating Variable [KMV] model (Hunt/Morgan, 1994). In their meta-analysis, Geyskens et al. (1998), formulate environmental uncertainty, own dependence, the partner's coercive power use, communication and economic outcomes as antecedents of trust. Interestingly, uncertainty is also defined as being lower by trust, thereby being defined as an outcome of brand trust (Hunt/Morgan, 1994). There is discussion around this point in the trust literature, however: Another school of thought claims that vulnerability, i.e. the trusting party's inability to correctly foresee decision outcomes, is a necessary condition for trust (see Doney/Cannon, 1997) - after all, if you know exactly what is going to happen, trust is not needed to make a decision.

Communication is generally accepted to be of utmost importance when aiming to create brand trust. Herewith, it is crucial that communication is open, honest and frequent (Berry, 1995), as well as timely, relevant and reliable - constituting a high quality of communication

(Hunt/Morgan, 1994). This shows that both quantity (i.e. the frequency) and quality are predominant dimensions of communication.

Outcomes and importance of brand trust

Brand trust holds valuable benefits for both the customer and the brand. The main advantageous outcome for customers is a reduced brand risk (Won-Moo, 2014) and decreased uncertainty (Hunt/Morgan, 1994). In easy terms, trusting a brand simplifies and secures the customer's decision making process. This advantage is also illustrated in the above given example.

The positive outcomes on the brand's side range from behavioral and attitudinal loyalty to satisfaction and a long-term connection that is driven by more than just economic results (Geyskens et al., 1998). Satisfaction takes on a special role in the brand trust continuum, as satisfaction is not only an outcome, but also a determinant of brand trust (Geyskens et al., 1998; Erciş/Ünal/Candan/Yıldırım, 2012; Ha/Perks, 2005).

Moreover, brand trust leads to functional conflicts - enabling constant growth for both parties involved - and ongoing cooperation (Geyskens et al., 1998). The latter is described as both parties working together to achieve a mutual goal. It is noteworthy that this outcome circles back to the overall definition of customer-brand relationships, in which active involvement and reciprocation play an important role (see above).

Brand trust is a fundamental part of relationship equity, a concept that describes the tendency of the customer to stick with the brand in question and (together with value equity, i.e. the objective evaluation of the brand, and brand equity, i.e. the subjective evaluation of the brand) leads to improved customer equity (Rust et al., 2001).

As already mentioned above, brand loyalty is an outcome of brand trust. *Brand loyalty*[3] describes the consumer's attachment to the brand (Lau/Lee, 1999; Russell-Bennett/McColl-Kennedy/Coote, 2007; Keller/Swaminathan, 2020; Dick/Basu, 1994) - in other words, how she tends to stick to one and the same brand. Brand loyalty comes with two dimensions: behavioral and attitudinal loyalty. In Marketing literature, brand loyalty has long been thought to be only made up by the behavioral component; attitudinal loyalty was discovered later on. They have been defined as follows: (1) loyal behavior refers

[3] It has to be stressed that this overview of brand loyalty is only a quick look into the brand loyalty literature. For the sake of this thesis, only the most important and widely agreed on definitions have been selected and summarized. The brand loyalty literature, however, is much bigger and offers interesting points of discussion, as well as more in-depth analyses and research than this thesis can incorporate.

to repeat purchases from the same brand (Nam/Ekinci/Whyatt, 2011; Keller/Swaminathan, 2020; de Oliveira Santini/Ladeira/Sampaio/Pinto, 2018), while (2) loyal attitude refers to the emotional or psychological attachment to the brand, the intention behind the purchase and the commitment to the brand (Nam et al., 2011; Russell-Bennett/McColl-Kennedy/Coote, 2007). Repeat purchases are preceded by the *repurchase intention*, which is not only a key factor in brand loyalty, but also an incremental outcome of brand trust (Chiu/Chang/Cheng/Fang, 2009). As the name indicates, repurchase intention is the degree to which a consumer plans to purchase the same good or from the same brand in general again (Zeithamel/Berry/Parasuraman, 1996; Hellier/Geursen/Carr/Rickard, 2003). It is therefore incremental in consumer retention, and highly beneficial to the brand. Next to brand trust, repurchase intention is influenced by factors such as satisfaction, brand preference, perceived ease of use, perceived usefulness and enjoyment (Chiu et al., 2009; Hellier et al., 2003).

Establishing brand loyalty, especially the more long-lived and withstanding loyal attitude (Lau/Lee, 1999) is a focal point for marketers. This is due to the fact that having loyal customers offers multiple valuable benefits for the brand. Not only do loyal customers come back over and over again, they have also been shown to spend more money than non-loyal customers (Russell-Bennett et al., 2007; Keller/Swaminathan, 2020). Moreover, loyal consumers often act as brand advocates and spread positive word of mouth (Lau/Lee, 1999). *Word of mouth* is one of the most desirable outcomes of marketing activities (East, Romaniuk, Chawdhary, Uncles, 2017), and refers to communication between consumers about a product, service or brand (Huete-Alcocer, 2017; Zeithamel et al., 1996). Within positive word of mouth (pWOM for short), this communication has a positive valence - essentially, a consumer turns into an advocate for the brand or good in question. Since other (potential) consumers perceive these informations to be independent by the brand, and therefore authentic and true, positive word of mouth is regarded as one of the most effective influences on consumer behavior (Huete-Alcocer, 2017)

Repurchase intention and positive word of mouth have been well established as outcomes of brand trust. Furthermore, it has been made clear that both variables are of high interest and rewarding for brands. Based on this ground, they will be used to validate the brand trust results in the methodology.

Traditional Measures of Consumer-Brand Relationships

With regard to how important consumer-brand relationships have become in the managerial practice as well as in research, it is not surprising that there is a multitude of tools that can be used to measure them. They fall into the two broad categories of qualitative and quantitative measurements. In the following section, both of these categories will shortly be described, exemplified and discussed. Lastly, there will be a pledge detailing how the (e)CBRM will overcome each of the technique's shortcomings.

Qualitative Research

The offered benefit of allowing the researcher or marketing manager to get in-depth, detailed information is characteristic for qualitative research (Vennix, 2019). However, this goes at the cost of a small sample, which does not allow for generalization (Vennix, 2019). Within marketing - and consumer-brand relationship research - the two most commonly used techniques are focus groups and personal interviews. Both enable the researcher not only to learn about the relationships formed with brands, but also about the causes, antecedents and outcomes (Meyers, 2013). One prominent example of using personal interviews is Fournier (1998), whose ground-breaking paper proposing 15 relationship types modelled after interpersonal relations was based on her interviewing three participants in great detail. Especially taking into consideration that consumer-brand relationships were still a relatively new topic at the time of her research, it made sense to use phenomenological interviewing, as this allowed to study the participants and thereby the topic in great detail (Meyers, 2019). Interviews can generally be open, semi-structured or structured, with the former offering the most flexibility and therefore the most depth (Vennix, 2019).

Focus groups generally entail the researcher working with a small group of participants at once. The benefit here is that the participant is not on her own with the researcher; instead, she is invited to discuss with other participants. The therefore more informal and relaxed atmosphere is said to lead to more honest and open answers (Myers, 2013).

A key advantage of qualitative research is that it generally takes up a lot of time. This is due to the sheer amount of data collected that has to be analyzed in an organized way, i.e. by means of coding. Furthermore, the importance of having a well trained researcher cannot be overestimated, both for interviews and focus groups (Myers, 2013). This also has the logical consequence that the sample sizes in qualitative research are smaller than in

quantitative research, which negatively impacts their generalizability.
A last disadvantage of qualitative studies is that they are hard to replicate, which compromises their reliability.

Quantitative research

Whereas qualitative research allows for little, yet in-depth data collection, quantitative research has the benefit of gathering large, whilst superficial, amounts of data (Vennix, 2019). Surveys are the option of choice for the marketing discipline, with Likert-scales commonly used in consumer-brand relationship research (Keller/Swaminathan, 2020). These scales, typically on a five-point basis, tend to be perceived as repetitive from the participants side. Using the example of brand trust, the participant could be presented with statements such as "*I believe that [brand] uses ingredients that are good for me*", "*[Brand] would never put out a product when they aren't sure it would do no harm*" or "*I feel safe using [brand]'s products*". Especially when the goal is to compare multiple brands with each other, the survey often becomes too long for the participant to enjoy it - which results in less participation and a compromised research quality.

Still, due to the large sample size, quantitative data allows for generalization of the results (Vennix, 2019). The main disadvantage of Likert-scales, and quantitative studies in general, lies in the limits of the posed questions: It is usually not possible to look in the topic in great depth or ask follow up questions upon unusual responses - in fact, those are oftentimes carded out as outliers in the analysis (Hair et al., 2019).

The solution - eCBRM

The new (e)CBRM offers the advantage of being easy and intuitive, allowing for a quick participation - thereby overcoming the shortcomings of traditional Likert-scale based surveys. These include specifically common method bias (MacKenzie/Podsakoff, 2012)- especially when testing multiple brands for the same relationship construct, the participant will get bored, which ultimately leads to a lowered quality of data.
One major asset of the (e)CBRM is its adaptability to different relationship types. Potentially, the (e)CBRM can be used for each and every relationship, making the tool universally usable in the field of customer-brand relationships. This holds the substantial advantage for both researchers and marketers that they do not have to use a multitude of different scales - instead, they can rely on one tool with which they are already familiar. This will reduce potential data collection errors from the researcher or marketer.

Additionally, after translating the physical tool into an online tool, it will be quite simple to combine qualitative and quantitative research. This is on one side due to the fact that the tool can be filled out by the participant without the researcher present (similar to surveys), but it will also be possible to fill the tool out with the researcher present, offering her the opportunity to ask questions about the placement etc. Moreover, one feature of the eCBRM will be a box in which the participant is asked to give a short reasoning behind the brand's placement, mocking the researcher's presence. The (e)CBRM works in one simple step, which is the filling out of the target - it is also herein that the strength of the tool lies, asit is relatively simple and quick to use. This is followed by measures to validate the findings. The main outcome is a target, in which the participant (i.e. customer) is the bull's eye. During the research, she is asked to place brands that come to mind in a specific category/relationship setting around her in the target. The closer the brand is placed to herself, the stronger she experiences the brand relationship. After this step, the participant is asked to fill out a survey which generates insight into how the participant liked the mapping tool.

Developing the eCBRM

The eCBRM has been developed in concert with an external student, Ms. Jenna Shockley. Jenna is currently a Master student of Machine Learning at the Georgia Institute of Technology, and freelances as a web developer. After an initial meeting, a timeframe was set for the development of the eCBRM, giving her about a month to program the tool. This is naturally a very limited timeframe to develop a completely functional tool, which led to some simplifications made to the original plans.

In accordance with the original, physical CBRM tool, the decision was made to keep the eCBRM rather simple and intuitive. The front-end therefore functions with only four screens:

1) Welcome screen,
2) Explanation screen,
3) Mapping screen, and
4) Thank you screen.

