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**DETERMINATION OF FABRIC
QUALITY OF A LOUNGEWEAR
PRODUCT ON THE EXAMPLE OF
KRISS SOONIK LOUNGERIE**
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INTRODUCTION

When a luxury brand decides to change fabric on a well-selling product than it must assure that the quality remains on similar level to guarantee to meet customers' expectations.

This thesis aims to rationalise the choice of fabrics for a specific loungewear product of Kriss Soonik Loungerie (KSL): the Kristiina Suspender Top [Appendix 8]. The product first launched in the autumn/winter collection of 2014 and with some modifications remained in production till date. One of the reasons to choose this product for examination, is that the fabric of it might be changed.

The fabric being used in the current production [Appendix 7. Fabric 1] is more expensive than the alternative materials [Appendix 7. Fabric 2, Fabric 3]. The research tries to find an answer to the question whether it would be rational to start using a new fabric for the products. While cost is obviously an important factor in the decision making, it is not the emphasis of this thesis. As this thesis is focused on the quality and properties of the fabrics. The aim is to maintain the level of high quality but decrease the cost. Here the comparison is made in between three fabrics: two of them are already used in the collections [Appendix 7. Fabric 1, Fabric 3], one of them is a potential new fabric [Appendix 7. Fabric 2] to be used.

The research is based on a review of the textile literature and empirical studies. The aim of the product determines the method of the product analysis [1]:

- 1) visual,
- 2) extended visual (simple tests, washing),
- 3) laboratory analysis.

In this thesis the empirical studies are based on both extended visual and laboratory analysis. In order to understand the customers needs and expectations of products, customers were enquired through interviews. In addition, a second customer survey was performed in which the customers evaluated the three fabrics under study. On the same three fabrics the laboratory tests are conducted.

This thesis is structured as following: first, the term quality is defined by reviewing the different perspectives on quality and the aspects of quality are clarified. Next, the meaning of loungewear is defined. This definition is extended by the outcomes of the customer inquiry which has particular focus on the functions and the requirements of loungewear. A question is raised: to what extent does the fabric play a role in the quality of loungewear? In the next stage customers are enquired more specifically about their expectations of fabrics being used in loungewear. The subjective needs of the customers are then translated into specifications of the expectations.

The second chapter concentrates on the most important properties of fabrics of loungewear that were pointed out in the customer inquiry. Since there is a difference between objective and subjective testing and evaluation of fabrics, which are also used in this thesis, the meaning of both of them is explained. This chapter discusses the composition and weight of the three fabrics and properties of the knitted fabrics. The measuring of elongation, elasticity, pilling resistance and hand of fabric are explained as well.

The third chapter initiates with a description of the composition, weight and based on the information obtained from the fabric producers. Tests are conducted to define the properties of all three fabrics. The tests measure elongation and elasticity and pilling resistance. Having explored the mechanical and objective properties, the next step is to explore the subjective properties of the fabric. This is done by conducting a subjective hand of fabric evaluation with the participants of the customer inquiry. The interviewees are asked to describe comfort and aesthetic aspects, hand, stretch, weight, thickness and breathability of the fabrics.

The data collected from these different sources together form the groundwork for creating specifications for the three fabrics. The specifications of expectations of fabrics used for a loungewear product are compared with the specifications of each of the three fabrics. The aim is to describe and analyse the three fabrics under study for Kristiina Suspender Top on which KSL can base their decision for the choice of fabric for future use.

The goal of the thesis is to rationalise the choice between the three fabrics from the benefit of KSL while taking into account the perspective of the customer. This is done by comparing the expectations of the customers with the specifications of the fabrics. There is a great emphasis on the subjective inquiry and evaluation of customers of KSL. However, this is supported with more objective laboratory tests and theoretical analysis.

1. QUALITY OF A LOUNGEWEAR PRODUCT

1.1. Background of Kriss Soonik Loungerie

Quality is brand dependent. In most luxury brands quality plays an important role, however the expectations of quality differs by customers. For example, some people might buy a product for the superb lifetime quality while other customers buy it for the imago. Therefore it is important to understand better what the brand stands for to determine what quality means in the light of the brand. This chapter initiates with the background description of the company.

Kriss Soonik Loungerie (KSL) is a London based luxury lingerie and loungewear brand that expresses sexiness, quirkiness and comfort. Designer and founder of the company is Kriss Soonik Käärman who launched the first collection in 2009. KSL combines fashion forward lingerie with luxurious loungewear. [8] The products portray the Estonian roots of the designer and Scandinavian minimalist sensibility [12]. KSL is sold online and in the boutiques and department stores in 15 countries.

KSL launches new collections twice a year: spring/summer and autumn/winter. In addition there is a Classics collection that contains the best-selling items. Most used materials are lace and fishnet from France and jersey from Italy and Turkey. The production is outsourced in Estonia [8].

The main competitors are designer brands such as Lascivious, Olivia van Halle, Morgan Lane, Made by Niki. Besides the above mentioned, there are also big luxury brands like Stella McCartney, La Perla, Agent Provocateur and others that reach a large market, produce in large amounts and in great variety. And the fast fashion brands like H&M that have expanded their product variety to lingerie and loungewear to keep the customers loyal and increase the profit.

For a customer oriented brand like KSL it is crucial to know who buys the products. The customer of KSL is thinking fashion forward and is looking for a quality product with a quirky twist. Soonik Käärman states that the product needs to be impeccably made and fit perfectly to the customer. The comfort of the product when wearing it is essential – it has to feel good. [Appendix 2.1.]

The brand is well known in the lingerie and loungewear branch: KSL has been featured in many fashion magazines, such as Vogue, Elle, Nylon, Bazaar. In 2013/14 it received a British Cool Brands awards. In 2014 Kriss Soonik Käärman got the Estonian Fashion Designer of the Year award – Golden Needle.

1.2. Quality of a Textile Product

The textile industry is an extremely competitive industry [4]. In order to stand out there must be something special about the product. Being successful in this industry one should have a loyal customer base and attract new customers. As quality is the standard in the luxury market “companies must assure that the quality of the product is maintained to survive in this highly competitive climate” [4].

While this seems self-evident, quality is not a clearly defined term. Therefore, before it is possible to go deeper into the quality of a textile product, it is necessary to define what is understood by the term quality.

There are many different ways to define quality [4; 5]. Each one of them concentrates on a certain perspective [4]. In the context of this thesis, the definitions that are discussed emphasise the product, the producer and the customer.

Kunz and Glock define quality as the “essential nature of something, an inherent or distinguishing characteristic or property, superiority, excellence or perceived level of value” [1]. Quality then, is an intrinsic value which is embodied in any object, including products. Therefore quality can be understood as characteristic, as something that an item can be recognised by, or as a value or excellence of that item. Kadolph suggests that “product quality is presented by the total of a set of precise and measurable characteristics or components of a finished product” [4]. The more specific characteristics are perceived as quality features, from which the desired ones by the customers should be embodied into a product [1].

According to Hu, it is essential for the manufacturers to have a definition of quality in order to produce product that conforms to that quality. A definition allows then to measure how products meet the requirements. An important distinction he makes is between perceived and functional quality. Perceived quality supports the corporate image, build interest and leads to the purchase. The product needs to look good, feel good and offer a good value for money – these are the parameters on the basis a purchase is done. Functional quality, on the other hand, is related to the supplier which involves make, size and performance. [5]

Kadolph states that quality can be seen from different perspectives. First, from the producers point of view products needs to meet the standards and specifications that the company has set. There must be consistency in the performance: every single product must always live up to the stated expectations of the products. While this perspective is useful in respect of consistency of standardised product, it does not take into account the expectations of the customers. [4]

This issue is addressed by Ulrich and Eppinger who state that it does not make sense to produce a product just to satisfy the production team [2]: it is essential to consider the needs and expectations of the customer. Dhillon agrees and he defines quality instead through the customer. According to him, quality is the “degree to which an item, function or process satisfies the needs of users and customers” [11]. Therefore, the quality of a product has to include the customer's perspective. For Kadolph, the second perspective is more concentrated on the demands and expectations of quality that reflect the importance to the user. Unlike the producers perspective that has a strong emphasis on consistency, consumer needs are subjective and can change fast. [4] Therefore, a company directs its actions “toward producing a quality product for the target market, satisfying the target market and meeting the business objectives” [4].

