# ARCADA

# What are the reasons for consumers' non-adoption of shampoo bars?

Heli Pessala

Master Thesis
International Business Management
2024

# Degree Thesis

Heli, Pessala

What are the reasons for consumers' non-adoption of shampoo bars?

Arcada University of Applied Sciences: International Business Management, 2024.

## Identification number:

## Abstract:

This study investigated barriers inhibiting consumers from adopting shampoo bars. The research model was modified based on prior research by Sadiq et al. (2020), which utilized the innovation resistance theory model developed by Ram & Sheth (1989) that describes functional and psychological barriers for innovation adoption. The data were collected through an online survey from 443 respondents via social media; these respondents were over 18 years old and lived in Finland. The survey sample was analyzed using multiple linear regression method to test the hypotheses. The two open-ended questions of the survey were analyzed using a simple thematic analysis. According to the data analysis results, the research model explained 75,8% of the variation in shampoo bar purchase intention, with the tradition barrier showing the strongest contribution, followed by the image barrier. Additionally, the thematic analysis identified functional barriers, such as usability and performance, as possible adoption barriers. The findings of this study suggest that marketing strategies should consider consumers' hesitance to switch their habits in choosing a shampoo product as well as their skepticism and negative image of shampoo bars. Organizations should utilize positive early adopter experiences, emphasize shampoo bars' ecological and health benefits, improve accessibility, and address usability concerns. These efforts could further help reducing consumer uncertainties and enhance the adoption of shampoo bars. The limitations of this study include its narrow focus on a single product and the overrepresentation of female respondents and those from southern Finland. Additionally, the research model required the exclusion of certain questions from the multiple linear regression analysis to increase the reliability of the results.

**Keywords:** Shampoo bar, Consumer resistance, Adoption barrier, Eco-friendly personal care product, Innovation resistance, Purchase intention

# Contents

## Tables

## Figures

# 1 Introduction

In recent decades, the increase in plastic waste has emerged as a serious environmental concern. The reliance on plastic materials in various consumer goods is a significant contributor to the plastic crisis. The growing amount of single-use plastic in product packaging fuels this crisis as the plastic often ends up straight to the sea or in landfills, where it leaks into our environment, ground water and eventually reaches the ocean (Ogle, 2018). Daily essentials like shampoo contribute substantially to the piles of plastic waste, with their single-use plastic packaging. It is estimated that in the U.S. for example over 500 million shampoo bottles are ditched into landfills every year (Duerr, 2021). In response to the plastic crisis and a shift towards more eco-friendly consumption, a zero-waste mindset has gained consumers' interest. The zero-waste mindset emphasizes limiting consumption and choosing eco-friendly options with minimal plastic-free recyclable or biodegradable packaging or even package-free alternatives (Duerr, 2021). One such eco-friendly alternative to a liquid shampoo in plastic bottle is a solid shampoo bar, packaged in minimal paper wrapping or cardboard boxes or even sold completely without packaging (Ogle, 2018).

A shampoo bar is formulated in a concentrated solid form, which eliminates the need for plastic container and in fact can last three times as long as one bottle of liquid shampoo (Duerr, 2021). In addition to reducing overall plastic waste, especially the eco-certified shampoo bars often contain mainly natural ingredients making them a gentler option for our scalp and skin due to the lower levels of allergens, such as preservatives, fragrances, or surfactants (Transparency Market Research Inc., 2024; Voller & Warshaw, 2021). The solid form is also a convenient option for travelers as it takes less space, eliminates the risk of leakage, and reduces the amount of liquids (Ogle, 2018). Despite the numerous advantages that shampoo bars offer and the rising availability in product selection, majority of consumers worldwide have not traded liquid shampoo to a solid shampoo bar. Prior research has investigated the consumer purchase behavior regarding natural or organic cosmetic products (Yeon Kim & Chung, 2011; Sadiq et al., 2021; Testa et al., 2023; Zollo et al., 2021), but studies concerning the factors affecting shampoo bar adoption is limited, indicating a need for further studies in this area. In this research a modification of the innovation resistance model by Ram & Sheth (1989) will be tested, and the focus is on the significance of adoption barriers that inhibit shampoo bar purchase intention.

## 1.1 Purpose and research question

The main purpose of this study is to find out what barriers inhibit consumers from adopting shampoo bars. The research will focus on functional and psychological barriers outlined in the innovation resistance model by Ram and Sheth (1989). The research model is a modification of prior research by Sadiq et al. (2021), which utilized the innovation resistance theory. The research aims to determine which specific barriers can inhibit the intention to purchase and use shampoo bars. Therefore, the research question that the study will aim to determine is:

- What factors inhibit consumers' purchase intention of shampoo bars?

This study will focus on consumers over the age of 18 living in Finland. Data was collected with a mainly quantitative online survey. To gain a broad general perspective of the reasons regarding shampoo bar adoption, the data collection targeted both non-users and users of shampoo bars.

## 1.2 Structure of the study

The study starts with a literature review including a brief overview of the beauty and personal care market, introduction of shampoo bars, theoretical approaches to innovation adoption and resistance as well as prior research in the field. At the end of the literature review, the research model is presented. The third chapter presents the data collection method and analysis strategy. The fourth chapter includes the results of the survey. Finally, the study ends with presenting the conclusions, limitations, and ideas for future research.

# 2 Literature review and theory

## 2.1 Beauty and personal care market

Beauty and personal care market consists of different segments based on the product type as presented in Figure 1. The main segments include cosmetic, skin care, personal care products, and fragrances. The cosmetics subsegments include products for the face, lips, eyes, and nails, alongside selection in the natural cosmetics category. Similarly, the skin care subsegments cover products for the face, body, babies, and children, as well as sun protection items. Within the personal care category, there are subsegments for shower, bath, hair care, oral care, shaving, and deodorants. In 2021, personal care products had a 48% share of revenues, hence they had the largest share of the market. Skin care products had a share of 27%, making it the second largest product group. (Statista, 2021)

| Cosmetics | Skin Care | Personal Care | Fragrances |
|---|---|---|---|
| • Face | • Face | • Shower & Bath | |
| • Eyes | • Body | • Hair Care | |
| • Nails | • Sunscreens | • Oral Care | |
| • Natural Cosmetics | • Baby & Child | • Deodorants | |
| | | • Shaving | |

*Figure 1. Beauty and personal care market segments and subsegments (Statista, 2021)*

Beauty and personal care market has a broad selection of products labelled as green, natural, organic, or ecological. Consumers can identify authentic organic or ecological products from their official eco-certifications. Organic and ecological beauty and personal care products have several governing bodies and certificates. In Europe the most common certificates in this product category are Ecocert Cosmos, BDIH Certified Natural Cosmetics and Natrue-Label. For example, the Ecocert Cosmos certification requires that the certified products must contain mainly ingredients from of natural origin (for example botanical oils, waxes, herbal extracts, and essential oils) and certain degree of these ingredients must be produced organically. Additionally, the certification requires products to have eco-friendly production processes and packaging. The global market value of organic personal care products is growing steadily and is projected to continue its growth. (Ecocert, 2024; Ecolabel Index, 2024; Lush Ltd., 2024; Organic.org, 2024; Statista, 2023)

## 2.2 Shampoo bar as a hair care product

Shampoo bar is a hair care product that is in a solid form, similar in appearance to a bar soap. Shampoo bar formulations have minimal or zero amounts of water unlike traditional shampoo products, which normally contain 70-80% water of the total ingredients. Shampoo bar is designed to create a lather when applied directly to wet hair or rubbed between hands. Majority of shampoo bars contain high amounts of natural ingredients, are eco-friendly or even eco-certified and packaged in plastic free or biodegradable packaging. Shampoo bars are often formulated without high amounts of chemicals such as sodium lauryl sulfate, preservatives, and parabens, which makes them gentler to the skin than many liquid shampoos. (Langeek, 2020; Voller & Warshaw, 2021)

Additionally, shampoo bars often offer extended periods of use due to the concentrated solid form. Ethique (2023), a shampoo bar manufacturer, estimates that one of their shampoo bars equals to one liter or four bottles (250 ml each) of liquid shampoo and can be used for 80 times. The solid form also has the advantage of minimizing the amount of liquids while travelling. During recent decade, well-known shampoo bar manufacturers such as Ethique and Lush have continuously expanded their shampoo bar range to include more options for different hair types and consumer needs (Ethique, 2023; Lush Ltd., 2024).