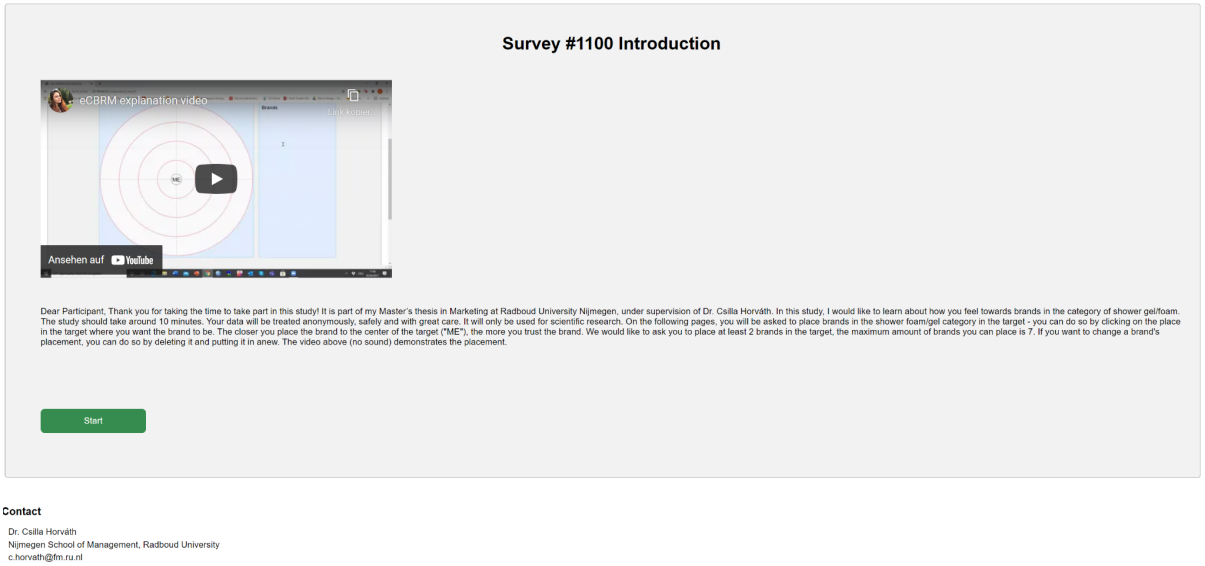


Fig. 1: eCBRM Welcome Screen

On the **welcome screen** (1), the participant is being welcomed. She receives a short introduction to the research she is about to participate in, as well as the relevant information about how her data will be used. Furthermore, the participant is presented with a short video showcasing the functionality of the mapping tool, in order to prepare her for the actual mapping stage. This is accompanied by a very short textual introduction to what is expected of her (i.e. placing brands in the map, the closer the brands are to the self, the stronger the relationship).

Additionally, at the bottom left of this page, the university contact details of Dr. Csilla Horváth can be found. This has been added for multiple reasons: First, showcasing that this tool is in fact university related is expected to increase the perceived trustworthiness of the webtool. Second, it offers the participants the option to get into contact with someone should there be issues or concerns. This lastly assured the research ethics being followed.

The **explanation screen** (2) offers another explanation of the actions the participants are asked to fulfill, combined with the category prompt. We decided to make this screen slightly translucent, so that while reading the instructions, the participant can already see the mapping tool she is about to use.

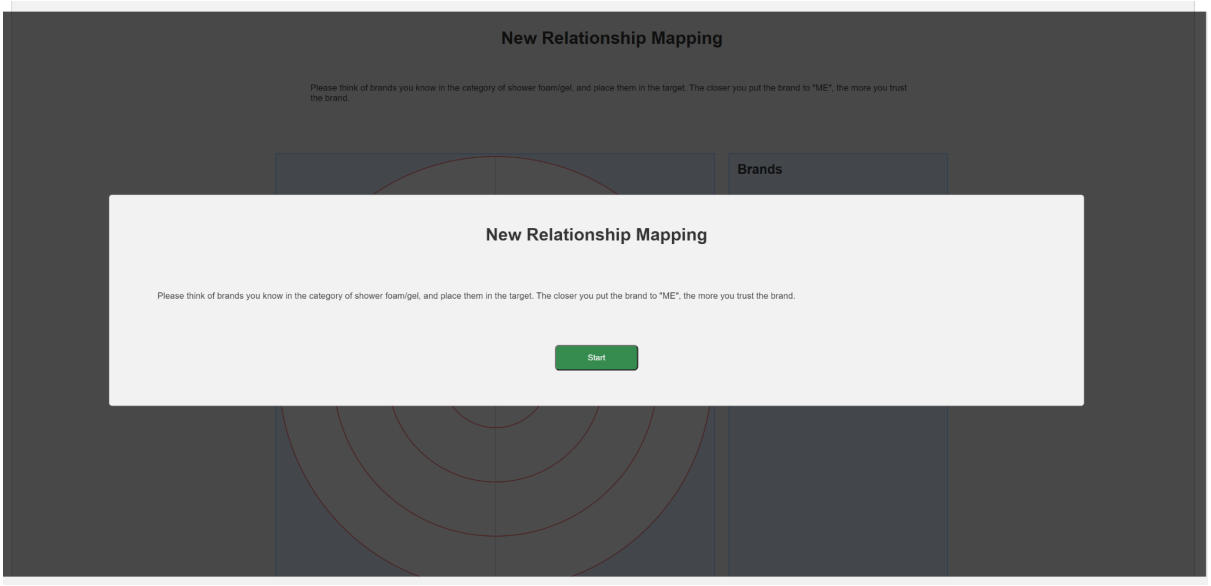


Fig. 2: eCBRM Explanation Screen

Next, the participant is led to the **mapping screen** (3). Here, she is able to use the eCBRM by placing up to twelve brands in the circle. As with the original CBRM, the “bull’s eye” represents the participant herself, and is marked “ME”. The closer the participant places the brands to “ME”, the stronger she feels the relationship in question, meaning in this case that the closer the brand is to the center, the more she trusts the brand.
Adding a brand works very easily: The participant simply has to click on the point in the target where she wants the brand to be, and a text field appears in which she can enter the brand name. After doing so and clicking “done”, the text field closes again and the brand appears as a point in the target circle. The participant is able to delete any brand at any given moment. The brands she enters appear on the target circle as coloured points with up to ten letters of the brand name next to it. The brands are also shown on the right, with the same colour as the related point in the target. The list of brands is according to order of entry. In the

list, the participant finds the option to delete any brand she wants. Next to the brands and order of entry therefore, the eCBRM also measures the time participants spent whilst mapping and the time stamps of the brand entries. Furthermore, the coordinates of the brands in the target are being recorded.

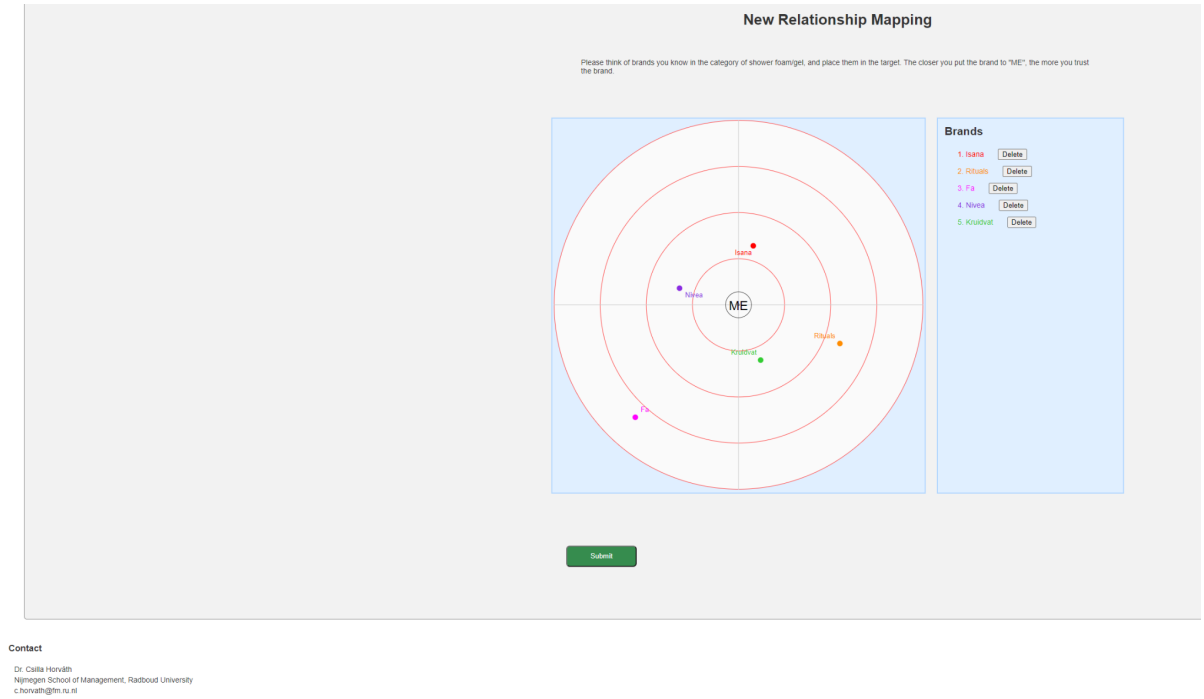


Fig. 3a: eCBRM Mapping Screen

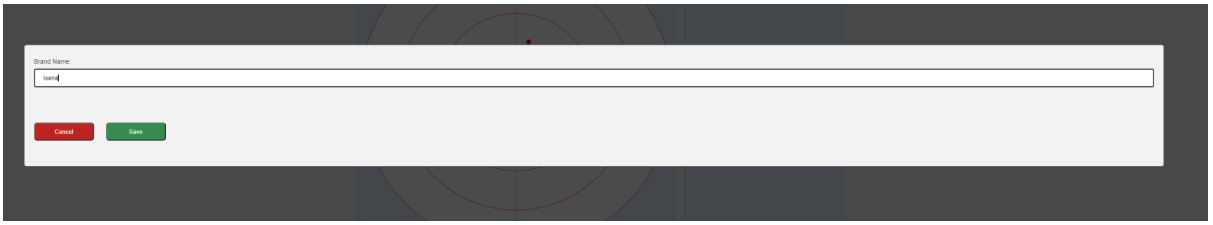


Fig. 3b: eCBRM Mapping Screen

The **last screen** of the eCBRM's frontend (4) thanks the participant for her time and participation. Upon clicking on "continue", the respondent is forwarded to Qualtrics, where she is asked to fill out a survey to validate the tool's function and get an idea into how she evaluates her experience with the eCBRM.