A method that includes the customer is Total Quality Management (TQM) which is an approach that emphasises the importance of the customer. Elements of Total Quality Management are the commitment and leadership of the management that is accompanied by team work. Every decision and process in the company needs to be directed towards the customer service to satisfy the needs of the customers. Therefore continuous trainings need to take place, the cost of quality needs to be measured and analysed. What sets TQM apart from other approaches is the participation of the supplier. The supplier is included to the all of the stages in the process to improve the work flow. [4; 11]

Total Quality Management incorporates all levels and stages of the company. Every action is directed towards satisfying the demands of the customer. The aim is to bring a high quality level consumer good to the market. [1] TQM incorporates the relations with fabric suppliers (comparison of the suppliers), production processes (cost, time, development, management), customer service (expectations of a specific product, feedback) and structure of the company (teamwork, management).

Producers must make sure that the product quality is based on three key perspectives. Firstly, there are standards and specifications needed to identify the products. These give a detailed description of the appearance, characteristics and performance of the end product. Secondly, products should not vary, there must be consistency in the products. Thirdly, the end product needs to meet the customers needs. [4]

Customers expect to get an excellent produced, fashionable and unique product, that fits and functions well, good materials with good hand and it needs to perform well in reasonable price [4]. If the company wants to stay in competition, it has to address those changing needs and expectations.

According to Garvin there are eight dimensions related to quality [4]:

- performance, that focuses on measurable product attributes;
- features, that are product's secondary characteristics;
- reliability, that describes the likelihood that a product will fail within a given time of period.
- conformance, that describes a degree to which a products design and function match standards and specifications.
- durability, that describes the period the product is usable;
- serviceability is related to the possibility to repair or clean the product;
- aesthetics, that describes how one's physical senses of sight, sound and touch perceive the product;
- perceived quality, which is customers assumption about the product.

The above named dimensions, when taken into account for production, will help the producers understand the product quality better. Knowledge of those will provide a better understanding of

product quality. [4]

In conclusion, it can be said, that the quality of a textile product must be examined from both producers and consumers perspective. Consumers needs and expectations have to be considered in the early stages of production processes. Producers on the other hand, need to guarantee the consistency in the product performances. Even more than that, all of the processes should be inspected with quality control in order to guarantee the overall continuous quality.

1.3. Quality of Loungewear

Before discussing the quality of loungewear, it is necessary to explain the meaning of loungewear. According to Oxford Dictionary loungewear is a “casual, comfortable clothing suitable for wearing at home” [20]. It is commonly understood as home clothing: something that people wear lying on the couch or would sleep in. In the mean time, it is presentable enough to wear it also in a relaxed environment in public. [Appendix]

“When it comes to loungewear it is all about comfort” declares Knoblauch [9]. In loungewear comfort is profoundly defined through the fabric. It has to be “luxuriously soft, comfortable and easy to wear” [9]. These are the aspects that KSL is looking for in the fabrics used for the products [Appendix]. The products need to feel like a second skin. Nevertheless, besides the cosy and comfy factor, the customers are looking for style and versatility in the loungewear. Knoblauch comments that the “ability to wear it both inside and outside the home is a definite plus” [9].

Based on this vision Kriss Soonik Käärman has created a new term: *lounge*, a new category that “has the sexiness of the lingerie and comfort of loungewear” [8]. This is embodied into all of her collections and products, thereby also into loungewear that has influences from lingerie. She defines loungewear as “home clothing that needs to look better.” Clothes that one can wear moving from living room to the bedroom. The changes in fashion has made loungewear also wearable outside home because fashion is moving towards becoming more casual. Loungewear trends are trying to keep in pace with fashion. For many non-lingerie brands this is an opportunity to expand their product and market scope while using the same already well known cuts and fabrics. Younger brands on the other hand bring something new to the market. KSL is one of them. [Appendix 3.1.]

High quality plays a crucial role in the products that KSL launches as it defines itself as a luxury brand. To guarantee this high level of quality, it is recommended to test the performance of the

products. Fabric is usually the most complex and representative form of a textile structure that influences in most end uses. Therefore, the quality of a textile structure is one of the most important aspects of quality. [5]

Indeed, Raval explains that the common understanding of the quality of a fabric in the textile and clothing industry is determined by the subjective sense of touch that involves extensive personal preferences. Here measuring quality becomes difficult as touch is such a subjective it is difficult to build common standards of quality. “Fabric quality is associated with fibre content, type of yarn, fabric construction and the form of finish used in each case.” Accuracy of the judgement depends on the particular end use of the fabric. [18]

Customer who is interested in purchasing a garment first touches the fabric to evaluate how the fabric feels. The customer aims to estimate the performance of the fabric for the end use of the garment. Fabric hand properties are sensorial properties such as softness, stiffness, roughness and drapability are difficult to define in numerical values. Unlike the mechanical properties like strength and elongation which are measurable and definable in numerical values. Fabric hand is evaluated by people subjectively thus it is not possible to measure it by using only one instrument. [25] Subjective evaluation treats “fabric hand as a psychological reaction obtained from the sense of touch, based on experience and sensitivity of humans” [26].

Kristiina Suspender Top is a loungewear garment. KSL emphasises its multifunctionality – it can be worn in many occasions, in many ways; dress it down or up. It is appropriate to wear it on top of jeans in a casual gathering, with a pencil skirt at work or only with stockings in the bedroom for a sexy look. The product is reversible, which means that the keyhole detail can be in the front or at back. The puff is removable. Usage of the product depends on the fantasy of the wearer. [Appendix 2.1.]

Products need to be of high quality thus KSL is aiming for the high end market. This quality is achieved at KSL by implementing good fabrics which are crafted impeccably into a garment that fits perfectly. The fabric needs to feel and look exquisite, keep its performance after washing, stretchy enough to enable movements of the body while not dragging out. To remain competitive in this highly competitive luxury market no compromises can be made – fabric has to be of the highest possible quality. [Appendix 2.1; 2.2.;3.1.]

1.4. Expectations of the Customer

As discussed in the previous paragraph – quality must be seen from both the producers and customers point of view. Comfort, aesthetics, functionality, good fabric – these are the aspects of quality seen from the producers perspective. This is though only one side of the story – the voice of the customer need to be heard as well. In this paragraph the expectations of the customer are discussed. It is essential to know the expectations of the customers to be successful and profitable on the market. The challenge of the producer is to figure out the needs.

Ulrich and Eppinger state that determining the customers needs start with understanding three points: “1) who is the customer? 2) what info do we want from the customer? and 3) how to gather the info?” [2]. Using this guideline, the first step is to make a profile of the key customers. The profile suggests, what the customer of KSL is: from age bracket to reading preferences. To find answers to those questions, a customer inquiry is performed. Participants are asked about their needs and interests in this subject.

When it comes to luxury loungewear it does not make sense to try to sell to a too broad market, nor it is wise to choose a too small segment of the market. The producer needs to specify desired customer segment to which the products are directed. Jonsson suggests to create a profile of the imagined customer: a profile of the key customer. [3] KSL identified three key customers:

- female website customer,
- male website customer,
- female boutique customer.

These identified customers of KSL is in her mid twenties to mid thirties, inherently curious, with an active lifestyle, thinks fashion forward and appreciates good quality. [Appendix 1] According to Kriss Soonik Käärmann the customer is someone who “understands the fashion, love originality, and is willing to experiment a bit more” [10]. Based on this information, potential customers were chosen to participate in the inquiry.

Kaldolph describes attributes of the product. All of the attributes describe how the product succeeds in satisfying the customer in a certain aspect. The attributes are following [4]:

- aesthetics – appearance of the product, fashion preferences of the customer, fit and styling;

- durability – the period of products usability;
- cost – price that was paid for the product;
- comfort – the textile product's interaction with the body;
- care – the product's response to the cleaning procedures;
- appearance retention – the product's way to maintain the original appearance during storage, use and care.

These attributes serve as a guideline for formulating the customer inquiry. Customers are enquired about their expectations of loungewear by asking open questions. The participants are divided into two groups: on one hand, are closely related to the company (designer, press assistant, production manager, logistics manager, retailer) and on the other hand, the customers of KSL. As the quality is defined through the eyes of producers and of consumers, it is also important to compare the results and explore whether the opinions collide or not.

Still, as the opinion of the customer is subjective, the collected information needs to be systematised and translated into product requirements and specifications [2]. In this case these are the requirements of the fabric and the aim of this chapter is to create specifications of the expectations.

1.5. Expectations of the KSL Customers of Loungewear

Raval claims that consumers expect “very good appearance and also the fit of the garments that give comfort during wear” [18]. In order to find out if KSL customers feel the same, they were asked about their expectations of loungewear. There were all together 12 people enquired, from whom 5 were closely related to the company (founder and creative director, press assistant, production manager, logistics manager, owner of a shop that sells the products by KSL) and 7 fit to the customer profile of KSL. The number of the participants was meant to be small to perform qualitative, longer and deeper personal interviews¹. All of the interviewees were also asked to describe both the desired and undesired characteristics of fabric being used in loungewear. They were encouraged to talk about their needs of loungewear and share their experiences.