Shampoo bars require different habits related to their usage compared to conventional liquid shampoo and therefore manufacturers need to educate consumers, especially those unfamiliar with the product. Even smaller manufacturers provide guidance on using shampoo bars in the shower and storing them properly to prevent premature depletion and potential bacterial growth caused by a wet shampoo bar. Hence, companies also offer supplementary products designed to assist in storing shampoo bars. Therefore, transitioning from liquid shampoo to shampoo bar requires consumers to pay attention to these instructions and adopt new habits. (Forget Me Not Finland, 2021; Transparency Market Research Inc., 2024)

Consumers have reported that shampoo bars can leave a sticky residue on the hair after washing. This could be caused by shampoo bar type, hair type or pH-levels. Therefore, switching to a shampoo bar can require consumers to test multiple different product types and have a transition time before achieving good results in washing performance. Shampoo bars come in two main types, with their washing ingredients being either shampoo-based or soap-

based. Soap-based shampoo bars can be called plant oil-based, and they are more traditional version containing surfactants such as Sodium Olivate, Sodium Castorate or Sodium Cocoate. Shampoo-based shampoo bars often contain biodegradable surfactants such as Sodium Coco Sulfate or Sodium Coco Isethionate. (Rabbit Glow, 2023; Voller & Warshaw, 2021)

## 2.3 Trends and barriers in consumer preferences for natural and clean beauty products

Consumers have been increasingly interested in natural and organic cosmetics, but during recent years there has been a growing interest towards clean beauty products that contain less unhealthy chemicals. Clean beauty product brands are more transparent about their ingredients and their origin as well as environmental impact of their products. These factors are appealing to consumers, who are looking for safer and less toxic options for themselves and for the environment. Consumers are becoming more aware of toxic ingredients and deceptive claims by companies and seek information from social media, reviews, and their own social network. During recent years the consumer focus has also been increasingly in product packaging. Consumers are more concerned of the environmental impact of single-use plastic and therefore prefer when beauty products are packaged in ecofriendly materials that can be reused, refilled, or biodegraded. Prior research has also discovered that men are more likely to purchase beauty products without considering their eco-friendly aspects. The current consumer trends in beauty and personal care products are summarized in Figure 2. (Picodi, 2024; Statista, 2023)



*Figure 2. Characteristics of clean beauty products that consumers search for (Statista, 2023)*

The barriers that can inhibit the purchase intention of natural cosmetics from a survey conducted by Statista (2023) in 2021 are presented in Figure 3. The survey included female consumers from France and China, who did not buy natural cosmetics. The main barrier in both countries was the price as natural cosmetics were considered too expensive. Second biggest barrier in these countries was related to habit, since respondents favored products that they have always been buying. Third biggest barrier in France was related to the value of natural cosmetics as respondents did not think that they brought any added value. However, in China the third biggest barrier was availability of natural cosmetic products as respondents could not find the products in places where they shopped. Fourth biggest barrier in France was related to the performance of natural cosmetics, hence respondents felt that they did not work as well as regular cosmetics. In China the fourth most common barrier was the lack of added value of natural cosmetics.
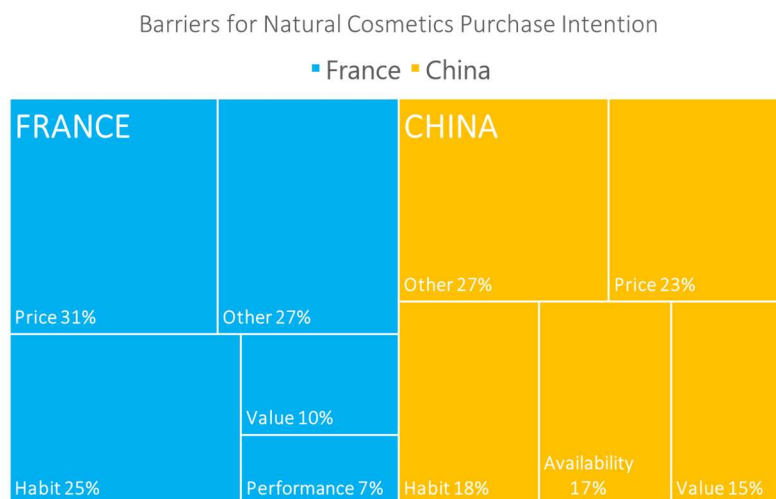


*Figure 3. Barriers for natural cosmetics purchase intention in France and China 2021; women participants who did not buy natural cosmetics (Statista, 2023)*

## 2.4  Diffusion of Innovations theory

Rogers' (2003) diffusion of innovations model is a theoretical framework that examines how new innovations are adopted amongst individuals or units. Products, concepts, or services can be considered innovative if they seem new by those adopting them. Hence it doesn't matter when the innovation was in fact first introduced or invented. Diffusion refers to the communication of an innovation across various channels within a social system, either spontaneously or through planned efforts. Diffusion of innovations model has four main elements, which are the innovation, communication channels, time, and the social system.

Communication channels are how the messages about innovations are transferred from one individual to another. Mass media channels are efficient in building knowledge concerning the innovation, yet interpersonal channels can more effectively change attitudes and positively affect innovation adoption. This is because in most cases, people tend to assess innovations based on subjective peer reviews rather than scientific reviews by experts. (Rogers, 2003, pp. 11-36)

Innovations have different characteristics depending on how people perceive them, and these characteristics affect the rate of adoption. These characteristics are relative advantage, compatibility, complexity, trialability and observability. Relative advantage indicates if an individual feels that the innovation is better than the preceding one and rate of adoption is faster if the relative advantage is significant. Compatibility means how the innovation aligns with the society's values and norms and the adoption rates accelerate when the innovation is more compatible. Complexity is the level of how difficult it is to understand and use an innovation; the simpler the innovation is to understand, the faster it is adopted. Trialability refers to the possibility to trial the innovation partly before adoption, which decreases the uncertainty of adopting an innovation. Observability indicates how much the results of an innovation are noticeable to other people and if others can see the results easily, it is more probable that they will adopt the innovation. Hence innovation characteristics affect the rate of adoption, and the two most significant characteristics are relative advantage and compatibility. (Rogers, 2003, pp. 11-17)

### 2.4.1 Adopter categories

Adopter categories are divided based on how early or late an innovation is adopted in relation to other members of the social system. The categories are divided into innovators, early adopters, early majority, late majority, and laggars. There are unifying traits within the categories, such as socioeconomic status, use of mass media channels, and interpersonal communication channels. The five different adopter categories and their main characteristics are presented in the next chapters. (Rogers, 2003, pp. 22, 282)

Innovators is the first and smallest adopter category, and its main characteristic can be described as courageous and risk-taking, and they can manage the high degree of uncertainty associated with an innovation. This first adopter category has a significant role in the

innovation diffusion process being the first ones to bring an innovation into a system. The second and significantly larger adopter category is called early adopters. Early adopters have a high degree of opinion leadership and therefore play a crucial role in the adoption process by providing guidance to others, which reduces uncertainty surrounding the innovation. The third and the fourth categories called early majority and late majority both represent the largest portion of the social system and are similar in size. The early majority are deliberate but adopt innovations slightly ahead of the remaining two categories. They possess a relatively low degree of opinion leadership and take a longer time to adopt an innovation compared to innovators and early adopters. The late majority are skeptical and influenced by peer pressure, which makes them adopt innovations after the majority. Laggards, the final category in the adoption process are traditional and a lengthy adoption period due to their cautious approach to change. (Rogers, 2003, pp. 282-285)

### 2.4.2  The Innovation-decision process

The innovation-decision process is how a person (or a unit) is first informed about the innovation and through various stages they finally adopt or reject the innovation. The five stages during which a new idea is being evaluated include knowledge stage, persuasion stage, decision stage, implementation stage, and confirmation stage. In the initial knowledge stage, individuals first become aware of the innovation followed by the persuasion stage, where they form either positive or negative perceptions of the innovation. The decision stage will end in innovation adoption or rejection followed by implementation stage, where the individual or unit will start using the innovation. Lastly, in the confirmation stage, they will either get support for their adoption or they get opposing information about it and end up canceling their decision to adopt the innovation. (Rogers, 2003, pp. 168-169)

In Roger's (2003) diffusion theory, the main idea is that the diffusion of innovation involves reducing the uncertainty that individual or group has about an innovation as time goes on. They look for information to clear doubts concerning the relative advantages of an innovation. In fact, the relative advantage of an innovation, which can be described as the expected benefits compared to the associated costs of adopting it, is an essential component of its information content and can have a major positive impact on the rate of adoption. (Rogers, 2003, pp. 232-233)

## 2.5 Innovation Resistance Theory

Innovation resistance theory examines the main barriers that explain individuals' resistance to innovations. Innovation resistance affects how quickly an innovation is adopted. Innovations face resistance because they might require a significant shift in earlier routines, that consumers are already satisfied with. Another reason behind the resistance can be that the innovation is not aligned with a person's beliefs. The innovation resistance theory divides major barriers for innovation adoption into functional and psychological barriers with several subcategories as presented in Figure 4. Functional barriers include product usage, product value, and product usage risk barriers. The psychological barriers include tradition, and product image barriers. The following chapters will present the barriers in more detail. (Ram & Sheth, 1989, pp. 5-7)
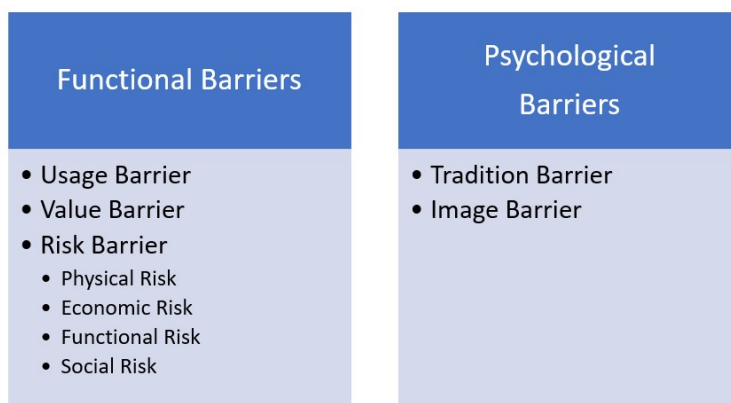
| Functional Barriers | Psychological Barriers |
|---|---|
| • Usage Barrier<br>• Value Barrier<br>• Risk Barrier<br>  • Physical Risk<br>  • Economic Risk<br>  • Functional Risk<br>  • Social Risk | • Tradition Barrier<br>• Image Barrier |