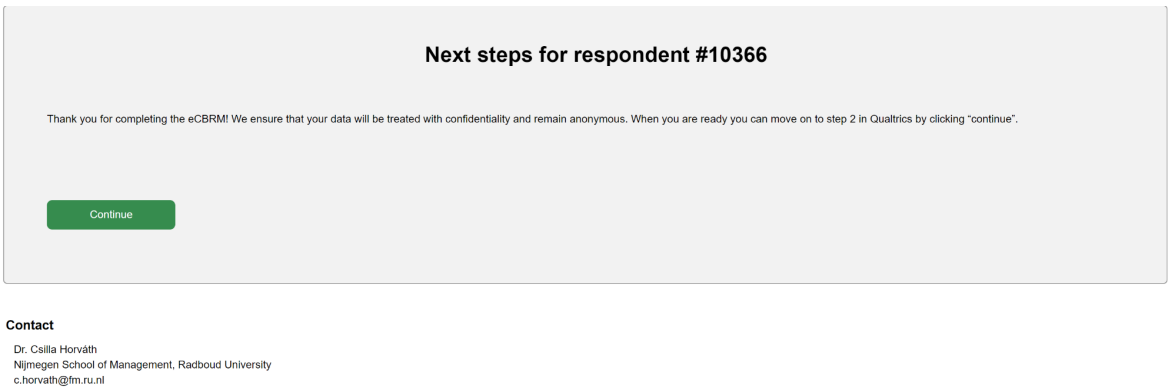


Fig. 4: eCBRM Thank you Screen

As demonstrated, the frontend of the eCBRM is rather simplistic. The backend offers more functionality, as necessary for the project creation. The backend, used by the admin, offers four core functions: (1) Project List/Search/View, (2) Respondent List/Search/View, (3) Mappings List, and (4) Create Project. Function (1) allows the admin to enter the project specific ID and search for the project, see the current status of it and other projects. Function (2) holds the same function, however is related to the specific participant ID. This allows the admin to search and view the data related to one specific participant. Function (3) gives an overview of the brands that have been entered into the mapping circle, and to which respondent and project they belong. Lastly, function (4) allows the admin to fill in a template and publish it, thereby creating a project with a unique project ID.
Next to creating, searching and viewing the projects, the admin page also allows for the recorded data to be downloaded to different formats (i.e. PDF, Excel, CSV).

Pre-testing the eCBRM

Once the development of the tool was concluded, a number of pre-tests were executed. While showing overall positive outcomes, the pre-tests also shed light on a couple of potential issues. Mainly, the pre-test participants complained about a drag-and-drop function missing. This would allow them to drag the brands entered into the target around, thereby easily adjusting the brand's position. This function was originally planned to be part of the eCBRM, but was cut due to time and money restraints.
Furthermore, it seemed as if the ease of use that is hypothesized as a major advantage of the CBRM compared to traditional measures of consumer brand relationships might in fact turn out to be a difficulty for the eCBRM. Multiple pre-test participants were initially confused with the tool, as the actions required from them seemed to be too easy to be of use to the researcher. The participant therefore doubted whether she/he was using the tool correctly, and

was tempted to just stop as the frustration grew.

One complaint issued by most male pre-test participants (but not by female participants) is related to the general form of the (e)CBRM as a circle. Especially with the lines visible in the eCBRM, male participants often wondered whether placing the brand in the top half or in the low half would change their perception (i.e. brands placed in the lower half being automatically recognized as being not trusted or not). It was then suggested to turn the eCBRM into a line, as follows:

Fig. 5:Improvement suggestion, pre-test

Consequently to this worry, the participants tended to actually fill out the eCBRM target on a straight line. Special attention will therefore be paid while analysing the mapping outcomes to see whether this behaviour is a repeated pattern, indicating that the eCBRM should be changed.

Furthermore. the pre-test participants were asked to fill out the eCBRM on different devices (PC, laptop, mobile phone, tablet) so detect potential issues. Generally, the eCBRM runs satisfactorily on all devices, only the touchscreen on mobile phones led to some issues. This is mainly due to the target taking up most of the screen, and reacting overly sensitive to touch, meaning that when participants tried to scroll down, the tool oftentimes opened up the brand name entry text field. This issue is easily repairable by the participants and therefore placed no bigger problem.

Methodology

In order to fulfill the research objective of validating the (e)CBRM for brand trust in the category of showergel/foam, a comparative approach has been chosen,as can be seen in Table 1:

eCBRM	Traditional measure
1. survey with embedded link to the eCBRM → to be filled out first → 12 brands can be placed in the target → time and coordinates will be measured, as well as order of entry (without taking into account changes made by the participant) 2. evaluation scale 3. measure brand trust for two brands with traditional measurement → closest placed brand → randomly picked brand 4. measure positive word of mouth and repurchase intention for these two brands 5. category involvement 6. demographic information	1. survey with traditional, Likert-scale based measure of brand trust → option to fill in up to 12 scales for different brands → time will be measured as well 2. evaluation scale 3. measure positive word of mouth and repurchase intention for two brands → first named brand → randomly picked brand 4. category involvement 5. demographic information

Table 1: Comparison of steps in the two methods

In both cases, it is up to the participant to come up with the brands. Step 4 in the eCBRM - measuring loyalty as a proven outcome of brand trust - will allow for further validation of the accuracy with which the tool measures brand trust. The setup of this study allows for both a between and a within sample comparison. Hence, eCBRM and traditional measure can be compared, as well as within the eCBRM the results of step 1 and step 3.

In both the eCBRM and the traditional measure the scales for demographic information and enjoyment stay the same, as well as the information on data safety and anonymity provided beforehand. This is a crucial step in making the outcomes comparable. Additionally, the scales will be one and the same with the scales used in the two other Master theses this year (Ilse Boers and Chariklea Nikolaou), making the research projects as coherent as possible.

Moreover, both the eCBRM and the traditional measure will be administered as quantitative research. This holds multiple advantages. Firstly, by following a quantitative approach, it is possible to reach as many people as possible and collect a large amount of data, allowing for good validation of the CBRM as an online tool.

Secondly, it will be viable to test whether quantitative or qualitative research works better with the CBRM overall. It is plausible that the quantitative research approach will lead to an overall finer research quality as the interviewer effect will be taken out. It can be hypothesized that this was especially influential in the prior research as (due to the situation) the participants consisted mostly of friends, family and acquaintances of the researchers. Lastly, the same situation is still in effect - due to the COVID-19 pandemic and ensuing lockdown, it stays challenging to conduct the interviews required in the qualitative approach. Having the same qualitative set-up via Zoom or other video call platforms would not work satisfactory. Translating the CBRM into not only an online, but also a quantitative tool is therefore essential.

Both surveys will be conducted via Qualtrics, as this is the platform commonly used for Radboud University projects. This will take place in the form of only one survey containing paths to both methods being sent out, with Qualtrics randomly assigning the participants to either the traditional measure or the eCBRM. Additionally, the targeting portion of the eCBRM will be administered via a server of Digital Oceans. This has been recommended by multiple IT specialists, both university internal and external. Researching the service has shown that Digital Oceans is a secure option for data storage that comes at an affordable price. This fact, in addition to the complete anonymity provided by both Qualtrics and the eCBRM website, assures an ethical research process.

Sample

Shower foam/gel is a product that is used throughout all social classes, education levels, genders etc. Consequently, there are almost no limitations to who the population should consist of. The only aspects to consider are that the population should consist of people that have access to the same brands, and that buy their own shower gel/foam. The reasoning behind this is that the aim of this research is to learn about the individual consumer's feel of trust towards the brands that come to mind, instead of learning what brands i.e. their parents trust and therefore buy. The participant should be the one making the decisions.
Hence, the only set limits are that (a) the participant is above 18 years of age, and (b) the participant has to live in or be born in Germany or The Netherlands. These requirements will ensure that the participant is making their own buying decisions and therefore forming individual bonds with brands of shower foam/gel, and that all participants have access to the

same set of brands. Otherwise, there would be a high chance of having outliers, i.e. brands that are only sold in Japan, which would complicate the data analysis.

Sampling approach

A combination of snowball and convenience sampling has been chosen for this thesis (Taherdoost, 2016). Convenience sampling will allow for quick and easy reach to the population from which the sample will be drawn. As this is still limited, there will also be a pledge to distribute the surveys further (especially among the researcher's own social circle), bringing in the snowball sampling technique.

In the frame of this study, that relies on not one but two surveys, it is important to pay special attention to an efficient sampling technique that does not complicate data collection unnecessarily.

The desired sample size for both surveys is < 150. This will allow for flexibility with the data analysis techniques later on and provide a good overview of the population.

The dual Qualtrics survey will be distributed online, mainly via the researcher's private social media accounts, including Facebook, Instagram, LinkedIn and WhatsApp. As mentioned before, members of the researcher' social circle such as family members and close friends, will be asked to distribute the surveys amongst their social circle as well, with the goal of far distribution. This will also help with distributing the survey beyond the rather student-dense social surroundings of the researcher and therefore diversify the sample.

Measurement

Both the scales used for the participant details and enjoyment will be based on the ones used in prior research (Horváth et al., 2020), but there will be adjustments. The scales have been worked out in cooperation with Ilse Boers and Chariklea Nikolaou, allowing for internal consistency of the measurement tool. This is an important step in learning what works well and what doesn't, and henceforth what needs to be improved in the CBRM. It is only in the demographic questions that some items will vary: It is for example important to cater the item on the participant's educational level to the terms used in the target countries. The demographics will be measured with six items on age, gender, country of origin, country of residence, educational level and income. Except for age (open), all items will have closed answer categories.

a) Brand trust scale

The scale used to measure the relationship construct brand attachment in prior research was rather short, with only five items measuring the concept (Horváth et al., 2020). In order to maintain comparability between this study and its predecessors, the scale for brand trust - developed together with Chariklea Nikolaou - should not be excessively longer. It is however important to measure both established dimensions of brand trust - credibility and benevolence, which calls for an expansion of the scale. The base scale chosen is Chaudhuri & Holbrook's brand trust scale (2001), out of which we adapted the following for items:

- *I trust [brand].*
- *I rely on [brand].*
- *[Brand] is safe.*
- *[Brand] is an honest brand.*

There will be a 7-point Likert-scale ranging from *strongly disagree* to *strongly agree* implemented.

b) Evaluation scale

As for the participant evaluation of the method, Horváth et al.'s (2020) scale proved to be not yet ideal. Hence, in cooperation with Boers, Nikolaou and Horváth, a new scale has been developed. It will be measured again on a 7-point Likert-scale and consists of the following constructs and items:

1. Ease of method use (3 items)
    - *This method is user friendly.*
    - *This method gives the possibility to recover from mistakes easily.*
    - *I could use this method successfully the next time.*
2. Perception of effort (4 items)
    - *It was difficult for me to fill out this method.*
    - *I had to concentrate a lot while filling out this method.*
    - *I had to think very hard about answering some parts of this method.*

- *The effort required to fill out this method is very low.*

3. Perception of time (2 items)
    - *The time required to fill out this method is very low.*
    - *Time went by quickly while filling out this method.*

4. Enjoyability (3 items)
    - *This method is fun to use.*
    - *I felt bored using this method.*
    - *Overall I enjoyed using this method.*

5. Reflectiveness (3 items)
    - *This method really displays the way I feel about the different brands.*
    - *This method enables me to uncover my trust in these brands.*
    - *I feel that by using this method I was able to communicate my true feelings about the brands.*