In the following table the expectations of the interviewees are listed out as they were mentioned

¹ All of the interviews (except one who filled out questionnaire) were recorded, transcribed and subsequently translated from Estonian to English (except two which were held in English). Summaries of the interview transcripts can be found in the appendix.

during the interviews. Importance is then derived from the frequency, which is added in the third column in a five point system.

Table 1 Rating Scale

Word frequency	Given points
1 – 2	*
3 – 4	* *
5 – 6	* * *
7 – 9	* * * *
10 – 12	* * * * *

Table 2 Expectations of loungewear

Expectation	Frequency	Importance
Aesthetic appeal	12	* * * * *
Durability	11	* * * * *
Comfortable	8	* * * * *
Good fit	7	* * * * *
Good fabric	6	* * * *
Functionality	6	* * *
Machine washable	5	* * *
Price sets the expectations	5	* * *
Higher price does not equal better quality	5	* * *
Wearability	4	* *
Easy to wash	3	* *
Details/ design	3	* *
Feminine	3	* *
Higher price makes the user more careful	3	* *
Well sewn/ craftsmanship	2	*
Casual look	2	*
Colour	2	*
Soft	2	*
Decant	1	*
Higher price when more functions	1	*
Quality treatment	1	*

The inquiry supports Ravel's statement that good looks of the product and comfortable good fit are valued as important aspects of the garment [18; Appendix 3.]. This is accompanied by high expectations of durability and of good fabric and functionality.

Aesthetic appeal is important for all of the respondents which is characterised by the “optimised handle of fabric, good appearance in the garment and good appearance in wear” [5]. Though the importance of the aesthetics varies, all of the interviewees state the look of the product to be essential trigger to make the purchase. The owner of one of the shops where KSL products is sold, is “convinced that women buy with their eyes.” And once they have bought it, they expect the appearance to last. The product is expected not to break, moreover many of the expectations of

appearance maintenance seem to be related to fabric – not to drag out, not to pill nor to lose the colour. [Appendix]

The product needs to look good but besides that it also needs to feel comfortable and good on the skin. This is especially the case by loungewear that is often worn on bare skin. According to Bishop comfort is one of the most complex characteristics of clothing and can be defined in many ways. “Clothing comfort is operationally defined as general human approval of all aspects of a clothing system while being worn” whereas discomfort should be minimal or non-existing. Comfort can be defined as thermal, tactile and pressure, as well as psychological comfort. There are “cultural and individual aesthetics and the human ability to relate to prior experiences” which also determine comfort. [5]

Table 3 Key comfort variables [5]

Thermal comfort	Sensory comfort
Clothing insulation	Pressure/ perceived and actual weight
Air permeability	Absorbency
Macro-environment (humidity, radiant heat gain/ loss, conductive heat gain/ loss, external convection)	Roughness/ abrasiveness
Micro-environment (clothing fit, internal convection, sweat rates)	Human mood
Internal blood circulation (convection)	aesthetics/ social expectations
Environmental stability	stretch
	prior experiences

Description of comfort should include relevant factors like “varying fits, activities, environments, durations and aesthetic comfort, among others” [5]. The interviewees describe comfort of loungewear as clothing that enough give to move freely in it. The garment should not itch, pinch nor be too tight; it should fit well. They also pointed out that in a comfort clothing one should feel like wearing nothing: “don't want to wear anything that abstracts the freedom of your body.” It needs to feel like the second skin. One of the interviewees says that if it looks good on the hanger, it doesn't help her much – it needs to look and feel good on her. [Appendix 3.11.]

Durability was seen as important by the interviewees. There are several reasons for that: it is either

because loungewear is seen as an investment if it is more expensive or customers do not want to buy loungewear that often as they do other clothing. There also seemed to be a correlation between the price and expectations of durability – the cheaper the product the lower the expectations. Even if the life of the product is short and it causes disappointment, it is understood by the customer if it was of lower price. That being said, customers expect the product to maintain its appearance for a long time once they have paid a higher price. [Appendix 3.]

Terms of care seem to be rather important to the customers too. Either easily washable or machine washable were the expectations in terms of care. Many of the interviewees also claimed not to look at the label at all. It seems that easily cleanable products are more favourable by the customers. It is pointed out by an interviewee that women “have too many errands to run to spend extra time to hand wash clothes or bring them to chemical wash” [Appendix 3.4]. Especially when it comes to loungewear that must be washed rather often. An interesting finding was that there were customers who claimed to take better care of the more expensive products. They said to be more willing to wash them by hand for example. This implies that the cheaper product doesn't get the gentle care. This implies that loss in appearance is because of less care and not necessarily because it is of lower quality. [Appendix]

Fabric of loungewear needs to feel good on the skin – “if it's hard or pricks, then it's not comfortable” [Appendix 3.4]. It was also said that “one can tell just by looking at the fabric if it's a quality fabric or not” [Appendix 3.5]. Fabric is said to play a crucial role in determining the quality and comfort of a loungewear product. Therefore the interviewees were also asked to describe the fabric they would like to be used for loungewear and pointing out the characteristics that they do not like.

Good fabric is understood as a quality fabric that according to the logistics manager of KSL can be set apart from the cheaper fabrics “even by just comparing them visually” [Appendix 3.5]. Thereby it needs to be appropriate for the product type. Loungewear requires stretchier fabrics that make it more comfortable to “lounging around” in them. It is also related to wearability that was pointed out by the interviewees – the products need to be easy to wear and easy to take care of. As the press assistant of KSL says; “The used fabric allows the customer to get maximum wear out of the product” [Appendix 2.2].

Therefore it is required for a loungewear product to be functional, even more than that, it has to be

multifunctional which “allows you to wear it in many ways” [Appendix3.11.]. This means that it can be worn in many occasions: whether at home, at the office or on a brunch. Additional function can be implemented into a product as a clever detail that a customer can use or not.

In the following table, there are the desired characteristics described by the interviewees. Importance is added in the third column in a five point system according to their frequency.

Table 4 Desired characteristics of fabric

Desired Characteristics	TOTAL	Importance
Softness	10	*****
Stretchiness	9	*****
Elasticity	7	****
Feel good on the skin	7	****
Breathable	6	***
Comfort	4	**
Easy care	4	**
Natural	4	**
Second skin	3	**
Aesthetically appealing	3	**
Light	3	**
Fast dry	2	*
Supportive	1	*

The most desired properties of fabric for loungewear product were softness and stretchiness, the latter meaning elongation of fabric. Followed by the demand of the fabric to feel good on the skin and to be elastic. Another aspect that stood out was the breathability of the fabric. Those characteristics: softness, stretchiness, good feel on the skin and breathability determine the comfort of the product made of this fabric. It was pointed out by couple of respondents that one of the functions of loungewear is to be unnoticeable, like it is a second skin. [Appendix 4]

Pleasant feel on the skin is essential when it comes to loungewear. Softness is important characteristic of fabric for majority of the interviewees. Like one of the interviewees says, fabric needs to “caress the skin” [Appendix 3.9]. The logistics manager says to always touch everything in the shop because she needs to feel the fabric on her skin whether it is soft or rougher [Appendix 3.5].

As the interviews showed, comfort is one of the desired characteristics of fabric in loungewear products. It is embodied in the fabric in a combination of different properties. Stretchiness for example makes the fabric more comfortable by giving more freedom to the movement. With a stretchy fabric the “product fits better, it's cosier to move in it, it doesn't pinch, has enough give when you sit down” [Appendix 3.4]. Nonetheless it needs to be elastic enough to maintain its original shape. The terms of care also determine comfort of the fabric – it needs to be easy to clean it [Appendix 3.4.].

Breathability of the fabrics is important to the customers but they admit not to think about it that much when purchasing a product. Whether the fabric is breathable becomes more apparent to the interviewees when wearing a product. One of the interviewees points out that breathability of the fabric might be more of a subconscious decision, it can be felt by touching the fabric but she does not think about it every time [Appendix 3.10.].

Besides the desired characteristics, the interviewees were enquired about the undesired characteristics of a fabric. These are listed in the following table. Importance is added in the third column in a five point system according to their frequency.