*Figure 4. Barriers that explain individual's resistance to innovations (author's own illustration, based on Ram & Sheth (1989))*

Functional barriers are more common if consumers think that adopting an innovation means considerable changes. Usage barrier is most likely the most significant cause for innovation resistance, and it is created when an innovation is not aligned with current routines. Adopting an innovation might require changes in personal routines or methods and resistance might occur if the usage of a product is not made easier. Innovations that require a considerable change in consumers' routines take a rather long development period of consumer acceptance. Value barrier is the second functional barrier that is related to the perceived value of an innovation. Customers are more motivated to adopt an innovation if the cost-benefit ratio is much better compared to the existing substitute. Risk barrier is the third type of functional barriers, and it is further divided into physical, economic, functional, and social risks. Physical risk is described as side-effects or damage that an innovation can cause to a person or their possessions. Economic risk is related to the cost of the innovation. If the price is high, there is

more perceived economic risk and consumers might wait for a cheaper alternative to appear on the market. Functional risk is related to innovation's functionality since there is a risk that it will operate incorrectly or unreliably. Social risk might prevent customers from adopting an innovation if they think that adoption can result in exclusion from society or mockery from other people. (Ram & Sheth, 1989, pp. 7-8)

Psychological barriers are created by customer's traditions and norms as well as their perceived product image. Psychological barriers are more likely to occur if adopting an innovation requires customer to make significant changes from earlier traditions and beliefs. Psychological barriers are divided into two different categories. Tradition barrier is relevant if a customer is required to depart from current traditions when adopting an innovation. These traditions might include for example social norms, family values or attitudes. The more a customer must deviate from tradition, the bigger tradition barrier is. Image barrier is related to the image that a customer has about an innovation. If a consumer establishes a negative image of an innovation, it can create an adoption barrier. The image barrier is linked to stereotypical thinking, which often creates false assumptions. (Ram & Sheth, 1989, pp. 7-9)

## 2.6 Prior research on adoption of eco-friendly beauty and personal care products

The study by Sadiq et al. (2021) investigated the purchase intention of eco-friendly cosmetics using the innovation resistance theory framework developed by Ram and Sheth (1989). The purpose was to find out what are the main factors or barriers causing resistance towards purchasing eco-friendly cosmetic products. The research model's barriers were divided according to the theory of innovation resistance, and they included functional and psychological barriers. An additional dimension of the research was to examine the role of environmental and health concerns as moderators to the suggested relations between barriers and purchase intention. Figure 5. illustrates the research model examining the purchase intention of eco-friendly cosmetics by Sadiq et al. (2021).

The study by Sadiq et al. (2021) employed an online survey as the quantitative data collection method. The online survey had 350 consumer responses, which were accumulated through Amazon Mechanical Turk crowdsourcing online platform. Respondents had to be 18 years old or older, Indian descent and live in India. The results of the research indicated that the tradition

barrier had the strongest influence on purchase intention resistance. This result indicates that consumers' norms, values, and beliefs were obstacles in adoption of eco-friendly cosmetics. Image barrier was the second strongest barrier, which indicates consumers' lack of trust in eco-friendly cosmetic products because they associate them with green washing. Furthermore, it was concluded that consumers' high environmental concern decreased the effect of value and image barriers on purchase intention. High health concern amongst consumers decreased the effect of tradition and risk barriers. Hence highlighting the environmental and health advantages of eco-friendly cosmetic products can reduce the consumer resistance.
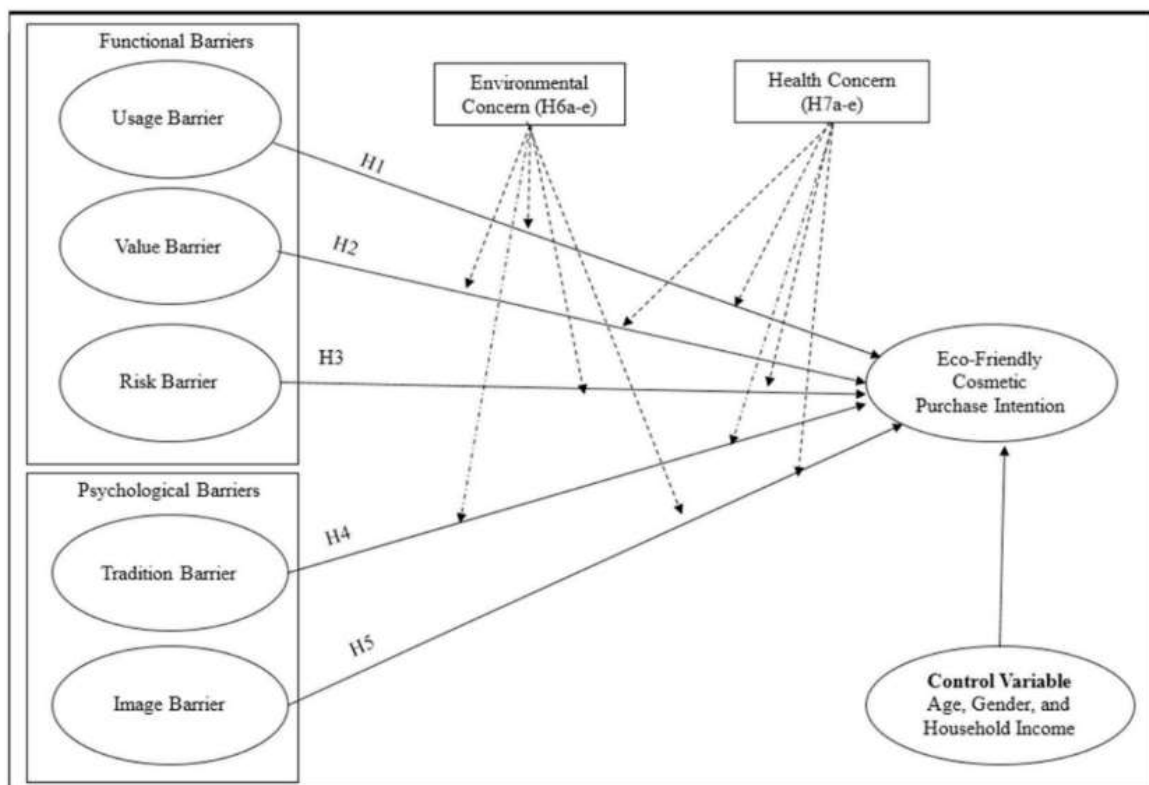


*Figure 5. Research model examining the purchase intention of eco-friendly cosmetics (Sadiq et al., 2021)*

Yeon Kim and Chung (2011) studied how consumer values and previous experience influence the purchase intention of organic personal care products. They applied the theory of planned behavior by Ajzen (1985) and examined how does perceived behavioral control affect the relation between attitude and intention. The research method was an online survey with 207 participants from an online panel in the USA. The survey focus was on organic body lotion and organic shampoo as specific organic personal care products. Data analysis was conducted using the multiple regression method. The research findings suggest that environmental awareness and appearance awareness have a positive effect on organic personal care product buying

intention. The research discovered that previous familiarity with organic products in general has a considerable effect on buying intention of organic personal care products. Hence, if individuals live an organic lifestyle, it is evident in their expenditure choices.

Zollo et al. (2021) examined the drivers of purchasing organic personal care products by applying the social proof theory. They investigated the roles of environmental values, product knowledge, information adoption, convenience, quality, and social reassurance linked to purchase intention of organic personal care products. The study collected data from 473 consumers from Spain and Italy through an online survey distributed in a consumer panel. The results of the study revealed that social reassurance is essential in comprehending what consumers think about organic personal care products and what leads into purchasing them. Consumers search for information and experiences; hence product knowledge and quality are important predecessors of social reassurance. Additionally, the study showed a strong link between environmental values and social reassurance. Consumers believe organic products to be more environmentally friendly than traditional products.

Testa et al. (2023) conducted a systematic literature review of 60 studies related to green cosmetics purchase intention. The purpose was to methodically categorize what determinants influence the purchase intention of green cosmetics. The studies included in the review were from 2007 to 2022 and most of them were from Asia, followed by Europe, Africa, and America. These studies were mostly quantitative consumer studies, and they were categorized based on the stimulus-organism-response (SOR) theoretical framework. The literature review analysis suggested that environmental concern, health awareness and social norms were the main drivers that motivating the purchase intention of green cosmetics. These drivers cause internal states in individuals, which are facilitated by product knowledge, product quality perception and green cosmetics beliefs. On the contrary, perception of high price, greenwashing and suspicions towards green cosmetics acted as in barriers for purchase intention.