Combined, the 15 items will provide an in-depth look into how the participants perceive both methods. The developed scale is relatively long, but this is due to the fact that one of the biggest (hypothesized) advantages of the (e)CBRM is the ease of use and enjoyability provided for the participants. It is therefore crucial to gain knowledge into these constructs and see where potential drawbacks lay, in order to further improve the methods. Furthermore, the order of these items in the survey will slightly vary, so as to not have two very similar items right after one another.

c) Validation scale: positive word of mouth and repurchase intention

Next to measuring brand trust, both surveys will also measure positive word of mouth and repurchase intention. As these concepts are proven outcomes of brand trust, this will allow for validation of the accuracy of the brand trust measures. The scale used for this is Zeithamel, Berry and Parasuraman (1996), who conceptualized pWOM and repurchase intention in their brand loyalty measurement (part of the overarching behavioral intentions dimensions scale). Hence, the scale consists of the following items:

- *Say positive things about this brand to other people.*
- *Recommend this brand to someone who seeks your advice.*
- *Encourage friends and relatives to do business with this brand.*
- *Consider this brand your first choice to buy shower gel/foam.*
- *Do more business with this brand in the next few years.*

In order to keep the participant active and attentive, Boers, Nikolaou and myself have decided to change the answer options to ranging from 1: not at all likely to 7: very likely. Changing only the naming of the answer categories, but not the rating system from 1 being the lowest and 7 being the highest, will not confuse the participants, but allow for a small "wake-up call".

d) Category involvement

Category involvement will be measured in both surveys. The approach chosen in prior research (Horváth et al., 2020) was based on Zaichkowsky's (1994) category involvement scale, giving the participants 10 word pairs on a 7-point Likert-scale. Their results show that this approach is unideal. Therefore, in this study (and Boers' and Nikolaou's), category involvement will be measured by means of Schneider & Rodger's "importance" subscale. Here, the participants are presented with the following seven statements:

- *Choosing a ____ is a big decision in one's life.*
- *I attach great importance to selecting a_____.*
- *I don't usually get overly concerned about selecting a _____.*
- *Which _____I choose doesn't really matter to me.*
- *Choosing a _____takes a lot of careful thought.*
- *Decisions about selecting _____are serious, important decisions.*
- *It means a lot to me to have a _____to use.*

This scale has originally been developed to be used with a 5-point Likert-scale, ranging from *totally disagree* to *totally agree*. In the interest of consistency as to not confuse the participant, this will be adapted into a 7-point Likert-scale ranging from *strongly disagree* to *strongly agree*, matching the answer options in the other scales.

Scale	Measured construct	# items	Answer option
Brand trust scale (Chaudhuri & Holbrook, 2001)	Brand trust	4 (out of 4)	7-point Likert-scale (from strongly disagree to strongly agree)
Evaluation scale (based on Horváth et al., 2020; modelled with Boers & Nikolaou)	Participants enjoyment of the respective measurement tool	15	7-point Likert-scale (from strongly disagree to strongly agree)
Brand loyalty scale (Zeithamel et al.,1996)	positive word of mouth and repurchase intention	5 (out of 5)	7-point Likert-scale (from very likely to not at all likely)
"Importance" Subscale (Schneider & Rodgers, 1996)	Category Involvement	7 (out of 7)	7-point Likert-scale (from strongly disagree to strongly agree)
Demographic scale (Horváth et al., 2020; modelled with Boers & Nikolaou)	Demographic information of the participant; age, gender, country of origin, country of residence, highest level of education, annual net income	6	Closed questions (except for age)

Table 2: Overview of scales used

Data analysis

All of the collected data will be analysed according to quantitative research procedures in SPSS or Excel. After preparing and cleaning the data (i.e. checking for missing data), descriptive statistics will be derived from the dataset.

The two main used techniques will be Factor Analysis (for the evaluation scale) and t-tests. The latter will be used to compare the scores on brand trust. Furthermore, scores on pWOM and repurchase intention will be compared. Next to these within-study comparisons, there will also be a between-study comparison, applying to the scores on brand trust and the related validating variables, as well as the evaluation scale.

Based on these analyses, it will be possible to answer (a) how accurately the eCBRM measures the concept of brand trust in the shower gel/foam category, and (b) whether participants prefer the eCBRM over the traditional measure.

Limitations of the methodology

The biggest limitation is likely going to stem from the online tool that has been crafted for this study. While it will be fully functioning and safe in terms of research ethics, the tool has been developed within a short period of time by a student. It is therefore likely that the tool will have some drawbacks - for example, the tool has not been developed with an integrated mobile phone design. As a lot of the participants are likely going to fill the eCBRM out via their smartphones, this could come at an disadvantage. Additionally, the tool is not yet able to record changes made in the order of entry. However, the advantages of the tool will hopefully outweigh these issues.

Furthermore, this will be the first study on the eCBRM, and it has a specific frame. It will therefore not be possible to say that the eCBRM generally works perfectly - this study will only deliver a first proof or indication that the eCBRM is a beneficial alternative to the physical CBRM and works reliably.

Research ethics

In any research, it is of utmost importance for the researcher to act ethical. This can be achieved in multiple ways - in this study, the marketing specific approach by Alsmandi (2008) will be followed. This consists of four pillars: (1) *Informed consent*: The participants of the study will be informed over what study they will take part in, who the study is by and for what their data will be used. They give their consent on this before starting the actual survey. (2) *Privacy and confidentiality*: As assured to the participants, their data will be used only for the purpose of this study, and will not be shared beyond the scope of it. All data will be treated anonymously and confidentially. The server on which the data from the eCBRM will be stored has been selected with utmost care to data security, however, there will be little to no questions regarding sensitive topics, thereby protecting the participant's privacy. (3) *Deception and harm*: The purpose of the study will be fully transparent to the participant. There is no risk for harm that the researcher can see; in any case, the participant is granted their right to informed consent and can, if detecting risk for psychological harm, end their participation at any moment. (4) *Statement of individual research ethics*: This study has been carefully considered and crafted according to the researcher's individual research ethics. Furthermore, at the end of this thesis, there will be a signed research integrity form.

Report of research results

This section will look into the research results organized as follows: 1) analysis and report of traditional measure, 2) analysis and report of eCBRM, 3) comparison between traditional measure and eCBRM.

The first step for each method will be to check the data and cleanse when necessary. For each method, descriptive statistics will then be given, followed by a reliability analysis based on Cronbach's Alpha. After these general analyses, different data analysis methods will be applied depending on the desired outcome, i.e. applying factor analysis for both eCBRM and traditional measure to analyze the evaluation scale.

Lastly, the two tools will get compared, based on (1) a computed score in the evaluation to figure out which method is preferred by the participants, (2) the amount of time spent on the survey/brand entry and (3) the amount of brands entered on average. The latter two analyses will determine which method is more effective and efficient.

Analysis and report of traditional measure results

The total sample consists of 111 respondents[4]. A first look into the variables revealed quite a high number of missing values, therefore the progress and finished variables provided by Qualtrics were analysed. This revealed that out of the 111 answers, only 48 (43.2%) were completed. Out of the incomplete answers, most participants dropped out very late, meaning that the actual usable percentage of variables, especially in the earlier stages of the survey, is higher than 43.2%. The high amount of incomplete participation can be understood as a first indication that this method is being perceived as boring, repetitive and/or frustrating by the participants. This has also been mirrored in responses I have received from friends and family, who generally did not like this method.

In the interest of research ethics, the demographic questions at the end of the study were not mandatory for the participant to fill out. Consequently, less than half of the respondents filled out their details. Out of the participants that were comfortable with filling in their personal information, 66% were female and 34% male. The ages ranged from 17 to 60, with a noticeable cluster of participants in their 20s (23 being the mode). The majority of participants have higher education, with 34% owning a Bachelor's degree or equivalent, and

[4] Due to an issue with the eCBRM deadline, the original plan of distributing both surveys in one link that randomly assigns the participants to either traditional measure or eCBRM had to be abandoned. Both links were therefore distributed in the same networks, but individually, leading to a more problematic data collection that resulted in fewer results than originally wanted.

50% owning a Master's degree or equivalent. 66% of participants live in the Netherlands, with 54% being of Dutch heritage. Another 34% live in Germany, and 38% of participants were born in Germany. Only 8% of participants come from different countries (Aruba, Poland, Finland and Russia). As for annual household net income (€), the three biggest groups are <7.499 (26.5%), 45.000 and above (24.5%) and 7.500-14.999 (22.4%). After deleting outliers in the time spent on the survey, the average participant spent 5.8 minutes on the survey.

One repeatedly used scale was the brand trust scale, which has a satisfying internal consistency, as shown by Cronbach's Alpha = .727 to .842 (depending on which time of use is being analysed). As for the amount of brands entered, every participant had the chance to enter up to 12 brands. It was mandatory to enter at least two brands, which almost everyone did (even though a few participants dropped out during the second brand entry question). The amount of brands entered ranges from one to six brands. However, there was a very small amount of people entering more than the mandatory two brands in general. Only 22 participants entered a third brand, only eight entered a fourth, only three entered a fifth, and only one person entered a sixth brand. In total, the participants entered 1.41 brands (due to the high drop-out rate). This is a first indication that the motivation of the participants to enter more than the mandatory two brands was very low. This might be explained by the generally rather low category involvement. The category involvement scale, consisting of seven items, had a satisfactory Cronbach's Alpha = .875. While caring somewhat about which shower foam/gel they use and attaching some meaning to using shower gel/foam in general, the vast majority of participants is not very involved in this category. They do not find decisions about shower gel/foam important, serious or big and they do not concern themselves with these decisions. Overall, based on the items' means, the category involvement scored 3.586/7, which is rather low.

Method evaluation - traditional method

The evaluation scale is one of the key variables in this research, as the goal is to find out which method is better perceived by participants. To assess the scale's reliability, Cronbach's Alpha was computed. The scale consists of 15 items, out of which four were originally negatively coded. For the purposes of this analysis, they have been reversed, so that all items showed the same scale direction. The internal consistency of the evaluation scale is

satisfying, with Cronbach's Alpha = .860.

The scale was built on a combination of theory and experience with the evaluation scale used in last year's theses (Horváth et al., 2020). 15 items were used, hypothesized to belong to five dimensions (ease of method use, perception of effort, perception of time, enjoyability, and reflectiveness).

Both dimensions and items were tested with an exploratory factor analysis. After making sure that the data is eligible for this analysis type (KMO = .715, Bartlett's test of sphericity <.0001), initially four factors were extracted based on the Eigenvalue >1. Together, they explain 70.1% of the total variance. However, it is noteworthy that the fifth factor has an Eigenvalue of .921,which is critically close to the threshold of 1 used for factor extraction. After extraction, all items show satisfactory communalities of above .3 (the lowest one being "This method gives the possibility to recover from mistakes easily", with a communality of .571). Following, the factors were rotated and the resulting matrix showed overall strong correlations, but also quite a few double-loaders. After investigating this matrix, the decision was made to delete the reverse coded item for "I had to concentrate a lot while applying this method", as it had a problematic double loading (.664 on factor 1, and .507 on factor 2).