Table 5 Undesired characteristics of fabric

Undesired Characteristics	TOTAL	Importance
Pilling	9	****
Dragging out	6	***
Itchiness/ Scratchiness	5	***
Roughness	5	***
Pinchiness	4	**
Synthetics	4	*
Stiffness/ Hardness	2	*
(Elastic) threads out	2	*
Detached details	1	*
Transparence	1	*
Sleekness	1	*
Too thin	1	*
Static electricity	1	*
Colour fastness	1	*
Wrinkling	1	*

Fabric appearance can be usually described in terms of attributes like pilling, wrinkling, seam puckering, fuzziness, dimensional change and lustre which are the typical attributes that always appear, therefore are observed during the daily wearing or washing of fabric products [5]. The above named are the most undesired characteristics of fabric for the loungewear. In fact, the interview findings show that pilling, dragging out, itchiness and roughness are the most undesired characteristics.

In wearing loungewear “there is a lot of rubbing: against the coach, against other person. Pilling shouldn't appear” [Appendix 3.1]. Most of the interviewees claimed not to like fabrics that pill, but at the same time, they seem to accept it as a normal thing to happen to the clothing. It is difficult for the customer to understand which fabric pills less when choosing a product in the store. The interviewees are though aware of the antipilling treatment which makes the fabric more resistant to pilling and therefore more durable.

Customers also want the product to maintain its shape. “Dimensional stability refers to a fabric's ability to resist a change in its dimensions” - it can be either shrinkage or growth and happen when garment is washed, dyed, steamed or pressed. [5] It was emphasised several times by the

interviewees that they do not want their clothes to drag out. Interestingly, shrinking was not mentioned at all.

Therefore, it is demanded by the enquired customers that the fabric needs to feel good on the skin, which implies that characteristics such as itchiness, roughness and pinchiness should be avoided.

1.6. Specification of the Expectations of Customers of Fabric

The interviewees explained their expectations of loungewear. They expect the products to be aesthetically appealing, have comfortable good fit and be durable. The garments should be functional and made of good fabric. The interviewees also clarified the desired and undesired characteristics of fabric. This paragraph aims to create the specification of the expectations of loungewear fabric based on this data.

In the following table the expectations of loungewear derived from the inquiry are paired with the desired properties of fabric. These are the properties that are specified for the use of the KSL loungewear product Kristiina Suspender Top that was introduced before.

Table 6 Specification of the expectations of the customers of KSL

Expectation of loungewear	Desired value of the fabric
Aesthetics	Good looking
Durability	No pilling
	Elastic/ No dragging out
Comfort	Soft/ Not rough
	Not itchy/ scratchy
	Stretchy
	Feel good on the skin
	Breathable
	Light
Good fit	Stretchy
	Light
Functionality	Elastic/ No dragging out

Aesthetics concerns mostly the surface of the fabric. It is determined by the structure of the fabric and the appearance of the fabric whether it is fuzzy or sleek, mat or shiny, transparent or opaque and how much it wrinkles. Fabric properties like thickness, compressibility, bending properties, extensibility, dimensional stability and surface properties are associated with fabric aesthetics“ [5].

For the interviewees aesthetics is also associated with durability. It is important for the customer that the product maintains the original appearance of it for a long time. This means that the characteristics of strength, performance, resistance to changes of the fabric need to be good. The product should not break, drag out, pill nor lost its colour. Besides that it has to be easy to take care of.

Comfort of clothing is embodied in the stretchiness, lightness, softness, breathability and good feel of the fabric. Comfort is important in product performance and consumer satisfaction. It is a complex of environmental conditions and physical, physiological and psychological factors. [4]

Good fit of clothing depends on design, construction, weight and bulkiness of the product and fabric

properties. It is closely related to the resilience and recovery of the fabrics. [18]

Functionality, that is expected from the loungewear product requires the fabric to perform well in different environments. This can be associated with all of the above named expectations which in the context of choosing fabric for loungewear means that fabric needs to perform in various environments, for example be comfortable at home and at the office.

In conclusion, from the customer perspective the fabric suitable for Kristiina Suspender Top needs to be aesthetically appealing, durable – not to pill, drag out nor lose its colour. The fabric needs to feel good on the skin: it has to be soft, light, breathable and not to itch nor to scratch. Therefore, the fabric needs to be stretchy and elastic.

In the next chapter the properties of three potential fabrics for this product are discussed and analysed which one of them corresponds best to the customer expectations.

2. METHODS TO DETERMINE THE QUALITY OF A FABRIC

2.1. Properties of Fabric

The materials used in a product make up large part of the the appearance, structure, appeal and performance. Material specifications are therefore an important factor in determining the quality of a textile product. [4] As the inquiry showed, fabric does play an important role when it comes to customer expectations of loungewear.

In particular, the inquiry showed, that the most valued characteristics of the loungewear fabrics are those that concern comfort, aesthetic and durability aspects, a good fit and functionality. The textile products need to “perform in comfort and aesthetic appearance with design development and when put in use, strength, extension, elasticity, hand and resistance to abrasion that could be achieved through types of fibres, yarns and fabric geometry and the form of finish used“ [18].

In the scope of this thesis, fabrics are examined to find out which one of the three selected fabrics is most likely to meet the customers expectations. Comfort, aesthetic and durability aspects, a good fit and functionality are the characteristics that will be searched from the fabrics. To find this out, three methods used: first, information about the composition, structure and weight is provided by the fabric producers. Secondly, interviewees are asked to describe and compare three fabrics concentrating on the aesthetics, hand, weight and stretchiness. Thirdly, laboratory tests are conducted to measure pilling resistance, elongation and and elasticity. Presentation of the collected data is supported with theory.

Testing is the analysis and evaluation of a material or product to assess its characteristics, quality, or performance. A material or product may be examined in its original condition or it may be subjected

to one or more procedures before a measurement of its performance is made. [4] “Fabric appearance testing is the process of inspecting, measuring and evaluating characteristics and properties of a fabric surface” [5]. The methods used for testing can be divided into subjective and objective. Subjective method relies on the visual assessment while the objective, digital assessment, uses aid of testing machines. Subjective testing is simpler and has a low cost of equipment. However, it is more time consuming, inconsistent and labour-intensive as objective testing. [5]

“Fabric evaluations carried out by people are usually called subjective evaluations, whereas evaluations made by using instruments are called objective measurements” [26]. Aesthetic characteristics of fabric can usually be measured in mixing both subjective evaluation and objective tests. Subjective hand evaluation involves stroking the surface of the fabric with one or several fingers and then squashes the fabric gently in the hand. Subjective characteristics are assessed by the sensations of smoothness or roughness, hardness or softness, stiffness or limpness“ [5].

Laboratory testing evaluates characteristics or performance of materials using standard procedures in a specialised facility. Testing is conducted so that a material or product is evaluated in a controlled and planned environment. This approach minimizes omission of any critical factor and decreases inconsistencies in the evaluation. [4] It is sometimes referred to as accelerated testing because the goal is to assess characteristics and performance quickly. These laboratory tests may be used for research, product development, end use performance testing, materials or products analysis, or performance assessment. [4]

Unlike the hand of fabric, which provides the test performer with qualitative and subjective results, laboratory tests are used to get quantitative and objective results. Still, it is not 100% objective because the person conducting the tests needs to interpret the results. Here too, experience comes in handy. The more tests one has conducted the more competent one gets in reading and analysing the results.

There are different test standards applied to different types of fabric tests. In all of the tests there are important factors: “sampling protocol, the condition of measurements and the instrumentation and the measurement procedure” [5].

As fabric plays an important role in the quality of a loungewear product the aim is to evaluate the quality of the fabrics under study. There are many methods for evaluation, some of them being

subjective, some more objective. In this chapter, properties of the three fabrics under study are discussed based on theory, information from the fabric producers, laboratory tests and customer inquiries.

2.2. Composition of the Fabrics

Fabric is a plain structure that is made of fibres or yarns, solutions or a combination of those. Each component embodies information that together creates a specification of the final fabric. [4] Thus the individual components must be considered when fabric is analysed. Fabric quality is based on the quality of each component used to produce and finish the fabric, as well as the way in which the various components interact. Therefore fabric quality is cumulative and has potential to produce a synergistic or antagonistic effect. [4] Here the fibre properties are discussed, which will be followed by analysis of the structure of the fabrics and the finishing will be briefly explained.

The properties of fabric are largely determined by the incorporated fibres. Therefore it is important to understand the properties of the fibres before moving on to the properties of the fabric. The properties of fibre can be categorised [13]:

- 1) physical – colour, shape and contour, crimp, length, density and specific gravity, diameter or fineness;
- 2) mechanical – strength, modulus, flexibility, elongation, elastic recovery, resiliency;
- 3) chemical – absorbency, electrical conductivity, effect of heat, chemical reactivity and resistance;
- 4) response to environmental exposure;
- 5) other properties – dimensional stability, abrasion resistance;
- 6) cost.