## 2.7  The research model

The research model applied in this study is built upon the study conducted by Sadiq et al. (2021), which investigated the eco-friendly cosmetic purchase intention by utilizing the innovation resistance theory by Ram and Sheth (1989). The functional barriers included in this research model are usage barrier, value barrier and risk barrier. The psychological barriers are

tradition barrier and image barrier. In addition, environmental concern and health concern are included as additional constructs. Respondents' age and user experience with shampoo bars are included in the research model as control variables. The research model is presented in Figure 6. Then, the main determinants and hypotheses are presented in more detail.
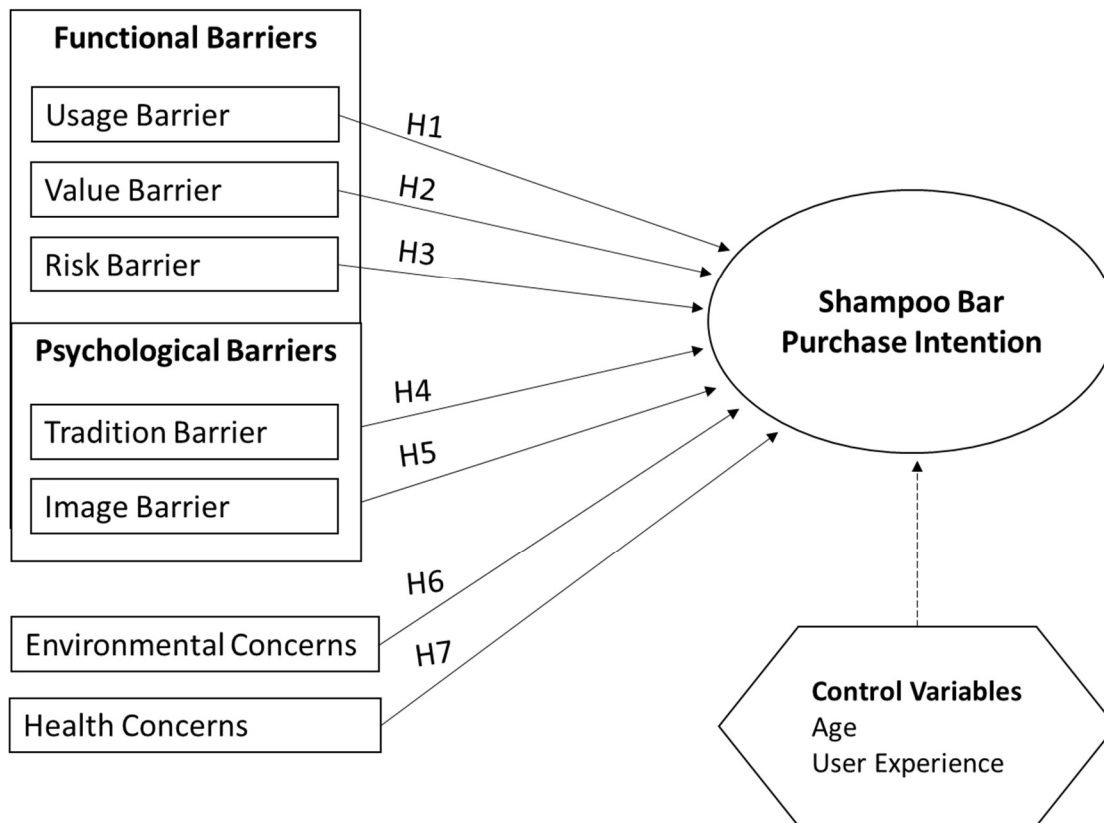


*Figure 6. Research model*

Usage barrier is included in the research model to investigate if the perceived usage difficulties and unavailability of shampoo bars inhibits the shampoo bar purchase intention. Individuals can, for example, regard shampoo bar storing as difficult in the shower or find the availability in stores poor, which inhibits the motivation to buy. In the original theory by Ram and Sheth (1989), the usage barrier was considered as the most significant cause for innovation resistance. Therefore, hypothesis one is formulated in the following manner:

> *H1: Consumers' perceived usage difficulties or unavailability inhibit shampoo bar purchase intention.*

Value barrier is a second functional barrier that is part of the research model. The purpose is to examine if the perceived value of shampoo bars influences the purchase intention. Individuals can, for example, experience that shampoo bars last longer than liquid shampoo, which creates

added value. According to Ram and Sheth (1989), individuals adopt an innovation more likely, if their consider the cost-benefit ratio better than existing substitutes. Additionally, Rogers (2003) described how relative advantage of an innovation can affect the rate of adoption positively. Hence, hypothesis two is formulated as follows:

*H2: Consumers' perceived value motivates shampoo bar purchase intention.*

Risk barrier is the third functional barrier that is part of the research model. Ram and Sheth (1989) divided risk barriers into physical, functional, economic, and social risks. Functional and economic risks are included in this study as part of the research model since they are applicable in the case of shampoo bar as a product. Individuals can, for example, consider a shampoo bar more expensive than liquid shampoo. Furthermore, they may feel that a shampoo bar doesn't wash hair as well as liquid shampoo. These factors could present a barrier to shampoo bar purchase intention. Therefore, hypothesis three is formulated in the following manner:

*H3: Consumers' perceived risk inhibits shampoo bar purchase intention.*

Tradition barrier is the first psychological barrier that is part of the research model. This barrier is valid in the case of shampoo bars as for several decades shampoo has been popular in liquid form, and the switch to a shampoo bar can require a change in attitude and beliefs. Individuals that have always washed their hair with a liquid shampoo can reject the idea of changing their habitual way into a new way of using a solid shampoo bar. Hence, hypothesis four is formulated as follows:

*H4: Consumer tradition inhibits shampoo bar purchase intention.*

Image barrier is a variable in the research model to investigate what effect does individuals' image of shampoo bars have on purchase intention. This psychological barrier can create an adoption barrier if the product image is negative (Ram & Sheth, 1989). Individuals can have a negative perception of shampoo bars due to doubts about its's performance as a hair care product or due to negative peer reviews. Therefore, hypothesis 5 is formulated in the following way:

*H5: Consumers' perceived image inhibits shampoo bar purchase intention.*

Environmental concerns and health concerns are included in the research model as additional constructs to investigate if they motivate shampoo bar purchase intention. Previous studies

have discovered that environmental and health concerns have acted as positive drivers of purchasing eco-friendly cosmetic products (Sadiq et al., 2021; Testa et al., 2023; Yeon Kim & Chung, 2011). Therefore, the following hypotheses are formulated:

> *H6: Consumers' environmental concern motivates shampoo bar purchase intention.*

> *H7: Consumers' health concern motivates shampoo bar purchase intention.*

The final variable of the research model is shampoo bar purchase intention. Purchase intention is included in the research model because behavioral intention is regarded as an essential indicator of behavior based on the theory of reasoned action (TRA). Therefore, the intention to buy a shampoo bar can be considered as a measurement for actual shampoo bar purchase in the future. Purchase intention is determined by individuals' attitudes towards the purchasing behavior as well as associated norms. (Montano & Kasprzyk, 2015, p. 70)

# 3 Method

The main research method involves a quantitative survey with a single data collection and analysis, primarily gathering numerical data through an online questionnaire. (Morris, 2012, pp. 48, 470). Additionally, the questionnaire features two open questions, which collect data in text-form.

## 3.1 Data collection

The online questionnaire structure was designed based on prior research by Sadiq et al. (2021), which utilized the innovation resistance theory by Ram and Sheth (1989). Primary data were collected through a survey constructed in Google forms and distributed across various online forums and social media platforms such as Facebook, Instagram, and WhatsApp. Large Facebook groups with thousands or tens of thousands of members were the main target to ensure a high number of respondents. The target was to reach individuals that are regular users of shampoo bars as well as individuals who are not familiar with or have little experience of using them. Respondents were required to be 18 years old or older and reside in Finland. The survey questions were formulated in Finnish.

Respondents could anonymously answer the survey, which included four demographic questions and two questions on shampoo bar user experience. Shampoo bar user experience questions as well as age were asked in the beginning of the survey. The remaining three demographic questions were presented at the end of the survey. Furthermore, the survey included 29 questions regarding attitudes and beliefs towards shampoo bars presented in next chapter 3.2 in Table 1. These questions were measured with a Likert-type (5-point) scale from 1-Strongly disagree and 5-Strongly agree. Additionally, the survey included two open questions at the end of the survey. The complete survey in Finnish is visible in Appendix 1.

The research employed volunteer sampling, allowing possible participants to decide voluntarily whether they wanted to take part in the survey. Before distribution, the questionnaire underwent pilot testing with a small focus group of six people to assess the question structure, functionality, and respondents' understanding of the questions. After the pilot test, minor wording corrections were made to a few questions, and the survey fill-out instructions were clarified. The survey was published on December 12, 2023, and data collection continued until the end of January 2024. The questionnaire received a total of 443

answers, which was considered enough for the study's purpose. Initially, there were 443 responses, of which 25 were excluded from further analysis due to duplicates, large number of missing fields, identical values, or extreme values. Excluding these responses reinforced the validity and reliability of the data analysis. A total of 418 responses were included in the final analysis. See Table 3. in chapter 4.1 for survey sample characteristics.

## 3.2  Measures

The research model and its measures were adopted from previous research to enhance validity. The quantitative measures are outlined in Table 1. Adoption barrier, environmental concern, health concern and purchase intention measures were modified based on previous research on purchase intention of eco-friendly cosmetics by Sadiq et al. (2021), which utilized the innovation resistance theory by Ram and Sheth (1989).