Iteration two showed a desirable increase in the KMO, going up to .729. Bartlett's test of sphericity did not change (<.0001). As in the first iteration, four factors were extracted based on their Eigenvalues >1, together explaining 70.52% of the total variance. This is an indication that this model has a greater explanatory power than model one. However, there were still some double-loaders to be found in the rotated factor matrix. Out of these, "Time went by quickly while filling out this method" had the most critical double-loading and was therefore deleted.

The third iteration saw a decrease in the KMO (.702), but a stable Bartlett's test of sphericity (<.0001). There were again four factors extracted, which together explained only 70.69% of the total variance. The rotated factor matrix once again showed strong loadings, while unfortunately retaining a lot of double-loadings. Based on their strength, the item "This method is fun to use" was eradicated.

In this fourth iteration, the KMO decreased further to .672, while Bartlett's test of sphericity remained stable at <.0001. Again, four factors were extracted, together explaining 70.06% of the total variance. The issue with the double-loaders remains in this iteration, making the deletion of the item "Overall, I enjoyed participating in this method" necessary.

This lead to iteration five, in which the KMO decreased yet again (=.658), with a continued Bartlett's test of sphericity of <.0001. However, in this iteration, only three factors were

extracted based on their Eigenvalue >1, and together they only make up for 63.11% of the total variance. Furthermore, this iteration saw an increase in double-loadings. Out of these, "The time required to apply this method was very low" was the most critical and therefore deleted.
The resulting sixth iteration had satisfactory values on KMO (=.727) and Bartlett's test of sphericity (<.0001) and extracted once again three factors with 64.29% total variance explained. Unfortunately, this iteration also led to an increase in double-loadings. Considering that this sixth iteration has already minimized the original scale drastically without leading to a satisfactory result, the decision was made to accept the proposed scale as problematic for the evaluation of the traditional measurement method.

Nonetheless, with the interest of being able to compare the traditional measure with the eCBRM, an evaluation score has been computed, based on the means of the items (reverse coding in mind). The evaluation score will be separated into a score on each of the five dimensions originally proposed, as well as a total score. In the light of the preceding factor analysis, this has to be taken with caution. It is nevertheless necessary to be able to compare the evaluation of the traditional measure with that of the eCBRM.
For *ease of method use*, the traditional measure reached a 5.1/7. *Perception of effort* was ranked as 5.08/7, while *perception of time* came in with 4.94/7. The *enjoyability* of the traditional measure was given 4.23/7 from the participants, whereas the *reflectiveness* scored 4.05/7. The total score of the evaluation is 4.69/7.

Method validation - traditional method

Aside from getting insights into the evaluation of the method, it was crucial to assess how valid the respective methods are in measuring brand trust. This was done by adding the validation scale, which measures positive Word of Mouth (pWOM) and Repurchase Intention (RPI), which are proven outcomes of brand trust. The first step was to assess the scale's internal consistency by means of Cronbach's Alpha. Since the scale was in the survey twice, both times will be assessed.
The internal consistency of both scale uses is satisfactory, with the first time (most trusted brand) having a Cronbach's Alpha = .878, and the second (any other random brand) a Cronbach's Alpha = .921.
The purpose of the validation scale was to determine whether the method is valid in measuring brand trust, as it can be hypothesized based on academic literature, that a higher

level of brand trust leads to a higher level of both pWOM and RPI. Therefore, two t-tests have been conducted for the purpose of checking face validity, one between the mean trust score of the most trusted brand and the random other brand, and another one between the mean scores on the validation scale for these two brands. It was expected that the means of the most trusted brand are higher than the ones of the random other brand. After checking the data for normality (fulfilled), the following results were computed, as summarized in this table:

	Most trusted brand	**Random brand**	**t-test and significance level**
Mean trust score (sdev)	5.67 (.877)	5.58 (1.084)	t(11) = -.277, p=.787
Mean pWOM score (sdev)	5.32 (1.314)	4.35 (1.441)	t(26) = -3.557, p=.001*
Mean RPI score (sdev)	5.38 (1.265)	4.61 (1.449)	t(28) = -2.821, p=.009*

Table 3: Validation traditional measure, t-test

Despite the expected difference between most trusted and random brands, there was no significant mean difference found. However, the levels of the validation constructs provided satisfying results.

To provide nomological validity, a Pearson's Correlation analysis was conducted. At a significance level of 5%, it was expected that there will be a significant positive correlation between trust and the outcome variables pWOM and RPI. The analysis worked in two steps: Firstly, all six variables were entered to check that both the most trusted brand and the second, random brand lead to the expected outcome variable. Secondly, the trust scores, as well as the pWOM and RPI scores were combined, leading to only three variables and a more general look on the validity of the method.

In the first step, all correlations were significant and positive. For the most trusted brand, the trust score correlated strongly with pWOM (r=.674) and RPI (=.429). The second, random brand yielded similar results, with trust correlating with both pWOM (r=.763) and RPI (=.564) again.

The second step supported the previous satisfying results further: Trust in the traditional measure correlates significantly with both pWOM (r=.774) and RPI (r=.638). Moreover, there is also a significant correlation between pWOM and RPI (r=.741).

Based on these results, it can be concluded that the traditional measure is a valid method to measure brand trust. However, the results need to be taken with caution. The correlation coefficients were generally of a high degree, which is unusual as pWOM and RPI are not only explained by brand trust. While brand trust is a key antecedent of the outcome variables (Lau/Lee, 1999), other factors such as purchase satisfaction and brand knowledge play a role in the emergence of pWOM and RPI as well (East et al., 2017; Russell-Bennett et al., 2007). The very high correlation degrees could be a result of common method bias (MacKenzie/Podsakoff, 2012), since both brand trust and pWOM/RPI were measured on the same scale type. This would be supported by the correlations for RPI being even higher than the ones for pWOM, seeing as the RPI questions came last in the scale.

Analysis and report of eCBRM results

The sample originally consisted of 154 participants. After data cleansing, 107 responses from the eCBRM are usable, out of which 96 participants transferred to the second stage in Qualtrics. This gives the eCBRM a drop-out rate of 9.35%. The ages of those participants who stayed range from 19 to 60, with a cluster of people in their early to mid-twenties. 70.1% identify as female, 27.6% as male, and 2.3% identify differently or prefer not to disclose their gender. The majority of this sample has attended higher education, with 55.2% having a Bachelor's degree and another 26.4% owning a Master's degree. Almost half of the sample is currently living in Holland (49.4%), and another 28.2% are situated in Germany. The remaining 22.4% are scattered all over the world, with a clustering in the EU. Equal parts of the sample are of German (28.7%) and Dutch (29.9%) origin, and the remaining 41.4% were born predominantly in EU countries. The high percentage of participants of non-German or Dutch origin is due to the distribution among international students.
The participants' annual net household income is quite evenly distributed, with >45.000€ the most chosen option (21.2%). Second most chosen is 7.500-14.999€ (20.0%), followed by <7.499€ (18.8%).
Just as the sample for the traditional measure survey, the sample population is not evenly distributed. However, both samples show the same patterns and are therefore well comparable.

Within the eCBRM, the participants mentioned on average 4.31 brands. On average, the participants spent 7.45 minutes filling out the eCBRM and ensuing survey. However, filling out the eCBRM only took about one and a half minutes on average.

The category involvement scale used showed a satisfactory internal consistency, as indicated by Cronbach's Alpha = .888. Overall, the participants seemed to not be very involved in the shower foam/gel category and do not concern themselves with this specific product category. However, they do cherish using shower foam/gel. The total category involvement score with this method lies at 3.85/7.

Method evaluation - eCBRM

The evaluation scale, consisting of 15 items in five dimensions, proved to be of satisfactory internal consistency with Cronbach's Alpha = .842.
As for the traditional measure survey, scores based on the items' means were conducted. *Ease of method use* was rated 5.13/7 by participants. *Perception of effort* was rated 4.81/7, while *perception of time* got 5.12/7. The participants rated the *enjoyability* of the eCBRM 5.16/7, and the *reflectiveness* 4.63/7. In total, the eCBRM got a score of 4.95/7.

Since the factor analysis of the evaluation scale from the traditional measure showed some potential flaws in the scale itself, special attention was given to the factor analysis here. The setup was identical to ensure comparability.
The first iteration proved the data to be usable, with KMO = .801 and Bartlett's test of sphericity < .0001. Based on their Eigenvalues > 1, five factors were extracted that together explained 73.65% of the total variance. This is both satisfying and in accordance with the proposed dimensions. However, a closer look into the items loading on the five factors reveals that the issue of double-loaders is existent here as well. The item with the strongest double-loading ("I felt bored using this method", reverse-coded) was deleted, leading to iteration two with KMO = .800 and Bartlett's test of sphericity <.0001. However, in this iteration only four factors were extracted, that together explain 68.58% of the total variance. While this is still above the threshold, it is a weaker explanatory power than iteration one, but more importantly, also deviates from the proposed five dimensions. Despite this, iteration two holds the benefit of having reduced the amount of double-loaders.
Based on the rotated factor matrix, the decision was made to delete the item "The effort required to apply this method was very low", as it had the strongest double-loading.
In iteration three, both KMO (=.797) and Bartlett's test of sphericity (<.0001) were satisfactory. Similar to iteration two, there were four factors extracted based on their Eigenvalue >1, and together they explained 71.4% of the total variance. Furthermore, the amount of double-loaders decreased again. On the base of double-loadings, the item "This

method is fun to use" was eradicated.
The resulting fourth iteration showed satisfactory KMO (=.767) and Bartletts's test of sphericity (<.0001). Again, four factors were extracted, that together explained 72.74% of the total variance. All item loadings after the rotation were strong, and there were no double-loadings. Therefore, this iteration will go through and get interpreted. Table 4 summarized the factor loadings and their interpretation (Appendix A).
While this iteration yielded statistically satisfactory results, it needs to be kept in mind that they are not in agreement with the proposed evaluation dimensions.

Method validation - eCBRM

The reliability of the twice used validation scale is highly satisfactory, with the first used scale having a Cronbach's Alpha = .856, and the second used scale a Cronbach's Alpha = .943. Just as the validation scale, the brand trust scale has been used twice. For both times, the internal consistency is satisfactory, with the first one having a Cronbach's Alpha = .800 and the second one a Cronbach's Alpha = .927.

Lastly, the validity of the eCBRM has been tested. This was done by means of (a) general information about the trust measured, (b) Pearson's Correlation between the trust levels and the hypothesized outcome variables positive word of mouth, (c) Pearson's Correlation between the trust levels and the hypothesized outcome variable repeat purchase intention, and finally (d) Pearson's Correlation between the trust levels and the hypothesized outcome variable loyalty, made up of pWOM and RPI. In each case, the trust levels for the most trusted brand, the random other brand, and a merger between the two will be used. This holds for both the brands measured by the target in the eCBRM and the brands measured in the ensuing Likert-scale (identical with the scale used in the traditional method). To be comparable, both trust scores needed to be recoded. The target values had a range of 0-7 with 0 being the strongest value, while the Likert-scale values ranged from 1-7 with 7 being the strongest. Therefore, the target values were recoded using the formula eCBRM_trust=x*6/7+1, with x being the calculated distance of the brand entry point from "ME". The Likert-scale values were recoded by simply switching around the scale. After that, both types of values ranged from 1-7, with 1 being the strongest trust.
As the outcome variables pWOM, RPI and loyalty are hypothesized to be high when trust is high, the desired correlation is negative.