It is important to know the exact composition of a fabric thus the different fibres have different characteristics which may have influence on the properties and value of the end product [5]. Two dimensions related to fibre content must be included in information available to the consumer at point of purchase: the generic fibres present and their amount or percentage by weight [4]. The fibres incorporated into all three of the fabrics under study are: viscose, also known as rayon, and elastane. The composition of the three fabrics under study are following [Appendix 8]:

Fabric 1 – 96% Viscose 4% Elastane;

Fabric 2 – 95% Viscose 5% Elastane;

Fabric 3 – 95% Viscose 5% Elastane.

Viscose is a manufactured cellulosic fibre. It is defined as a natural base polymer, because it is made from wood pulp, hence naturally occurring raw material. It has therefore similar properties to natural fibres such as cotton or linen. [14] Viscose can be produced in many ways, which makes it difficult to generalize the qualities of viscose. During the manufacture processes, the qualities are built into the fibres. [13]

Viscose is silk-alike aesthetic with excellent drapability, comfortable to wear, soft on the skin, breathable and more moisture absorbent than cotton. It does not build up electricity and is easily dyed with vivid colours. It does not pill unless it is made of short, low-twist yarns. Viscose is not resilient which means that it does wrinkle; ironing temperatures are low. [7; 14]

Despite of many preferable qualities of viscose, it has restrictions too. In particular the dry strength is moderate; wet strength pill and abrasion resistance are poor. While viscose stretches well but has low elastic recovery which means that it tends to remain stretched and also wrinkles badly. In order to compensate the low strength of viscose, it is often blended with other fibres. [7; 13; 14] The other fibre incorporated into all of the 3 fabrics in examination is elastane.

Elastane, also known as spandex or Lycra (named by DuPont) is used as a generic name for a “fibre in which the fibre-forming substance is a long-chain synthetic polymer comprised of at least 85 percent of a segmented polyethane” [13]. At the room temperature, elastane can be repeatedly stretched to at least twice their original length. Fibre immediately recovers returning to its approximate original length. Elastane is lightweight, soft and smooth. [16; 18]

Elastane is always blended with other fibres. Viscose is often covered with another fibre for use in woven or knitted fabric, leather shoe linings, mattress or bed sheets. The use of elastane in fabric gives a better fit and good shape retention without a deformation throughout the life of the product. This counts especially about knitted fabrics. It gives a comfortable second skin feeling to the garment and adds freedom of movement. Elastane is also lighter than rubber thread and has good resistance to the chemicals. [15; 16; 18]

Elastane is added to the textile products that require stretch for the fit, control, support and comfort

[7; 15]. Supplement of elastane improves the shape retention, fit, drapability and wrinkle resistance of the of the product. Elastane is resilient and resistant to abrasion. [18] “Care must be taken into account when laundering products that contain elastane, it shouldn't be washed in a hot water not ironed with excessive heat” [13].

Elastane is compatible with other materials, it can be combined with other “fibres to produce unique fabrics, which have characteristics of both fibres” [18]. Elastane adds dimensional stability to the knitted fabrics, while the comfortability remains. Therefore, elastane helps to improve both comfort and aesthetic properties of the fabric. “The percentage of elastane used in the knitting industry depends on the fabric stretch required and fabric properties” [16], the higher the amount of elastane the tighter the fabric. Thereby also the wrinkle resistance increases, because elastane adds elasticity to the fabric. When a small percentage of elastane is added, the fabric retains most of the aesthetic and feel of the other fibre. [15; 16; 18]

2.3. Properties of Knitted Fabrics

Knitted fabrics have some unique properties compared to woven fabrics. As all three fabrics under study are weft knit fabrics: both Fabric 1 and Fabric 2 are ribbed jersey and Fabric 3 is plain jersey. The characteristics of knits are discussed as follows.

Knitting is formulated by series of loops, intermeshing in rows, each hanging from the last. Each loop is called a stitch; a vertical row of stitches is a wale and a horizontal row of stitches is a course. There are two main categories of knits: weft knits and warp knits. Warp knit has a vertical interlocking construction and can be stretched one way; weft knit has side to side construction and can be stretched two ways. [7; 17]

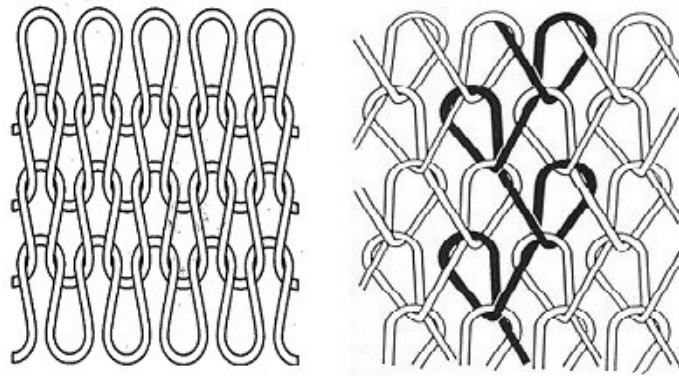


Illustration 1 Weft and warp knitting. [21]

There are 4 main types of stitches that make all knit fabrics: knit stitch, purl stitch, missed stitch and tuck stitch. Both plain jersey and ribbed jersey are common weft knits. Plain jersey has vertical wales on front and horizontal courses on back. [17]

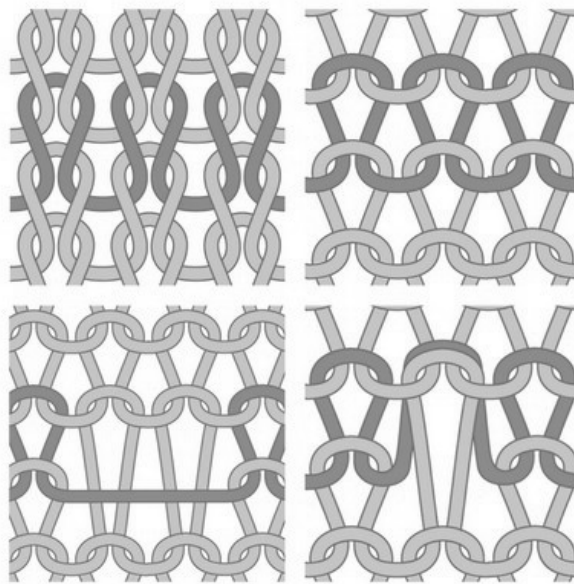


Illustration 2 Knit stitch, purl stitch, missed stitch and tuck stitch. [22]

Plain jersey has knit stitches on front and purl stitches on back. It stretches more crosswise but to some extension to lengthwise too. Plain jersey is most easily distorted from the knits and it tends to run if a stitch breaks. Fabric is produced under tension and therefore less stable. A special finish can be used to avoid curling. [7; 17]

Ribbed knits have knit and purl wales alternately. Ribbed jersey is reversible, has excellent crosswise stretch, is more elastic than plain jersey but tends to run if a stitch breaks. The edges, however do not curl. [7; 17]

In comparison with woven fabrics, if the same quantity of yarn used, knits are [7; 17]:

- lighter, more porous and less opaque;
- more easily distorted, leading to shrinking, or stretching or sagging. This also allows some degree of “give” in the structure;
- have more comfort stretch and recovery when the body moves. Woven fabrics have “give” only the diagonal or bias, not much on the grain lines unless made with stretch yarns;
- require thicker and/or heavier yarn to provide equal cover;
- might snag in weft knits;
- with superior wrinkle recovery.

The character of knitted fabric depends on the type of machine used, unlike by woven fabrics. Production of fine, close-knit fabric is done on machine with fine needles [7]. All knitted fabrics and products have certain things in common. Most important to the consumer, according to Raval, are superb elongation and elastic recovery in both directions, which help them to shape to the body so easily. [18]

Knits are more comfortable in cold, since the porous structure insulates well; it holds air to prevent loss of body heat. This is especially the case by ribbed jersey. [7] They provide comfort of breathability because body movements cause the loops to expand and contract. The openness of knit gives it their feel of warmth and also coolness. [18] “In wet conditions, a knit will simply “strain the rain” without a water-resistant layer” [7].