*Table 1. Measures used in the research (r = reversed scale)*

| Construct | | Measure | Source |
|---|---|---|---|
| Usage Barrier | U1 | I haven't bought shampoo bars because I haven't seen them in a store | Sadig et al. (2021) |
| | U2 | It is easy to store a shampoo bar in the shower (r) | Author |
| | U3 | The availability of shampoo bars in stores is poor | Sadig et al. (2021) |
| | U4 | The variety of shampoo bars is poor | Sadig et al. (2021) |
| Value Barrier | V1 | Shampoo bars are a better option for the health of the hair | Author |
| | V2 | Shampoo bars are free from ingredients that are harmful for the environment or humans | Sadig et al. (2021) |
| | V3 | Shampoo bars contain natural ingredients | Sadig et al. (2021) |
| | V4 | Shampoo bars last longer in use than liquid shampoo | Author |
| Risk Barrier | R1 | Shampoo bar can leave my hair sticky | Author |
| | R2 | Shampoo bar doesn't clean hair as well as liquid shampoo | Author |
| | R3 | Shampoo bars are not as environmentally friendly as claimed | Sadig et al. (2021) |
| | R4 | Shampoo bars are too expensive | Sadig et al. (2021) |
| Tradition Barrier | T1 | Traditional liquid shampoo is enough for me | Sadig et al. (2021) |
| | T2 | Liquid shampoo is the only right product for hair washing | Author |
| | T3 | I've always washed my hair with regular shampoo, and don't want to switch to shampoo bar | Author |
| Image Barrier | G1 | I'm skeptical about the promises of shampoo bars | Sadig et al. (2021) |
| | G2 | I don't believe that a shampoo bar can replace liquid shampoo | Author |
| | G3 | I haven't heard good feedback about shampoo bars | Author |
| Environmental Concern | E1 | I'm interested in the ecological aspects of cosmetic products | Author |
| | E2 | People exploit nature without hesitation | Sadig et al. (2021) |
| | E3 | Maintaining the balance of nature is essential for survival | Sadig et al. (2021) |
| | E4 | Interfering with the balance of nature causes devastating consequences | Sadig et al. (2021) |
| Health Concern | H1 | I often think about matters related to my health | Sadig et al. (2021) |
| | H2 | When choosing shampoo, I consider health risks | Author |
| | H3 | I don't consider health aspects in my consumption choices (r) | Author |
| Shampoo bar Purchase Intention | P1 | I don't believe that I will consider purchasing a shampoo bar (r) | Sadig et al. (2021) |
| | P2 | I definitely plan to buy a shampoo bar in the future | Sadig et al. (2021) |
| | P3 | I intend to recommend a shampoo bar to my friends | Sadig et al. (2021) |
| | P4 | I plan to buy a shampoo bar when my current shampoo runs out | Sadig et al. (2021) |

The Cronbach's alpha values of the constructs are detailed in Table 2. The usage barrier construct had four measures, which initially had a Cronbach's alpha score of $\alpha=0,33$, but after excluding measure U2 the score increased to $\alpha=0,64$, which is a sufficient score. Hence the composite score consists of measures U1, U3 and U4 to increase the reliability. The value barrier construct had four measures and Cronbach's alpha score was $\alpha=0,67$, which is an acceptable score.

The risk barrier construct included four measures and the Cronbach's alpha of the measures was $\alpha=0,56$ at the highest with different measure combinations. Therefore, the risk barrier construct was fully excluded from the regression analysis to increase the reliability of the results. Tradition barrier construct contained three measures and their Cronbach's alpha score was $\alpha=0,83$, which is a satisfactory score. Image barrier construct data was collected with three measures, which had Cronbach's alpha score of $\alpha=0,71$ and this score is considered sufficient.

The environmental concern construct contained four measures and the Cronbach's alpha of these measures was $\alpha=0,76$, which is acceptable score. The health concern construct included three measures, of which measure H3 was recoded due to negative wording. Their total Cronbach's alpha score was $\alpha=0,68$, which is sufficient. The shampoo bar purchase intention consisted of four measures and P1 measure was negatively worded and thus recoded. These measures had a composite score of $\alpha=0,93$, which was the highest score amongst the constructs indicating a high reliability of this construct.

Half of the constructs in the research model had Cronbach´s Alpha score over 0,7 and three constructs had coefficient over 0,6. Risk barrier's coefficient was the lowest (under 0,6), hence the construct was excluded from the regression analysis to enhance the reliability. Residual statistics were also examined to check for issues with linearity, normality, and homoscedasticity. No issues were detected. See Appendix 2 for residual statistics for the dependent variable (purchase intention).

*Table 2. Cronbach´s Alphas of the constructs*

| Construct | Cronbach's Alpha |
| --- | --- |
| Usage barrier | 0,64 |
| Value barrier | 0,67 |
| Risk barrier | 0,56 |
| Tradition barrier | 0,83 |
| Image barrier | 0,71 |
| Environmental concern | 0,76 |
| Health concern | 0,68 |
| Shampoo bar purchase intention | 0,93 |

## 3.3  Analysis strategy

The main research analysis method was multiple linear regression analysis to test the hypothesis. This analysis method determines how a set of independent variables predicts a dependent variable (Pallant, 2016, p. 123). Thus, the multiple linear regression analysis enabled determining relationships between the adoption barriers, health and environmental concerns and shampoo bar purchase intention. Respondent age and user experience with shampoo bars were included in the analysis as control variables. Additionally, a simple thematic analysis method was applied to analyze the gathered qualitative data from two open questions of the survey.

# 4 Results

In this chapter, the findings of the data collection and analysis are presented. Firstly, the characteristics of the data sample are summarized, followed by a summary of means, standard deviations, and Pearson correlations of the constructs. Finally, the results of the multiple linear regression analysis and qualitative analysis are presented.

## 4.1 Sample characteristics

The survey sample that was analyzed included 418 responses, and the sample characteristics are summarized in Table 3. The survey respondents were mainly women (90,9%) and only 6,2% were men. Furthermore, 2,9% of respondents had selected "other" as their gender. The majority of respondents lived in southern Finland (53,1%), while the rest of the sample resided in other regions of Finland. Two respondents did not enter the name of a city. The largest age group among the respondents was 30 to 41-year-olds, comprising 34,9% of the sample. The other age groups each represented around 20%, providing a good representation of different age groups in the survey sample. Education level of the survey sample was mainly bachelor's degree or equivalent (39,7%) as well as high school or vocational school (33,3%).

The survey included background questions to assess respondents' experience and familiarity with shampoo bars. The largest portion of respondents, 37,3%, had tried a shampoo bar once or a few times. Additionally, 32,1% had never used a shampoo bar, and 27% used them regularly. The remaining 15 respondents (3,6%) provided their own responses, primarily writing about their past use of shampoo bars but not current use. Additionally, the respondents were asked if they knew how to use a shampoo bar, with the question rated on a 5-point Likert scale. The mean response was 4,16 with a standard deviation of 1,16, indicating a good overall knowledge of shampoo bar usage within the sample. Notably, 54,1% of respondents selected "Strongly agree" (5).

*Table 3. Survey sample (n=418) characteristics*

| Characteristic | Category | Count (n=418) | Percentage |
|---|---|---|---|
| Age | 18-29 | 95 | 22,7% |
| | 30-41 | 146 | 34,9% |
| | 42-53 | 102 | 24,4% |
| | 54+ | 75 | 17,9% |
| Gender | | | |
| | Female | 380 | 90,9 % |
| | Male | 26 | 6,2 % |
| | Other | 12 | 2,9 % |
| City of residence | | | |
| | Southern Finland | 222 | 53,1% |
| | Southwestern Finland | 38 | 9,1% |
| | Western and Inland Finland | 64 | 15,3% |
| | Eastern Finland | 51 | 12,2% |
| | Northern Finland | 12 | 2,9% |
| | Lapland | 29 | 6,9% |
| | N/A | 2 | 0,5% |
| Education level | | | |
| | Elementary school | 7 | 1,7 % |
| | High school / Vocational school | 139 | 33,3 % |
| | Bachelor's degree or equivalent | 166 | 39,7 % |
| | Master's degree or equivalent | 96 | 23 % |
| | Doctoral degree | 4 | 1 % |
| | Other | 6 | 1,4 % |
| User experience of shampoo bars | Never used before | 134 | 32,1 % |
| | Tried once or a few times | 156 | 37,3 % |
| | Use regularly | 113 | 27,0 % |
| | Other | 15 | 3,6 % |

Overall, the survey sample can be described as representative of different types of shampoo bar user groups. However, the sample is not representative of the Finnish population due to overrepresentation of female respondents and respondents living in southern Finland. On the other hand, females can be considered as the main user group for shampoo bars, which makes the sample relevant for this study. For data analysis, respondents were categorized into two groups based on their age and experience with shampoo bars. This categorization enabled using these variables as binary control variables in the multiple linear regression analysis. Age groups were divided into 18 to 41-year-olds and those aged 42 or older. Regarding user experience, respondents were divided into two groups: those who had never used a shampoo bar and those who had used it once or multiple times.

## 4.2  The statistical analyses

The descriptive statistics of research variables: mean, standard deviation and Pearson correlations are compiled in Table 4. Environmental concern had the highest mean value (4,17), which suggests that respondents were concerned about nature's destruction and interested in the ecological qualities of beauty and personal care products. Health concern had the second highest mean value (3,8), which implies that respondents consider health related topics in general as well as when buying beauty and personal care products.

The Pearson Correlations demonstrate that adoption barriers, environmental and health concerns as well as the control variables of age and user experience, significantly correlated with the dependent variable, shampoo bar purchase intention. Tradition barrier and purchase intention had a high negative correlation (-0,85). Image barrier and purchase intention also demonstrated a high negative correlation (-0,74). Value barrier had a high positive correlation with purchase intention (0,54).