In the following, analysis steps (a) through (d) will be summarized in tables and explained further in text.

Table 5a summarized the general information about the trust measures and how they relate to each other:

	Mean (sdev) eCBRM trust	**Mean (sdev) scale trust**	**t-test (sig. level)**	**Correlation between eCBRM trust/scale trust**	**Significance test**
Most trusted brand	N=84 1.975 (.858)	N=86 2.256 (.798)	t(83) = -3.000, p=.004*	.181	.121
Random brand	N=69 3.402 (1.488)	N=84 3.35 (1.369)	t(68)=.297, p=.768	-.036	.784
Merged	N=69 2.686 (.865)	N=84 2.792 (.902)	t(68)=-1.014, p=.314	.004	.978

Table 5a: Validation eCBRM, t-test and correlation trust

As can be seen, the eCBRM target measure showed stronger trust (M=2.256, sdev=.798) than the scale based method for the most trusted brand, t(83) = -3.000, p=.004. Both the random brand and the merged trust scores did not differ significantly between the target and the scale measure. Furthermore, there are no significant correlations between the two measures used in the eCBRM sample.

	Correlation between eCBRM trust/pWOM	**Significance test**	**Correlation between traditional trust/pWOM**	**Significance test**
Most trusted brand	.-317	.004*	.007	.954
Random brand	-.318	.008*	.002	.988
Merged	-.459	.000*	.000	.998

Table 5b: Validation eCBRM, correlation trust/pWOM

The results in Table 5b clearly show moderate correlations between the trust measured in the target and the hypothesized outcome variable pWOM. Furthermore, they are in the expected direction - all correlation coefficients are negative, meaning that if trust is stronger (indicated by low value), pWOM is stronger as well. It is noteworthy that despite the risk of common

method bias, no significant correlation could be found between the trust measured with the Likert-scale approach and pWOM.
The following table (5c) will illustrate the correlations between trust and the second hypothesized outcome variable, repeat purchase intention.

	Correlation between eCBRM trust/RPI	**Significance test**	**Correlation between traditional trust/RPI**	**Significance test**
Most trusted brand	-.193	.085	.007	.955
Random brand	-.279	.020*	.140	.241
Merged	-.355	.003*	.114	.339

Table 5c: Validation eCBRM, correlation trust/RPI

As with pWOM, there is no significant correlation to be found for the trust measured with the Likert-scale and the hypothesized outcome variable RPI. In case of the trust measured with the target, significant correlations with RPI in the expected direction were only existent for the random brand trust level and the merged trust level. The most trusted brand trust level did not correlate with RPI.

Lastly, the correlations between the different trust levels and the combined outcome variable loyalty (pWOM+RPI) can be found in Table 5d:

	Correlation between eCBRM trust/pWOM+ RPI	**Significance test**	**Correlation between traditional trust/pWOM+ RPI**	**Significance test**
Most trusted brand	-.270	.015*	.007	.951
Random brand	-.314	.009*	.076	.526
Merged	-.429	.000*	.061	.608

Table 5d: Validation eCBRM, correlation trust/loyalty

Once again, the correlations between the trust measured in the target and the outcome variable are satisfactory, as they are both significant and in the expected direction. As in steps (b) and (c)no correlation could be found between the trust measured with the scale and the outcome variable.

These analysis results show that the target in the eCBRM is a valid tool to measure brand trust, since the expectation of higher scores for pWOM and RPI when the trust scores are also high was in most cases met. This is highly satisfactory, as the target presents the actual eCBRM and the Likert-scale approach was used only for the purpose of validation. However, it is noteworthy that there appears to be an issue with the hypothesized correlation between trust and RPI, as indicated by Table 5c.

Comparison between traditional measure and eCBRM

As described in the introduction, the aim of this study is two-fold. For one, it aims to discover whether the eCBRM is a valid measurement method of brand trust. The second goal of the study is to determine whether the eCBRM is, in fact, perceived as more enjoyable than the traditional measurement.
The research results above indicate that both eCBRM and traditional measure validly measure brand trust. The remaining question is whether the eCBRM measures trust differently, i.e. whether the trust scores of the eCBRM are significantly higher or lower from those of the traditional measurement. To determine this, the choice was made to compare the mean trust score for one specific brand. The motivation behind this lies in the very different sample sizes provided by traditional method and eCBRM. Nivea has been mentioned frequently in both methods and the sample sizes for the independent t-test are close enough to provide usable results. To make the scores comparable, the variables were recoded as described in the method validation chapter of the eCBRM.

	Mean trust score eCBRM (sdev)	**Mean trust score Traditional method (sdev)**	**t-test and significance level**
Nivea	N=51 3.463 (1.487)	N=34 3.007 (1.049)	t(83) = -1.548, p=.002*

Table 6: Comparison trust scores Nivea, t-test

These results indicate that the eCBRM does, in fact, measure brand trust differently than the traditional method, and generates higher trust scores.

Next to establishing whether the eCBRM is as valid a measurement tool as the traditional brand trust scale, the focus of this study lays heavily on determining which method is perceived as more enjoyable for the participants. For this purpose, the 15-item evaluation scale has been produced. The results per method can be seen above. In order to learn whether there are significant differences in the evaluation of the two methods, multiple independent t-tests have been conducted, for each of the five dimensions and the total evaluation score. Due to the differing results of the factor analysis, the original dimensions have been kept for the comparing analysis. The results are summarized in the following table:

	Mean traditional measure (sdev)	**Mean eCBRM (sdev)**	**t-test and significance**
Total evaluation	4.69 (.886)	4.95 (.863)	t(150) = -1.816, p=.979
Ease of method use	5.1 (1.223)	5.131 (1.282)	t(150) = -.148, p=.768
Perception of effort	5.079 (1.379)	4.81 (1.256)	t(150) = 1.242, p=.632
Enjoyability	4.228 (1.256)	5.157 (1.15)	t(150) = -4.726, p=.550
Perception of time	4.944 (1.245)	5.124 (1.185)	t(150) = -.899, p=.396
Reflectiveness	4.048 (1.162)	4.629 (1.328)	t(150) = -2.799, p=.130

Table 7: Comparison evaluation

Lastly, the functionality of the two methods needs to be compared. For this purpose, the amount of brands entered, the time spent on the survey, and the category involvement have been compared by means of an independent t-test.
The results can be found in Table 8:

	Mean traditional measure (sdev)	**Mean eCBRM (sdev)**	**t-test and significance**
#brands	1.41 (1.164)	4.31 (2.308)	t(216) = -11.751, p=.000*
time (in sec.)	348.28 (461.39)	447.08 (359.357)	t(185) = -1.612, p=.312

Category involvement	3.586 (.77)	3.905 (.97)	t(133) = -1.999, p=.100

Table 8: Comparison method background

Discussion and conclusion

Despite the expectations and previous positive results (Horváth et al., 2020), the CBRM as an online tool does not seem to work significantly better than the traditional brand trust scale. While it is without question a valid tool to measure brand trust, in almost every other aspect it yielded results just like the traditional measure. The only improvement the eCBRM holds compared to the traditional scale is the amount of brands, which is significantly higher. This, however, is a very important improvement. The more brands the tool measures, the more insight the tool is able to generate for researchers and marketers alike, meaning that the data is of higher quality.
One aspect in which eCBRM and traditional measure diverged was the brand trust scores, which were significantly higher for the eCBRM. This adds an interesting point to the eCBRM - while it is definitely valid in measuring brand trust, the outcome is higher. The reason for this phenomenon could not be explored within the frame of this study, but should surely be researched in the future.

Furthermore, the drop-out rate for the eCBRM is much lower - unfortunately it is not possible to draw any in-depth conclusions about these specific surveys from that, as those participants who dropped out could not be interviewed as to the reasoning. However, there has been research done on the reason behind participants dropping out of surveys. On that basis, the participants dropping out of the traditional measure survey can be classified as *answering drop-outs* (Bosnjak/Tuten, 2001), seeing how they answered a varying amount of questions before leaving the survey. The reason behind survey answering behaviour is often thought to be in the participants motivation, ability and opportunity to fully process information provided to them (Bosnjak/Tuten, 2001) - in this context, it appears most likely that the participants were originally motivated to fill out the survey, but ran into difficulties throughout, i.e. running out of brands to name. Furthermore, it is entirely possible that the repetitive nature of the questions lead to a loss of motivation.
In the case of the eCBRM, the drop-out happened often at the transfer point between the eCBRM website and the Qualtrics website. In this case, it can be hypothesized that while the motivation was high, the participant did not fully understand the transfer, was worried about data security or experienced technical difficulties.
Moreover, in both methods the survey in Qualtrics used forced responses. This decision was made with the intention to gather complete data-sets and encourage the participants to enter

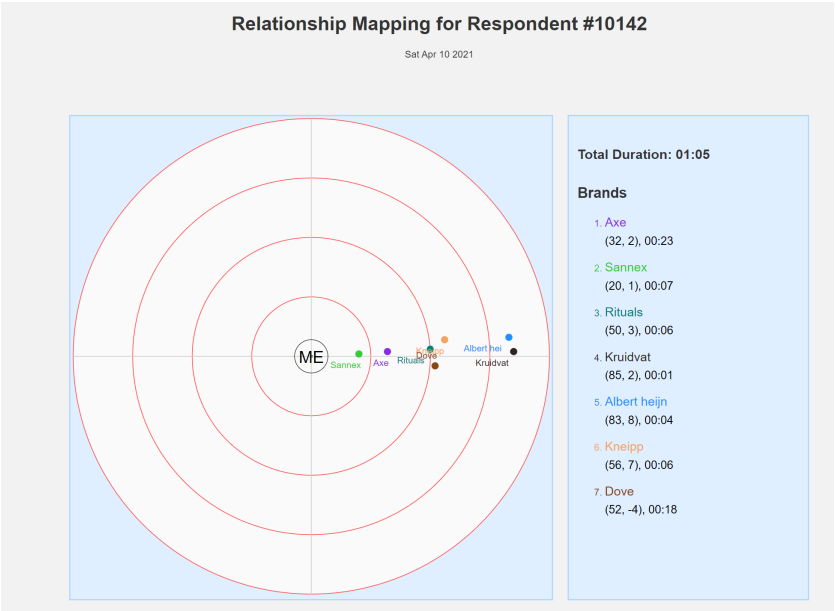
as many brands as possible. However, forced response type surveys come with a risk of increased drop-out rate (Stieger/Reips/Voracek, 2007). This increase in drop-out rate was sought to be combated by the option to skip the brand entry questions at any point the participant wanted, yet unfortunately this seems to have failed.
Overall, it is likely that a combination of the increased risk created by the forced response type questions and a loss in motivation lead to the high drop-out rate in the traditional measure, while the lower drop-out rate in the eCBRM survey appears to be mostly influenced by technical worries. This is an indirect sign that the eCBRM is perceived as less frustrating than the traditional measure, and supports the hypothesis that the eCBRM is more enjoyable for the participants. This results in one big issue that should be kept in mind: the data quality. Due to the high drop-out rate of the traditional measure, the sample size turned out to be rather small. This is of course also a type of evaluation of the traditional measure - quite a lot of participants seemed to be so annoyed or bored by it that they dropped out very quickly. This problem does not exist for the eCBRM.