Knitted fabrics are not as durable to hard wear as woven fabrics. Knits do have inherent wrinkle resistance, but can drag out in wear, especially the plain jerseys. For knitted fabrics loop distortion

might also appear, generally as “localised groups of distorted knitted loops which have twisted out of the symmetrical configuration” [5]. The knits are more easily washable because of the porousness of construction. They also have tendency to shrinkage, however, the warp knits and double knits “show the best stability to care, such as machine washing and tumble drying” [7]. Steaming a knit lightly prevents it from dragging out after wear. The fabric should be kept in cool and dry to pressed it back to its position. Single knits should be stored folded or rolled, rather than hung; a shaped hanger is all right for most double-knits or warp knits. [7; 18]

2.4. Weight of the Fabrics

Weight of the fabric is one of the characteristics that determines the comfort of a garment. When it comes to loungewear, customers are not only looking for soft fabrics; they also want lighter weight fabrics [9]. It is also an important factor in determining fabric amount, cost and quality [4]. “Weight can be determined by a mass per unit or a mass per unit length of fabric” [5]. Weight of the fabric determines the suitability to the products [4]:

- less than 135,62 g/m² - lightweight. Suitable for blouses, shirt, sheer draperies;
- 135,62-237,34 g/m² – medium-weight. Suitable for trousers, skirts, suits, draperies, upholstery fabric, curtains, sheets;
- more than 237,34 g/m² – heavyweight. Suitable for durable suits, pants, upholstery, draperies, industrial products.

2.5. Elongation and Elasticity of the Fabrics

Stretch most often describes the elongation of the materials. Stretch in terms of care refers to an increase in size because of some action in cleaning. Comfort stretch refers to the small increases in material dimensions that occur with the movement which wearer may not be aware of. [4] Elongation is the “ability of a fibre to stretch before it breaks; the amount of “gives””[7].

Elasticity is the “elastic recovery is the relative ability to return to original length after stretching. A truly elastic fibre (an elastomer) can be stretched to several times its original length, with immediate and complete recovery, time after time” [7].

There are certain performance expected from the fabrics used for loungewear. According to Raval, besides being strong, the fabrics need to embody elastic behaviour thus it is crucial for the comfort

and ease of movement. Stretch adds flexibility and freedom to the movement. [18]

Fabric elongation is the increase in length of a fabric specimen resulting from a load applied under certain conditions. The force exerted on the fabric to cause it to elongate is significantly less than the force needed to rupture it. Assessing how a fabric responds to a smaller amount of force measures its comfort rather than its braking elongation. Comfort elongation is expressed as a percentage of the ratio of the extension of a material to its length before stretching. Force exerted to the material causes it to deform. [4]

Testing of elongation was performed with Fryma Fabric Extensometer according to EVS-EN ISO 14704-1:2005 [29]. Testing took place in standard atmospheric conditions (temperature: $20^{\circ}\text{C} \pm 2^{\circ}\text{C}$ and relative humidity $65\% \pm 2\%$).

Necessary for the procedure:

- details of the samples of the fabric, in size 75mm * 85mm; 3 * warp length, 3 * weft length;
- Extensometer;
- weights, 3kg.

Procedure shows the results in percentage.

Fabric growth that is also expressed as a percentage, is the difference between the original length of a specimen and its length immediately after removal of a specified load for a prescribed time. Recovery of a fabric defines whether fabric is stretch or not. The specimen is extended for a specified percentage stretch, held at the stretch for a prescribed time, and allowed to recover under no load. During the recovery, the length is measured at preselected times and fabric growth is calculated. [4; 5]

Equation 1. Fabric Growth [4]

$$\text{Fabric Growth, \%} = 100 [(B - A) / A]$$

where A = distance between benchmarks before extension;

B = distance between benchmarks after release of tension/ recovery from extension.

2.6. Hand of Fabric

Customers choose the products largely based on the feel of fabric. A simple “like it, it just *feels* nice” can determine whether customers purchase the product. Unless it is an online purchase where the aesthetics of the product and previous experience play a greater role.

Hand is the tactile sensation or impression that arise when materials are touched, squeezed, rubbed, or otherwise handled. It is an important aesthetic and comfort characteristic. Hand is the feel or handle and “may be warm and dry or cool; smooth and slippery or fuzzy, rough, bumpy; soft or firm; “sleazy” and drapable, even limp, or crisp, stiff, wiry” [7]. Skin irritation – rough fibres, such as coarse wool, can cause itchiness and feel prickly. [4; 7]

One definition of texture is the surface of a material as perceived by touch. Running ones hand over a surface may may give sensations of smoothness, roughness, dullness, glossiness, hairiness, sandiness or bumpiness. How a fabric feels is an important consideration in product choice. Texture is therefore one of the most important aspects in textile products. Texture can be seen as well as touched and artists and designers use a variety of techniques to convey textures when none is actually there.

Hand evaluation system is subjective and for credibility requires years of experience. Even then it can be influenced by the personal preferences of the assessor. There is a necessity to replace the subjective assessment of fabrics with an objective system that is based on machines. This gives more consistent and reproducible results. [5] “The main reason for proposing an objective evaluation of fabric handle is that tactile sensory assessment cannot be adapted to the textile industry. The high sensitivity of physical instruments to textile properties is an additional reason. The design and precise prediction of fabric handle depend on objective and quantitative specifications” [27]

Kawabata Evaluation System (KES) is the most commonly used objective evaluation method. It aims to predict the mean human sensory comfort perception by measuring thickness, compression, bending, shearing, surface friction and thermal properties of fabric. Method uses five extremely sensitive instruments for measuring the mechanical and surface properties of fabrics: heatflux, temperature, pressure, friction and displacement. However, Kawabata method is expensive, high maintenance and reparation costs. Therefore the researchers are forced to find simpler and less

expensive instruments for the objective evaluation of fabric handle. [5; 25; 28]

Sensory attributes that can be evaluated by subjective hand are [5]:

- stiffness/ crispness/ pliability/ flexibility/ limpness
- softness/ harshness/ hardness
- thickness/ bulkiness/ sheerness/ thinness
- weight/ heaviness/ lightness
- warmth/ coolness/ coldness
- anti-drape/ spread/ fullness
- tensile deformation/ bending/ surface friction/ sheer
- compressibility
- snugness/ looseness
- clinginess/ flowing
- dampness/ dryness/ wetness/ clamminess
- quietness/ noisiness
- prickliness/scratchiness/ roughness/ coarseness/ itchiness/ tickliness/ stickiness/ smoothness/ fineness/ silkiness
- looseness/ tightness

2.7. Pilling

Pilling is one of the biggest concerns of the customers when it comes to the appearance of a textile product. Pilling is a “fabric surface defect that appears during wear and washing by the entanglement of loose fibres that protrude from a fabric surface under the influence of rubbing action“ [18]. Fabric pills when fibres work out of a fabric and roll up into small balls on the surface [7]. “The formation of pilling can be divided into four stages: fuzz formation, entanglement, growth and wear-off” [5].

Pilling is caused by friction that is the resistance to relative motion between two objects in physical contact with each other. Smooth materials undertake less friction, they are more resistant to abrasion

than rougher materials. Pilling resistance measures resistance to the formation of pills on a textile surface. Pilling occurs as fibre ends work to the fabric surface, become abraded, break off, and entangle with other fibres that remain attached to the surface. Eventually the pill breaks or is abraded off the fabric surface. [4]

Fabric's resistance to abrasion is influenced by factors like “fibre type, the inherent mechanical properties of the fibres, the structure of the yarns, the constructions and thickness of the fabrics, and the type and amount of finishing material added to the fibres, yarns or fabrics” [5]. All staple fibres in spun yarns can form pills. They have good flex abrasion combined with fibres of lower flex abrasion resistance. Stubborn pilling, which means that the pills can not be easily brushed off, is a problem. This occurs with very strong fibres. [4; 7]

Most friction testing of materials involves movement and an assessment of how a material withstands friction. The performance may be assessed as a measure of the loss of textile's weight (mass) or the loss of aesthetic appeal or appearance. In pilling testing, a fabric is exposed to conditions that are likely to result in the formation of pills or some other objectionable surface change. Pilling propensity describes the ease and extent of pilling. Testing for pilling after cleaning gives a more realistic assessment of product performance. [4]

Natural fibres and man-made cellulosic fibres can be treated with antipilling treatment. One of them is called Bio-Polishing or Biofinishing that prevents a fabric to pill. It works when the “enzyme cellulases hydrolyse the micro fibrils protruding from the surface yarn because they are most susceptible to enzymatic attack. This weakens the micro fibrils, which tend to break off from the main body of the fibre and leave a smoother yarn surface” [23]. Another antipilling treatment is done with AVCO-SON, which is an acidic cellulose enzyme that is designed to reduce pilling problems of textiles made from cellulose fibres. It works by degrading the cellulose polymers units into glucose, which enables to remove the loose fibres, fuzz and pilling from the surface of fabric. The treatment gives the fabric a much lower tendency to pill. It also makes the fabric softer, smoother and brighter. [23; 24]

Martindale tester “subjects specimen to a rubbing motion in a straight line that widens into an ellipse and gradually changes into a straight line in the opposite direction.” [5]. With pilling testing the test specimen is rubbed against a layer of the same fabric. [4]

Evaluation of pilling can be either subjective or objective. First is based on a comparison of the test specimens with visual standards, which may be actual fabrics or a photographic rating scale. On a rating scale, there are 5 corresponds to no pilling or surface change and 1 corresponds to very severe pilling or surface change. Objective evaluations are mainly based on digital assessments, for example a digital image analysis or the laser scanning method. [4; 5]

Testing of elongation was performed with Martindale Pressure Tester according to EN ISO 12945-2 [19]. Testing took place in standard atmospheric conditions (temperature: $20^{\circ}\text{C} \pm 2^{\circ}\text{C}$ and relative humidity $65\% \pm 2\%$).