*Table 4. Descriptive statistics and correlations of variables*

| Variable | Mean | Std Dev | Pearson Correlation | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Purchase intention | 3,41 | 1,21 | 1 | | | | | | |
| Usage barrier | 3,06 | 0,94 | -.16** | 1 | | | | | |
| Value barrier | 3,46 | 0,66 | .54** | -.13* | 1 | | | | |
| Tradition barrier | 2,44 | 1,05 | -.85** | .20** | -.49** | 1 | | | |
| Image barrier | 2,38 | 0,93 | -.74** | .28** | -.47** | .74** | 1 | | |
| Environmental concern | 4,17 | 0,72 | .36** | -.08 | .22** | -.38** | -.31** | 1 | |
| Health concern | 3,80 | 0,78 | .30** | -.23** | .19** | -.31** | -.30** | .57** | 1 |
| Age | | | .17** | .08 | .14* | -.17** | -.10* | .11* | .09* |
| User experience | | | .38** | -.45** | .24** | -.43** | -.39** | .20** | .21** |
| **Significance level (1-tailed) = <.001 *Significance level (1-tailed) = <.05 | | | | | | | | | |

Table 5. displays the results of the multiple linear regression analysis. Overall, the independent variables explained 75,8% ($R^2$ a = 0,758) of the variation in the dependent variable of shampoo bar purchase intention. This indicates a good fit of the regression model. Moreover, the table presents the Beta coefficients and significance levels of variables and control variables in predicting shampoo bar purchase intention. Usage barrier had a small positive predictive value ($\beta$ = 0,059), but it was significant (p <.05). Value had a positive contribution ($\beta$ = 0,127) and it was significant (p <.001). Tradition barrier had the strongest negative contribution to shampoo bar purchase intention (ß= -0,591 and $p$<.001). Image barrier had the second strongest negative contribution to purchase intention (ß=-0,248 and $p$<.001). Environmental concern and health concern did not predict purchase intention, and they were statistically insignificant. The control variables of age and user experience showed no predictive link to purchase intention and were also statistically insignificant. The results of the multiple regression analysis are also visualized in Figure 7.

*Table 5. Dependent variables' beta-values and significance for shampoo bar purchase intention*

| Variable | $\beta$ | $p$ |
|---|---|---|
| Usage barrier | 0,059 | .041 |
| Value barrier | 0,127 | <.001 |
| Tradition barrier | -0,591 | <.001 |
| Image barrier | -0,248 | <.001 |
| Environmental concerns | 0,015 | .621 |
| Health concerns | 0,015 | .625 |
| Age | 0,020 | .423 |
| User experience | 0,018 | .543 |
| $R^2$ = 0,763 $R^2_a$ = 0,758 | | |
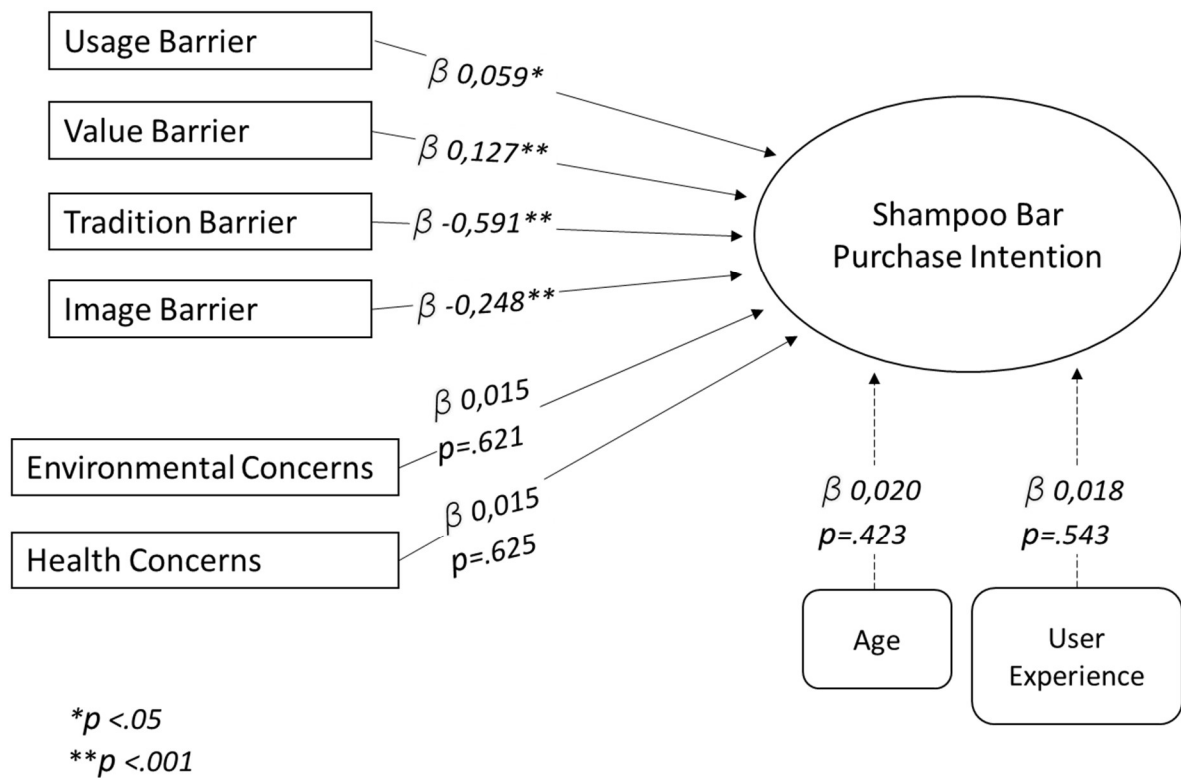
*Figure 7. Results of the multiple linear regression analysis*

## 4.3 The qualitative analyses

The survey included two open-ended questions in the final part of the survey (see Appendix 1.), where respondents could share their opinion and experiences of shampoo bars and freely include any additional comments. In total 170 respondents answered one or both open-ended questions. These answers were analyzed utilizing a simple thematic analysis method. The responses uncovered recurring themes and patterns related to shampoo bar experiences and opinions. The most common topics categorized by their main theme and subthemes, are presented in Table 6. highlighting factors that can inhibit or motivate shampoo bar adoption.

*Table 6. Summary of thematic analysis*

| Main theme | Subthemes | N (170) | Percentage |
|---|---|---|---|
| Motivates shampoo bar adoption | Eco-friendly qualities | 18 | 10,6% |
| | Shampoo-based ingredients perform best | 10 | 5,9% |
| | Easy to carry when traveling | 10 | 5,9% |
| | Keeps hair/scalp in good condition | 8 | 4,7% |
| | Long lasting in use | 7 | 4,1% |
| Inhibits shampoo bar adoption | Difficulties in storing the shampoo bar | 25 | 14,7% |
| | Left my hair feeling sticky | 24 | 14,1% |
| | Not available/bad selection in grocery stores | 14 | 8,2% |
| | Quality differences between brands | 11 | 6,5% |

The positive aspects and qualities of shampoo bars that were highlighted in the responses were related to shampoo bar qualities, benefits, and performance. Respondents mentioned how their hair or scalp was in better condition after switching to a shampoo bar (n=8). Additionally, the convenience of carrying shampoo bars while traveling was emphasized (n=10). Respondents also highlighted that shampoo bars lasted a long time in use (n=7). Furthermore, it was mentioned that shampoo bars formulated with shampoo-based ingredients rather than soap-based ones performed better (n=10). Most common (n=18) positive quality of shampoo bars that respondents pointed out was their ecological benefits. Shampoo bars were considered to contain less harmful chemicals, less allergens, and take less space during shipments. Among the ecological benefits, the most frequently mentioned was the reduction of plastic packaging.

*"Shampoo bar that is eco-friendly does not contain, for example, microplastics, which synthetic shampoos may contain. Additionally, the shampoo bar is not packaged in plastic packaging like liquid shampoos, making it a more environmentally friendly option compared to liquid.—"* (Anonymous, 2024)

The negative experiences of shampoo bars that were mentioned repeatedly were related to the performance, quality, usage, and availability of shampoo bars. Several respondents (n=25) felt that shampoo bars are difficult to store in the shower, and few described that this was the main reason why they are not using the product.

*"It's difficult to store in the shower, so I stopped using it. It's easier to pour from a bottle onto the hands and it keeps better."* (Anonymous, 2024)

*"I wish there was a simple and mess-free solution for storing shampoo bars. Currently, the sliminess of the soap is preventing me from fully transitioning to shampoo bars. However, I'm still very interested in the idea, as I've heard mostly good things about it."* (Anonymous, 2024)

Moreover, many respondents (n=24) felt that their hair was left sticky after washing with a shampoo bar, and few also mentioned that they had tried several different shampoo bars and continuously faced the same issue. Few mentioned that the sticky feeling seemed to occur specifically with soap-based shampoo bars.

*"I've tried a few different shampoo bars from various natural cosmetics manufacturers but found that they leave my hair very sticky and feeling dirty.— I would gladly use a shampoo bar if I could find one that works, but I haven't bothered to test and buy more because my experience with the products has been poor so far."* (Anonymous, 2024)

*"My hair feels sticky after using a soap-based shampoo bar, so I mostly use shampoo-based bars instead."* (Anonymous, 2024)

Another recurring theme among the responses was the variation in quality and performance among different shampoo bar brands. Some respondents noted that certain brands' shampoo bars tended to last significantly longer periods in use. Additionally, several respondents (n=14) expressed concerns about the availability of shampoo bars. They either hadn't encountered the product in grocery stores, or were dissatisfied with the limited selection of shampoo bars available in stores.