Issues and solutions in the eCBRM

That however is not to say that there are no issues in the eCBRM. In fact, the data analysis and conversations with participants revealed quite a few problems.
First off, there seems to be general confusion as to the usefulness of the participants' answers. Multiple people reached out to ask whether they in fact filled out the target correctly, and whether their answers were usable for this project. This appears to be an unforeseen, yet influential issue: The eCBRM is simple and easy to use, which was supposed to be a major advantage. However, in its simplicity, participants started doubting the usefulness of their input - the eCBRM is, so to say, confusingly easy to use.

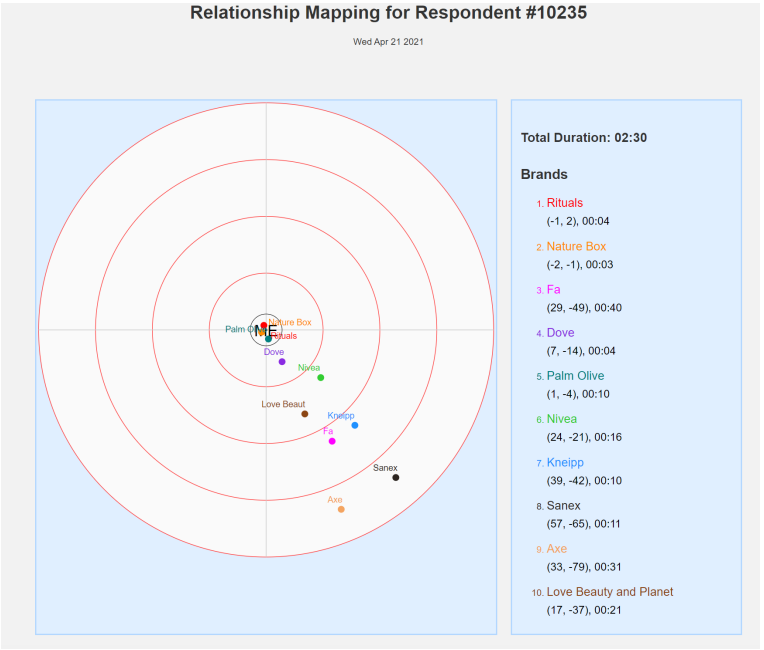
Furthermore, forging the eCBRM into an exclusively quantitative tool leads to a loss of knowledge gained. This becomes most apparent when looking at the brand placement. First off, the list generated by the eCBRM does record changes, and in the data analysis it was clear that most participants changed the brand placements. However, there is no insight into the thought process behind that. Secondly, the meaning of the brands' placements get lost while calculating the difference. In a lot of cases, a participant would place two brands within the same distance of "ME", but on opposing sides. This is a recurring pattern, yet it is impossible to understand the reasoning behind it. Moreover, the trust score for both brands will be very similar after the calculation, which in the data reads as if the participant trusts the

brands equally. The pattern of placement however indicated some differences.
Generally, the translation of the placement into strictly numerical outcomes leaves out some interesting aspects that perspired upon visual inspection of the targets. Most participants put the brands in the target in a pattern.
In the following, multiple examples of this can be found, as well as discussions of the pattern:



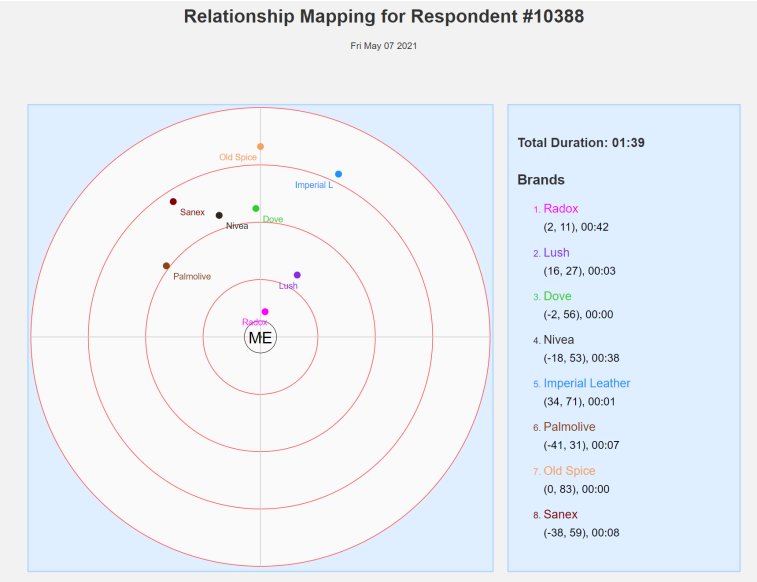
In this case, the participant organized all their brands on a relatively straight line. This has been mentioned during the pre-tests by a few male testers, as a possible better solution. There will be a more detailed discussion of this suggestion later on.

Fig. 6a: eCBRM placement pattern



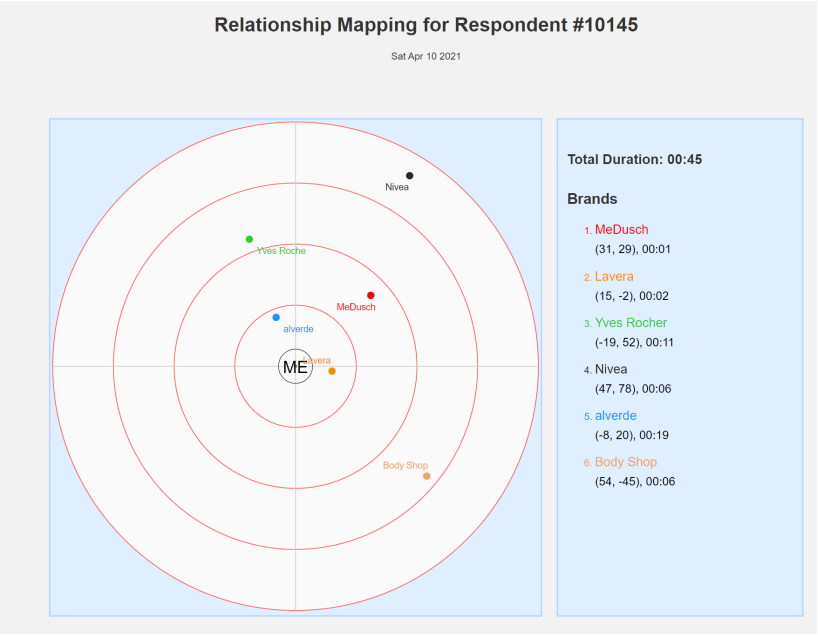
This example showcases a clustering tendency that could be found with quite a lot of participants. As can be seen, they only utilize one quadrant, and keep all entered brands close to each other.

Fig. 6b: eCBRM placement pattern



In this example, another frequent issue can be seen: A high number of participants used only the top half of the target. This could be due to them believing that a placement on the lower half automatically means no/lower trust in the respective brand.

Fig. 6c: eCBRM placement pattern



This target showcases a good spread of the brand placements. Compared to the other examples, it is also apparent that the distances between the brands are much larger.

Fig. 6d: eCBRM placement pattern

As showcased by these examples, the placements of the brands often fall into different patterns. With the eCBRM in its current form, it is however not possible to learn about what the patterns mean and how they come to be.

Outcome

The research objective was to assess whether the eCBRM is a valid tool to measure brand trust in the shower foam/gel category, and to gain insight into the method evaluation. After the data collection and analysis, it is without question possible to accept the eCBRM as a valid measurement tool. This is supported by the outcomes of the validation scale, and simultaneously offers further support to pWOM and RPI being outcomes of brand trust (East, Romaniuk, Chawdhary, Uncles, 2017; Chiu/Chang/Cheng/Fang, 2009; Zeithamel et al.,1996). Considering that the eCBRM is still in its first development stage, this is a promising indication. Especially with the feedback provided in the pre-tests and from sources around the researchers, it is likely that after further improvements the eCBRM will turn into a measurement tool that is not only as valid as the traditional scaling approach, but the more enjoyable option for participants.

The second research objective is not as easily answerable. It was hypothesized in the beginning of this thesis that the eCBRM is a favorable method of measuring brand trust, as the participants were believed to find it easier and more enjoyable. While the results do not support this hypothesis, they clearly indicate that the eCBRM is equivalent to the traditional measure in terms of evaluation. Considering that the eCBRM is still in its first development stage, this is a promising indication. Especially with the feedback provided in the pre-tests and from sources around the researchers, it is likely that after further improvements the eCBRM will turn into a measurement tool that is not only as valid as the traditional scaling approach, but the more enjoyable option for participants.

This is supported by the high drop-out rate of the traditional method, which clearly speaks of a strong and quickly developed level of frustration or boredom on the participant's side. However, it is of immense importance for the researcher to gather as many responses as possible, and to have the best data quality as possible. Both points are major advantages the eCBRM holds over the traditional method even now.

Based on the results, it is clearly advisable to keep developing the eCBRM. A few points in dire need of development became clear through the collected feedback: First and foremost, most participants expressed a desire for a drag-and-drop function to change the brands' positions. Furthermore, the mobile application needs to be improved. It became clear during the data collection, that the touchscreen on mobile phones, iPads or tablets complicated the brand entry. As this led to frustrations on the side of the participant, it needs to be sorted out.

Moreover, there seemed to be some confusion around what the participant was expected to do, indicating a need for a different way of explaining the tool and their task. In its current state, the explanation provided does not go into detail about how the participant's data will be used - this is naturally to prevent the participants from giving dishonest answers. However, the task of filling in brands appeared so easy and simple to a lot of participants that they ended up doubting whether their contribution was correct and actually helpful to the research. Therefore, a few participants ended up stopping the survey.

Another point that needs to be reconsidered and, if possible, improved, is the effort and time needed for the data analysis. In its current form, the research results from eCBRM and traditional measure are not comparable, meaning that quite a lot of manual work is needed before the data is in a state in which it can be analysed. That is naturally a breeding ground for errors, as the data has been worked with manually, and not only by computer programs. The chance of having mistakes such as wrongly entered numerical values or missing commas is therefore quite high.

Lastly, as represented in Fig. 6a, some participants thought it would be easier to fill out the eCBRM as if it were a straight line. After some consideration, this thought process does indeed hold multiple advantages over the current form of the eCBRM as a target. While it yields the same benefits as the eCBRM, i.e. being easy, intuitive and fun, it is visually clearer what the brand positioning means. The insecurities of the participants as to what the upper and lower half of the target means, and the complications in analysing and interpreting the positioning would be eradicated.