Necessary for the procedure:

- details of the samples of the fabric, with diameter of 140 mm, 6 * samples;
- Martindale Tester;
- rating scale to evaluate the results as numerical values between 1 (a vast pilling) and 5 (no changes on the surface).

In this chapter, the methods for fabric analysis and evaluation were discussed. In order to rationalise the choice of fabrics for the loungewear product by KSL, laboratory tests and a customer inquiry are performed. In the next chapter, the properties of the three fabrics under study are measured and analysed based on the theory in this chapter.

3. ANALYSIS OF THE DATA FROM LABORATORY TESTS AND CUSTOMER INQUIRY

3.1. Specification of the Fabric

In this chapter the collected data is discussed and analysed. The fabric specifications which are created based on the collected data from laboratory tests and customer inquiry are compared with customer's expectations of fabric. As the inquiry showed: the most valued characteristics of the loungewear fabrics for the customers of KSL are those that concern comfort, aesthetic and durability aspects, a good fit and functionality. The aim is to rationalise which one of the specifications of the three fabrics under study fits with specification of customers expectations. As a result suggestion is made to KSL for the choice of fabrics.

Specifications are used to describe materials, procedures, dimensions and performance of a particular product or style. They are used to purchase materials and describe the nature or the characteristics of the material, its desired quality level, and its expected performance. One must be careful: performance can relate to production aspects or its use in consumers' hands. [4]

Material specifications identify the test method by organization and number, the desired measure of performance, the option within the procedure, and the unit by which that performance characteristic is measured. Specifications include the conditions under which the test is conducted. [4]

3.2. Composition of the three Fabrics under Study

As explained in the previous chapter, the properties of fabric are largely determined by the fibres of which the fabric is made. All three fabrics under study are blends of viscose and elastane, though in

different volume:

Fabric 1 – 96% Viscose 4% Elastane;

Fabric 2 – 95% Viscose 5% Elastane;

Fabric 3 – 95% Viscose 5% Elastane.

The composition makes them particularly appropriate for the loungewear because viscose has silk-alike aesthetic, excellent drapability and it is comfortable on the skin. Viscose feels soft on the skin, is breathable and does not build up electricity. [7; 14] As concluded from the first chapter, the customers of KSL expect fabrics of loungewear to be aesthetically appealing and comfortable to wear. This means that in addition to the aesthetic appeal, the fabrics have to be soft, light, breathable and feel good on the skin. Hence, they should not be rough, itchy nor scratchy. In these terms, all off the three fabrics under study fulfil the expectations of aesthetics and comfort.

The relation between aesthetics and durability was explained in the first chapter. As the customer inquiry showed, the customers expect the fabrics to maintain the aesthetic appeal – they need to be durable. This means that the fabrics should not pill, drag out nor fade colour. The downside of viscose is its poor strength, pill and abrasion resistance. In addition it does wrinkle, has to be washed with care and the ironing temperature must be kept low. [7, 13; 14]

The qualities of viscose have been improved by all of the three fabrics by blending it with elastane. This helps to improve both comfort and aesthetic properties. Elastane improves wrinkling resistance, shape retention and fit. Added elasticity makes the fabric more resistant to drag out while giving freedom of movement and a comfortable second skin feeling. [15; 16; 18] The customers expect good fit due to light and stretchy fabric which is provided by the composition of elastane in the fabrics.

From the down side, elastane, just like viscose requires gentle laundering. This contradicts the findings of the customer inquiry, which showed that most of the users would not like to worry about washing the garments. All of the three fabric need to be taken care gently.

3.3. Properties of the three Knitted Fabrics under Study

As discussed in the previous chapter, knitted fabrics differ from the woven fabrics. Both Fabric 1 and Fabric 2 are ribbed jersey and Fabric 3 is plain jersey. As follows the properties of these fabrics

are discussed.

Warm lingerie is gaining back its popularity. KSL has added knitted fabrics to the selection of loungerie which has not been a common choice for the lingerie boutiques. According to Kannel, KSL has “a talent of making [knitted loungewear] sexy and attractive” [12]. With the choice of materials and styles it is shown that glamour is not everything [Appendix; 12].

Compared to the woven fabrics, knitted fabrics are lighter, more porous and less opaque. They have more comfort stretch and recovery when the body moves. In addition, knitted fabrics have superior wrinkle recovery. [7; 17] As the customer inquiry showed, these are exactly the properties that the KSL customers expect from the fabrics used for a loungewear products: they have to be light fabrics with comfort stretch and a good wrinkle recovery.

Though knitted fabrics have a good wrinkle resistance, they quickly drag out in wear. These fabrics tend to be less durable to hard wear than woven fabrics. [5; 7] As explained in the previous paragraph, adding elastane improves the properties of the fabric by giving it more elasticity and better wrinkle recovery, a property that a 100% viscose fabric is lacking.

Knitted fabrics are more easily washable than woven fabrics because of their porousness of construction [5; 7]. Clothing that is easy to take care of was one of the more important expectations of the customers. Thus both viscose and elastane require gentle laundering, the knitted structure makes the washing procedure a bit easier.

As the customer inquiry illustrated, customers expect the fabrics of loungewear to be stretchy and elastic in order to give a comfortable fit and aesthetic appeal. In comparison with ribbed jersey, plain jersey stretches mostly crosswise but to some extension also lengthwise while ribbed jersey has excellent crosswise and lengthwise stretch and is more elastic than plain jersey. Both plain and ribbed jersey have a tendency to run if a stitch breaks. [7; 17]

3.4. Weight of the three Fabrics under Study

Weight is an important property as it makes the loungewear product to fit better and more comfortable to wear. This was reflected by the customers' expectations in the customer inquiry. [Appendix; 9]

The weight of the three fabrics under study (provided by the fabric producers) is as following

[Appendix 7.]:

Fabric 1 – 144 g/m²;

Fabric 2 – 210 g/m²;

Fabric 3 – 155 g/m².

All of the three fabrics under study fall into the medium-weight fabrics category thus they weigh 135,62-237,34 g/m² [4]. The weight difference between the lightest and the heaviest fabrics of the three fabrics is rather large. Fabric 1 (144 g/m²) and Fabric 2 (155 g/m²) are closer to the light-weight fabrics, while Fabric 2 (210 g/m²) hints towards the heavy weight fabrics.

As a part of the customer inquiry, the interviewees were asked to describe and evaluate the weight of the three fabrics under study. The interviewees found both Fabric 1 and Fabric 3 to be really lightweight. Fabric 2 in comparison felt light but in comparison to other two it felt a bit heavier than the others. It was more difficult to feel the difference in weight in between Fabric 1 and Fabric 3. Some of the interviewees felt like the first was lighter and described it as “super light” [Appendix 4.6.] or “very light” [Appendix 4.9.] and Fabric 3 was evaluated as “really light but not as light as Fabric 1” [Appendix 4.7.]. Other assessors thought “Fabric 3 to be the lightest of them” [Appendix 4.2.; 4.8.; 4.10.].

3.5. Elongation and Elasticity of the Fabrics

Stretchiness and elasticity of the fabrics were rated by the customers to be one of the most important properties of a loungewear fabric. Stretchiness is understood as elongation of the fabric, which gives enough freedom of movement to feel oneself comfortable, a property especially valued in loungewear. Stretchiness and elasticity also give a better fit to the product. However, dragging out is an undesired property of a fabric, therefore elasticity is required from the fabric.

In addition to the customer inquiry, elongation and elasticity of the three fabrics under study were measured in the laboratory with Fryma Fabric Extensometer according to EVS-EN ISO 14704-1:2005 [29].