*"I didn't end up buying because there were no shampoo bars available at the local store.—"* (Anonymous, 2024)

*"I've found them to be good, but I don't always find shampoo bars at grocery stores, so I end up buying bottled shampoo."* (Anonymous, 2024)

The thematic analysis of survey responses revealed recurring themes concerning shampoo bar experiences and opinions that could explain shampoo bar adoption. The most common inhibitors of shampoo bar adoption were related to the difficulty of storing the product in the shower and the sticky feeling left in the hair after washing. Additionally, the availability of shampoo bars was considered poor especially in grocery stores. Conversely, the most common factor motivating shampoo bar adoption was the associated ecological benefits. Additionally, many respondents noted that shampoo bars formulated with shampoo-based ingredients, rather than soap-based ones, provided the best washing performance. Lastly, another relevant motivating factor was the convenience of shampoo bars when traveling.

# 5 Discussion and conclusions

The purpose of the study was to discover what barriers prevent consumers from adopting shampoo bars. The research model was modified based on prior research by Sadiq et al. (2021), which used the innovation resistance theory (Ram & Sheth, 1989) as a theoretical framework. The modification included changing environmental and health concern from moderators into independent variables. Furthermore, Sadiq et al. (2021) had included age, gender, and household income as control variables in their original research model, but for the purpose of this research, they were changed to age and user experience. The survey sample was analyzed using multiple linear regression analysis to test the hypotheses. Moreover, the survey incorporated two open-ended questions and responses to these questions were analyzed using a simple thematic analysis method. The results of multiple linear regression analysis are discussed first, after which the results of thematic analysis are discussed.

The research model included seven hypotheses that are summarized in Table 7. Age of respondents and user experience with shampoo bars were used as control variables in the multiple linear regression analysis. However, neither control variables indicated statistical significance with shampoo bar purchase intention, as presented previously in Figure 7. The risk barrier construct was excluded from the final regression model, and therefore hypothesis 3 (H3) was not tested. The remaining six hypotheses included three hypotheses (tradition, image, and value barriers) that were supported by the data analysis results and three hypotheses (usage barrier, environmental concern, and health concern) that were not supported (see Table 7.). However, hypothesis 1 (H1) regarding usage barriers was unexpectedly supported, as it showed a positive contribution to shampoo bar purchase intention instead of the anticipated negative effect.

Out of the six hypotheses, the adoption barriers (H1, H2, H4, and H5) were statistically significant. Two hypotheses (H6 and H7) resulted in statistically insignificant results, indicating that environmental and health concern did not have a significant impact on explaining the variance in purchase intention. Consequently, hypotheses H6 and H7 were not supported, suggesting that health and environmental concern did not serve as motivating factor for shampoo bar purchase intention. However, environmental and health concern responses had relatively high mean values, which suggests that respondents were concerned about

environment and health related issues in general and in relation to beauty and personal care products.

*Table 7. Hypotheses results*

| Hypothesis | $\beta$ | Sig. | Support |
|---|---|---|---|
| H1 Consumers' perceived usage difficulties or unavailability inhibit shampoo bar purchase intention | 0,059 | <.05 | No *reversed |
| H2 Consumers' perceived value motivates shampoo bar purchase intention | 0,127 | <.001 | Yes |
| H3 Consumers' perceived risk inhibits shampoo bar purchase intention | N/A | N/A | N/A |
| H4 Consumer tradition inhibits shampoo bar purchase intention | -0,591 | <.001 | Yes |
| H5 Consumers' perceived image inhibits shampoo bar purchase intention. | -0,248 | <.001 | Yes |
| H6 Consumers' environmental concern motivates shampoo bar purchase intention | 0,015 | .621 | No |
| H7 Consumers' health concern motivates shampoo bar purchase intention | 0,015 | .625 | No |

According to the results of the multiple linear regression analysis, the research model of this study explained 75,8% of the variation in shampoo bar purchase intention, with tradition barrier evidently having the strongest contribution to purchase intention compared to other variables. Tradition barrier had a significant negative contribution of -0,59 with purchase intention, which indicates that a higher tradition barrier corresponds to a lower intention to buy a shampoo bar. This result suggests that adopting shampoo bars is inhibited by their skeptical attitudes and beliefs regarding shampoo bars and prefer their habitual way of hair washing. These consumers are used to washing their hair with a liquid shampoo are reluctant to switch to a solid shampoo bar. Image barrier had the second strongest contribution to shampoo bar purchase intention with significant negative contribution of -0,25. Thus, the higher the image barrier is, the lower the purchase intention. This result implies that adopting shampoo bars is inhibited by negative product image. Respondents, who had a negative idea about shampoo bars performance or had heard negative feedback about them were less likely to purchase a shampoo bar.

The usage barrier had a slight positive contribution of 0,06 to shampoo bar purchase intention, suggesting that it not only failed to inhibit adoption but in contrast motivated purchase intention. Thus, the original hypothesis H1 was not supported, and shampoo bar availability

and variety were not inhibiting shampoo bar adoption. Since usage barrier measure U2 was excluded from the multiple linear regression analysis, the results do not include usability difficulty of shampoo bars, but rather concern the unavailability of shampoo bars in stores and the limited product range. Value barrier had a moderate positive correlation of 0,13 with purchase intention. This result supports the original hypothesis H2 since the perceived value of shampoo bar motivated shampoo bar purchase intention. The results suggest that consumers' who recognize shampoo bars' ecological and health related benefits are more likely to buy them. Furthermore, the extended durability of shampoo bars appears to create added value and motivate purchase intent.

The survey included two open-ended questions and the responses were analyzed with simple thematic analysis method. Results of the analysis include reoccurring experiences and opinions that could inhibit or motivate shampoo bar adoption. Potential adoption barriers that were mentioned most frequently included challenges in storing a shampoo bar in the shower, lingering sticky sensation in the hair post-wash and limited availability in grocery stores. The main driver for adopting shampoo bars was their ecological advantages. Additionally, some respondents found shampoo bars with shampoo-based ingredients to offer superior washing performance. Another common motivator was the convenience of shampoo bars for travel purposes. Thus, respondents mainly focused on the convenience and performance of shampoo bar usage as well as it's ecological benefits. When comparing the results of multiple linear regression and thematic analysis it is evident that responses to open-ended questions highlighted the functional barriers as main inhibitors of shampoo bar purchase intention, whereas regression analysis highlighted the psychological barriers.

Prior research similarly highlights psychological barriers such as suspicions towards green cosmetics that inhibits their purchase intention (Testa et al., 2023). In line with the findings of this research concerning the contribution of image barrier, a study by Zollo et al. (2021) found that social reassurance was an essential inhibitor of organic personal care purchase intention. The study by Sadiq et al. (2021) equally discovered tradition barrier as the strongest inhibitor of eco-friendly cosmetic purchase intention. Furthermore, their study equally found image barrier as the second strongest inhibitor. Prior research conducted by Statista (2023) similarly identified habit, lower performance of natural cosmetics, and their unavailability as significant barriers to purchasing such products. However, Statista's study (2023) found that the main obstacle to purchasing natural cosmetics was their high price, which differs from the findings

of this survey. In comparison to relevant theories, the results of this study are not fully aligned. According to Ram and Sheth (1989), usage barrier is the most significant cause for innovation resistance, a claim supported by the results of the small thematic analysis, although the multiple linear regression analysis produced a reversed result.

## 5.1  Practical implications

The results of this study suggest that tradition and image barriers are the main inhibitors for shampoo bar adoption, which should be considered in marketing communication strategies. The challenge is to motivate consumers to make a shift from their current habitual routines of only using liquid shampoo. Usability and performance issues of shampoo bars were raised in the survey responses. Hence effective tactics should be developed to reduce consumers' skepticism and negative image towards shampoo bars by promoting their health and ecological benefits as well as convenience and reducing the uncertainty related to their usability. Providing positive experiences for early adopters of shampoo bars could help shift consumer attitudes and habits by utilizing opinion leadership and peer reviews in marketing communication (Rogers, 2003). Additionally, improving the accessibility and triability of shampoo bars, along with providing guidance on proper usage and storage, may help to reduce consumer uncertainties surrounding shampoo bars.

## 5.2  Limitations

The following limitations of this study should be considered when utilizing the results. This research only concerns shampoo bars, which means that the results do not offer large generalizability to other eco-friendly product categories. The survey sample is limited geographically as it mainly represents southern Finland. Furthermore, there is an overrepresentation of female respondents, hence results of the study cannot be generalized to all genders.

Concerning the limitations of the research model, the survey included risk barrier questions and additional usage barrier question, but it was necessary to exclude them from the final regression analysis due to the relatively low reliability scores. Hence, there is a gap in the results concerning the excluded measures. The results of both the multiple linear regression analysis and thematic analysis show some inconsistencies; thus, the formatting of the survey questions could be enhanced. According to Saunders et al. (2019) a questionnaire as a data

collection method presents risks of both participant error and researcher bias. Firstly, the survey respondents have subjective interpretations of the survey questions. Secondly, miscomprehensions of questions are possible amongst the respondents. Finally, the researcher may also misinterpret the respondents' open answers.

## 5.3  Future research

Future studies are necessary concerning the adoption of eco-friendly beauty and personal care products as well as zero waste products that have the potential to reduce single-use plastic. The research within the product category of shampoo bars, should be conducted with a wider gender and geographical distribution as well as a larger survey sample. Additionally, there could be more in-depth research concerning the different consumer user groups of shampoo bars. Future studies should also construct risk barrier measures differently to receive better internal reliability of the statements. Since this study did not reveal significant prediction for environmental and health concern, future studies could include a moderation analysis of these two factors (see Sadiq et al. (2021)). In conclusion, further research on the subject is necessary due to the existing gap in research, changing consumer preferences, and the escalating global environmental crisis.