One option would be the scale presented in Fig. 5, however, it seems beneficial to lean on the Visual Analogue Scale (van Engelen/Jungen/Bokhorst, 2014; Langley/Sheppeard, 1984). This visual tool is frequently used in healthcare, and heavily appreciated for its universal understanding and ease of use. The VAS is proven to be valid and reliable, and efficient beyond language borders (Karcioglu, Topacoglu, Dikme, Dikme, 2018). Having said that, the VAS has naturally only been tested in healthcare settings, and therefore needs to be validated in a Marketing setting.

One of the most commonly used versions of the VAS, often seen in emergency rooms, features a rank of smileys, going from happy to sad. However, other versions range from two opposite points, such as "no pain" to "pain couldn't be worse". This version could be easily adapted for the purpose of measuring consumer brand relationships for multiple brands at once. In the context of this study, a VAS-scale adaption could look as follows:

Fig. 7a: Alternative form for the eCBRM, participant view

Once filled out by the participant, the researcher would be presented with this outcome:

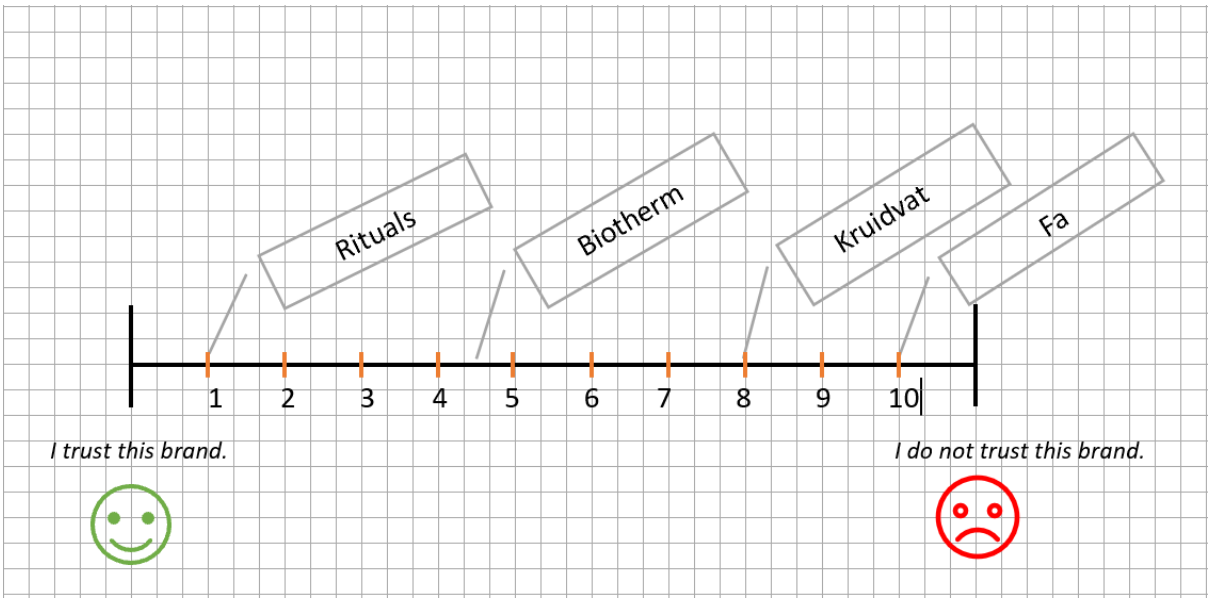


Fig. 7b: Alternative form for the eCBRM, researcher view

Especially with having a grid in the background dividing the graph into sectors or giving points for the placement on the graph (as done in the example in Fig. 7b), the data analysis for singular brands would be much simplified, just as the comparison. In the example given in Fig. 7b, it would be possible to postulate that the participant's trust level of Kruidvat and Fa are very close together. Moreover, it is apparent at first glance which score the brands have. In the eCBRM, such a comparison could not be made if the participant had put the two brands at similar distances, but on other ends of the target, as it would not have been clear whether there was a certain reasoning behind it.

In healthcare, the VAS is usually a physical tool of around 10cm with points that have a certain meaning, such as “light pain”, allowing the treating healthcare worker to immediately understand the urgency of the situation (Langley/Sheppeard, 1984). This approach can easily get translated into an online tool, and the idea of having specific cut-off points for the consumer brand relationship offers further ease of analysis. If, for example, 0-3 means satisfying trust, 4-6 critical trust, and 7-10 weak trust, the brands in Fig. 7b can easily be analysed in these categories even before more complex analysis methods in SPSS. Here, both Kruidvat and Fa indicate that there is an urgent need for branding activities to increase brand trust.

Practical and managerial implications

While the eCBRM did not turn out to be significantly better than the traditional brand scale measurement, it did prove itself to be a valid and reliable alternative. While it still needs ample improvements, the eCBRM is already a valuable tool offering a few key benefits to managers and researchers alike. As hypothesized in the beginning of this study, the eCBRM allows the researching agent to compare one person’s relationship with multiple brands in one single step. That leads to a more detailed gathering of knowledge. As detailed above, the drop-out rate of the eCBRM is much lower, meaning that the data set holds more complete answers. Both of these points hold crucial advantages for the researcher or manager - the amount of brands is higher, as supported by the results, and the data set is more likely to be of high quality.

Nevertheless, it appears to be too early to make the eCBRM available for active market research. Once all the quirks of the eCBRM have been removed, it will however present itself as a highly valuable tool, allowing managers to collect a great amount of data allowing for direct comparison with the competing brands. For this purpose, it is advisable to add a function to the eCBRM in which managers can predefine a list of brands they want to compare. For example, a marketing manager at P&G might be interested to see how their brands perform compared to brands from Unilever in the shower gel category - with a predefined list of brands, the eCBRM would be a highly efficient tool to realize this comparison.

Moreover, the eCBRM holds an especially high value for brands that operate in a very competitive context, as already postulated in the initial round of testing (Horváth et al., 2020). For brands such as the ANWB, who hold almost a monopoly situation, a measurement tool

that focuses on measuring multiple brand relationships at once would not be advisable. However, for brands such as the aforementioned Unilever or Procter & Gamble, looking into how their brands perform compared to others is not only valuable, it is absolutely necessary. The eCBRM presents itself as a promising tool for this goal. It is likely that once the eCBRM has been sufficiently improved, marketers in the FMCG industry will profit majorly from the tool.
The eCBRM holds yet another valuable benefit, which lies in its digital nature. It is now possible for researchers and managers to gather information in different countries and cultures, which potentially offers them an efficient breeding ground for the internationalization of their brand(s).

The eCBRM has been developed as both a commercial and scientific measurement tool and can be used by both marketers and researchers. However, so far the development process only involved researchers. Since the tool is supposed to hold multiple advantages for marketers as well, it would be sensible to integrate them in the process already. This would allow for a smooth transition from research to commercial tool, and ensure that the eCBRM will perform successfully and will be used frequently.

Overall, the eCBRM - once fully developed and improved - offers a myriad of advantages over the traditional measurement methods. Especially when offering combined qualitative and quantitative results, marketers can generate in-depth insights for large groups of consumers, allowing them to have a solid base for any decision made in the development of their brand. It is therefore definitely apt to keep enhancing the eCBRM, and also to already involve marketers in the process.

Limitations of the study

First and most importantly, the data quality - especially of the data collected with the traditional measurement method - was not as desired. The high drop-out rate during the traditional measure, while informative in regards to the participants' experience with this method, impeded the insightfulness of the data analysis. In total, the results of both branches of analysis are not representative, which should be considered when planning further actions and developments based on this study.

Moreover, the results of the category involvement scale indicate that shower foam/gel is in fact a low involvement category, which was not expected beforehand. As the first studies on

the CBRM were centered around high involvement categories such as cars (Horváth et al., 2020), the results of the eCBRM might be less promising due to the lower involvement. Additionally, the evaluation scale proved to be different than expected. This is a repeated issue from the previous studies on the CBRM (Horváth et al., 2020), and again makes the conclusions drawn based on the data analysis less certain.

This study has been limited by its theoretical setup as well. While the eCBRM is in theory able to measure any kind of consumer brand relationship, it was impossible to measure more than brand trust. Similarly, the category was limited to shower foam/gel - it is therefore not possible to draw conclusions about the validity and effectiveness of the eCBRM as a measurement tool for brand trust in other categories.

The biggest limitation of this study, however, came from the time and money constraints. Developing a fully functioning online tool within just about one and a half months is an ambitious exercise, and will inevitably lead to a few rough edges and issues in the functionality. In this case, the functionality issues were minor enough to not hamper the data collection or quality, and yet they need to be worked out before researching the eCBRM in more depth. Overall, this study should be viewed as a pilot study on the eCBRM, with an awareness of the eCBRM being in its earliest stage.

Future research

In concert with the consideration that the eCBRM is currently in its earliest stage, it is apparent that a lot of further research is needed before implementing the eCBRM in the marketing field.
Thankfully, the results indicate that the eCBRM is already valid and reliable, and it is therefore advisable to continue with the development of the eCBRM.
Above all, the eCBRM needs to be enhanced. The points mentioned above - i.e. drag-and-drop function, predefined brand lists, and a different way of explaining - are crucial to be implemented in the tool. Additionally, it should be considered, and preferably tested, whether a setup adapting the VAS scale yields better results. This might be the right step to increase participant enjoyment, seeing that in its current form the eCBRM did not lead to a favorable evaluation compared with the traditional measure - which is one of the main hypothesized benefits granted by the eCBRM.

Beyond the setup of the eCBRM, it is also of grave importance to test the eCBRM for different consumer brand relationships, such as brand loyalty, brand love or commitment. For the relationship construct of brand trust, testing for different categories is needed. Since the results showed the selected category of shower foam/gel to be of low involvement, further research should firstly be concentrated on a high involvement category.

On top of that, the (e)CBRM has now been tested as both a quantitative and qualitative tool. Both approaches have proven to come with advantages and disadvantages. Especially with an eye to the difficulty in interpreting the patterns of brand placement in the quantitative form, it is sensible to develop and test a version of the eCBRM that incorporates qualitative elements. This could be done by asking the participants for short statements on the reasoning behind the brand placements, or by having one set of purely quantitative and one set of purely qualitative data collection.

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Appendix

A. Factor Analysis table

	Factor 1	Factor 2	Factor 3	Factor 4
Item (loading)	"Overall, I enjoyed participating in this method" (.739); "Time went by quickly while filling out this method" (.727); "This method really displays the way I feel about the different brands" (.869); "This method enables me to uncover my trust in the brands" (.766); "I feel that by using this method, I was able to communicate my true feelings towards the brand" (.870)	"REV_I had to concentrate a lot" (.895); "REV_It was difficult to apply this method" (.696); "REV_I had to think very hard" (.834)	"This method is user-friendly" (.803); "This method gives the possibility to recover from mistakes easily" (.847); "I could use this method successfully next time" (.703)	"The time required to fill out this method was very low" (.931);
Interpretation of the factor	Enjoyability and reflectiveness	Perception of mental effort	Ease of use	Time perception

Table 4: Factor Analysis eCBRM