## 5.4  Final conclusions

The process of innovation adoption can be lengthy especially when the innovation requires a shift from earlier routines (Ram & Sheth, 1989). In the case of shampoo bars, the shift from using liquid shampoo to solid shampoo seems to be challenging despite consumers' interest towards clean personal care products and shampoo bar's ecological and health related benefits. This study identified psychological barriers as the main inhibitors of shampoo bar adoption with tradition barrier showing the strongest negative contribution to purchase intention, followed by image barrier. Thus, consumers who are reluctant to change their habit of using liquid shampoo and have negative image about shampoo bars are less likely to purchase them. Moreover, the study identified functional barriers, such as issues with usability, performance, and availability, which could hinder the adoption of shampoo bars. The study results highlight the need for tailored marketing strategies to encourage consumers to switch from liquid shampoo to solid shampoo bars.

# References

Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In J. Kuhl & J. Beckmann (Eds.), From Cognition to Behavior (pp. 11-39). Springer.

Duerr, L. (2021, June 2). Best zero-waste shampoo bars. BestReviews. https://www.proquest.com/magazines/best-zero-waste-shampoo-bars/docview/2536103616/se-2

Ecocert. (2024). Natural and Organic Cosmetics - Cosmos. Retrieved from https://www.ecocert.com/en/certification-detail/natural-and-organic-cosmetics-cosmos

Ecolabel index. (2024). Ecolabels. Retrieved from https://www.ecolabelindex.com/ecolabels/

Ethique. (2023). Everything You Need to Know About Solid Shampoo Bars. Retrieved from https://ethique.com/blogs/ethique-products/everything-you-need-to-know-about-solid-shampoo-bars

Forget Me Not Finland. (2021). Kuinka Käyttää Shampoopalaa [How to Use Shampoo Bars]. Retrieved from https://www.forgetmenot-finland.com/post/kuinka-k%C3%A4ytt%C3%A4%C3%A4-shampoopalaa

Langeek Inc. (2020). Shampoo. In Langeek Dictionary. Retrieved from https://dictionary.langeek.co/en/word/216795

Lush Ltd. (2024). Setting the Bar: Lush Has Been Making This Cult Product for Over 30 Years. Retrieved from https://weare.lush.com/press-releases/setting-the-bar-lush-has-been-making-this-cult-product-for-over-30-years/

Montano, D., & Kasprzyk, D. (2015). *Theory of reasoned action, theory of planned behavior, and the integrated behavioral model* (4th ed.). Jossey-Bass.

Morris, C. (2012). *Quantitative approaches in business studies* (8th ed.). Pearson Education.

Ogle, A. (2018, August 14). These toiletries are helping you reduce plastic waste—can they help save the planet? National Geographic. Retrieved from https://www.nationalgeographic.com/travel/article/shampoo-bar-sustainable-toiletries-plastic-free

Organic.org. (2016). What is organic? Retrieved from http://www.organic.org/education/faqs

Picodi. (2024). Las preferencias de los colombianos respecto a los cosméticos. [The preferences of Colombians regarding cosmetics]. Retrieved from https://www.picodi.com/co/ahorro-magazine/las-preferencias-de-los-colombianos-respecto-a-los-cosmeticos

Pallant, J. (2016). *SPSS survival manual: A step by step guide to data analysis using IBM SPSS* (6th ed.). Open University Press, McGraw-Hill Education.

Ram, S., & Sheth, J. N. (1989). Consumer Resistance to Innovations: The Marketing Problem and its solutions. *Journal of Consumer Marketing*, 6(2), 5-14. https://doi.org/10.1108/EUM0000000002542

Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). Free Press.

Saunders, M. N. K., Thornhill, A., & Lewis, P. (2019). *Research methods for business students* (8th ed.). Pearson.

Statista. (2021). Beauty & Personal Care Market: Statista Beauty & Personal Care Report 2021. Retrieved from https://www.statista.com/

Statista. (2023). Natural and Organic Cosmetics Market Worldwide. Retrieved from https://www.statista.com/

Sadiq, M., Adil, M., & Paul, J. (2021). An innovation resistance theory perspective on purchase of eco-friendly cosmetics. *Journal of Retailing and Consumer Services*, 59, 1-12. https://doi.org/10.1016/j.jretconser.2020.102369

Testa, R., Rizzo, G., Giorgio, S., Tóth, J., & Migliore, G. (2023). Critical determinants influencing consumers' decision-making process to buy green cosmetics. A systematic literature review. *Journal of Global Fashion Marketing*, 1-25. https://doi.org/10.1080/20932685.2023.2268669

Transparency Market Research Inc. (2024). Shampoo Bar Market - Global Industry Analysis, Size, Share, Growth, Trends, and Forecast, 2024. Retrieved from https://www.transparencymarketresearch.com/shampoo-bar-market.html

Voller, L. M., & Warshaw, E. M. (2021). Killing Two Birds With One Bar: Shampoo and Conditioner Bars Are Low Allergen and Environmentally Friendly. *Dermatitis*, 32(4), 60-64. https://doi.org/10.1097/DER.000000000000062

Yeon Kim, H., & Chung, J. (2011). Consumer purchase intention for organic personal care products. *Journal of Consumer Marketing*, 28(1), 40-47. https://doi.org/10.1108/07363761111101930

Zollo, L., Carranza, R., Faraoni, M., Díaz, E., & Martín-Consuegra, D. (2021). What influences consumers' intention to purchase organic personal care products? The role of social reassurance. *Journal of Retailing and Consumer Services*, 60. 1-11. https://doi.org/10.1016/j.jretconser.2020.102432

# Appendix 1 Questionnaire

**Shampoopalat hygieniatuotteena**

Alkuun kerron mikä on shampoopala:

Shampoopala on kiinteässä muodossa oleva hiustenpesutuote, joka on vaihtoehto nestemäiselle shampoolle. Shampoopalojen koostumus muistuttaa nestemäistä shampoota, josta on poistettu vesi. Ohessa kuva shampoopalasta.



**1.Ikäsi: *** (Huom! kysely on tarkoitettu yli 18-vuotiaiIIe)
18-23
24-29
30-35
36-41
42-47
48-53
54-59
60 tai yli

**2. Oletko käyttänyt shampoopalaa?**
En ole koskaan käyttänyt
Olen kokeillut kerran
Olen käyttänyt muutaman kerran
Käytän säännöllisesti
Muu:_____

**Vastaa seuraaviin väittämiin käyttökokemuksesi tai mielikuvasi perusteella**
1 = Täysin eri mieltä
2 = Jokseenkin eri mieltä
3 = Ei samaa eikä eri mieltä
4 = Jokseenkin samaa mieltä
5 = Täysin samaa mieltä

**3. Tiedän, miten shampoopalaa käytetään**

**4. En ole ostanut shampoopaloja, koska en ole nähnyt niitä kaupassa**

5. Olen aina pessyt hiukseni nestemäisellä shampoolla, enkä halua vaihtaa shampoopalaan

6. Shampoopalaa on helppo säilyttää suihkussa

7. En usko, että harkitsen shampoopalan ostamista

8. Shampoopala voi jättää hiukseni tahmeiksi

9. Perinteinen nestemäinen shampoo riittää minulle

10. Shampoopalat ovat parempi vaihtoehto hiusten kunnolle

11. Shampoopalojen saatavuus myymälöissä on huono

12. Minua kiinnostaa kosmetiikkatuotteiden ekologisuus

14. Shampoopaloissa ei ole iholle ja ympäristölle haitallisia aineita

15. Nestemäinen shampoo on ainoa oikea tuote hiustenpesuun

16. Shampoopalat sisältävät luonnollisia raaka-aineita

18. Shampoopala ei pese hiuksia yhtä hyvin kuin nestemäinen shampoo

19. Shampoopalat kestävät käytössä pidemmän aikaa kuin nestemäinen shampoo

20. Minua epäilyttää shampoopalan tuotelupaukset

22. Shampoopalat eivät ole niin ympäristöystävällisiä kuin väitetään

23. En ajattele terveysnäkökohtia kulutusvalinnoissani

24. Shampoopalat ovat Iiian kalliita

26. Aion suositella shampoopalaa ystävilleni

27. Ihmiset käyttävät luontoa häikäilemättä hyväkseen

28. Luonnon tasapainon säilyttäminen on henkiinjäämisen ehto

29. Ajattelen usein terveyteeni liittyviä asioita

30. Shampoon valinnassa ajattelen terveyshaittoja

31. Luonnon tasapainoon puuttuminen aiheuttaa tuhoisia seurauksia

32. Aion ostaa shampoopalan, kun edellinen shampooni loppuu

**33. Onko sinulla muita huomioita tai kokemuksia liittyen shampoopalaan? Kerro vapaasti.**

_____

**34. Haluatko lisätä vielä jotakin?**

_____

**35. Missä kaupungissa asut tällä hetkellä? \* (Huom! Kysely on tarkoitettu Suomessa asuville henkilöille)**

_____

**36. Sukupuoli:**
Nainen
Mies
Muu
En halua sanoa


**37. Korkein koulutuksesi:**

Peruskoulu
Toisen asteen koulutus (lukio/ammattikoulu)
Alempi korkeakoulututkinto (yliopisto/ammattikorkeakoulu) Ylempi korkeakoulututkinto
Tohtorintutkinto
Muu:

# Appendix 2 Residual statistics



Scatterplot
Dependent Variable: SUM_Purchase



Normal P-P Plot of Regression Standardized Residual
Dependent Variable: SUM_Purchase