Median results of elongation after tests with 3 samples warp length and 3 samples weft length, are as following [Appendix 6.]:

Fabric 1: warp length – 59%, weft length – 211%;

Fabric 2: warp length – 107.7% , weft length – 198.3%;

Fabric 3: warp length – 90.3% , weft length – 154%.

As the results show, all of the fabrics have much higher elongation in weft length compared to the warp length. Though the elongation of Fabric 1 in warp length is the lowest, it has the highest elongation in weft length. Fabric 2 has the highest elongation in warp length and the second highest elongation in weft length. Fabric 3 has a high result in warp length but the lowest elongation in weft length.

Median results of recovery after tests with 3 samples warp length and 3 samples weft length, are following [Appendix 6.]:

Fabric 1: warp length – 1.94%, weft length – 6.69%;

Fabric 2: warp length – 2.34%, weft length – 3.13%;

Fabric 3: warp length – 1.17%, weft length – 4.74%.

Recovery of fabric shows the elasticity of a fabric. In weft length, Fabric 1 has the worse result whereas Fabric 2 has the best results. In warp length, Fabric 2 has the worse result whereas Fabric 3 has the best results.

For a loungewear product it is most important to have high elongation and elasticity results especially in weft length. Therefore, Fabric 2 got the best results with excellent elongation and elasticity results. Though Fabric 1 has excellent elongation results, it does not have as high recovery result compared to the other two fabrics. Fabric 3 has a good elongation and recovery results.

In the customer inquiry the interviewees were asked to describe and evaluate the elongation and elasticity of the three fabrics under study. The interviewees evaluated Fabric 1 to be very stretchy and elastic, going back to its original shape. Interviewees stated not to be afraid of the fabric to drag out. Fabric 2 was also found to be very stretchy and elastic. Some interviewees stated that Fabric 2 had better elasticity, while Fabric 1 elongates more whether Fabric 2 [Appendix 4.3.; 4.6.]. Some, on the other hand thought that Fabric 1 is not that stretchy compared to Fabric 2 which seems to have more give and be more elastic [Appendix 4.4.]. Fabric 3 was found to be stretchy and elastic. In comparison with the others not as much though. Some interviewees would be afraid of the fabric to lose its shape [Appendix 4.6.; 4.10.; 4.11.].

3.6. Hand of Fabric of the three Fabrics under Study

In the customer inquiry the interviewees were asked to describe and evaluate the elongation and elasticity of the three fabrics under study. The results are shown in the following tables.

Table 7 Hand of fabric. Fabric 1

FABRIC	CHARACTERISTIC	DESCRIPTION	TOTAL
Fabric 1	Looks	Beautiful/ looks good	6
		Slightly transparent (when stretched)	5
		Gentle shine	4
		Bit fuzzy	3
		Wrinkles	3
		Looks simple	2
		Wider weft	2
		Looks like pills easily	2
		Looks like it wouldn't pill	1
		Luxurious look	1
		Mat	1
		Detailed/ tiny structure	1
	Feel	Extremely/ super/ really soft	9
		Feels good on the skin	5
		Best feel of them	4
		Quality/ good fabric	3
		Soft	2
		Sensual	2
		Feels warmer	2
		Feels rather cool	1
		Second skin	1
		Fragile	1
	Stretch	Good elasticity	7
		Very stretchy	6
		Elongates well	3
		Shapeless, loses shape easily	2
		Not afraid of it dragging out	1

		Elongates the most	1
		Stable	1
	Weight	Really lightweight	7
		Light	2
		Delicate	2
		Sheer	2
		Really thin	2

As the table shows, the most mentioned property of Fabric 1 was its softness (mentioned 9 times), followed by good elasticity and really lightweight (both mentioned 7 times). Good stretchiness of the fabric and beautiful looks were (both mentioned 6 times).

Fabric 1 is an absolute favourite for the customers when it comes to softness. The fabric is extremely soft, very light luxurious and thin and therefore feels exquisite. One of the interviewees noted that Fabric 1 is what she imagines a loungewear fabric should be like [Appendix 4.8.]. The interviewees noticed the fabric to have a bit of shine to it. Elongates well and does not drag out. The described properties satisfy the expectations of the customers of loungewear fabric. This fabric feels like second skin: it is soft, light and stretchy, therefore suitable for a loungewear product.

Despite the desired properties of fabric that Fabric 1 fulfils, the interviewees noticed Fabric 1 to be less resistant to wrinkling than other two fabrics. It was pointed out by two interviewees that they would be afraid of the fabric to lose its shape.

Table 8 Hand of fabric. Fabric 2

FABRIC	CHARACTERISTIC	DESCRIPTION	TOTAL
Fabric 2	Looks	Tight weft/ elasticity pulls it together	5
		Elastic thread more visible - shiny	4
		Most opaque	4
		Good quality	3
		Looks the best	3
		Rustic look	1
		Detailed/tiny texture	1
		Looks like it wouldn't pill	1
	Feel	Rougher then others	6
		Feels nice on the skin	4
		Quite soft	3
		Feels cooler	2
		A bit scratchy	1
		Not that breathable	1
		Stiffest of them	1
	Stretch	Strong shape, keeps its shape	6
		Most elastic	6
		Good stretch	5
		Most stretch	3
		Good elasticity	2
	Weight	Heaviest of them	9
		Thickest of them	4
		Quite light	1

The table above shows that the most mentioned property of Fabric 2 was that it is the heaviest of the three fabrics (mentioned 9 times). The interviewees pointed out that Fabric 2 is rougher than others, has a strong shape and is the most elastic of the three fabrics (all mentioned 6 times).

According to the customer inquiry, Fabric 2 is soft, light and stretches well in both ways. The fabric feels nice and soft on the skin but in comparison to other two fabrics it feels rougher, thicker, heavier and stiffer. Especially for a sensitive skin, it might feel a bit scratchy. The interviewees liked the aesthetics of Fabric 2 – in particular the tight ribbed structure it has. It seems to maintain its

appearance for longer. Fabric 2 is believed not to wrinkle and not to drag out: it was said to be more stable compared to the other two. Fabric 2 is very stretchy and elastic and the interviewees said not be afraid of the fabric to lose its shape. Some stated that Fabric 2 seems to be of higher quality. This fabric also has a bit of shine to it, feels cooler and thicker than the other two fabrics.

Table 9 Hand of fabric. Fabric 3

FABRIC	CHARACTERISTIC	DESCRIPTION	TOTAL
Fabric 3	Looks	Slightly transparent when stretched	4
		Wrinkles a little	2
		Looks good	2
		Looks okay	1
		Luxurious look	1
		Looks like it wouldn't look good for long	1
		Fine/texture	1
		Gentle shine – more special.	1
	Feel	Really soft	4
		Feels good on the skin	4
		Soft	2
		Feels cool during summer, warm during winter	1
		Feels cool on the skin	1
		Feels warm on the skin	1
		Rubbery feel – like resistance	1
	Stretch	Stretches well	5
		Looks like it would drag	3
		Elastic	3
		Limp	2
		Less stretch than others	2
		Not afraid of it dragging out	1
		Elongates well	1
		Flexible	1
	Weight	Really lightweight	6
		Light	3
		Sheer/fine	2
		Tightest structure	1
		Really thin	1
		Heaviest	1

According to the interviewees Fabric 3 is very light-weight (mentioned 6 times) and it stretches well (mentioned 5 times).

During the interviews, the fabric was described as being very soft, thin and very light-weight. The interviewees said the fabric to feel very light and good on the skin. While the fabric stretches well and is thereby elastic, not as much in comparison as other two fabrics. According to the designer of KSL, Fabric 3 is cooling during summer and warming during winter. The fabric has desirable aesthetics: looks luxurious though it gets transparent when stretched. Fabric 3 seems to have a tendency to wrinkle but not as much as Fabric 1. To some interviewees it also seems like the fabric would drag out more easily.

3.7. Pilling Resistance of the three Fabrics under Study

During the interviews, the customers pointed out several times that they found it important that the products maintain the original appearance. Especially pilling was often mentioned and regarded as one of the most undesired property of fabrics. To investigate to what extent the three fabrics under study pill, they were tested in the laboratory with Martindale Pressure Tester according to EN ISO 12945-2 [19].

Median results of pilling resistance after tests to 2000 cycles [Appendix]:

Fabric 1: K2 – 2-3, dense pilling, small pills;

Fabric 2: K2 – 4-5, mildly fuzzy;

Fabric 3: K2 – 2-3, very dense pilling, a lot of relatively large pills.

The tested fabrics are compared to photographic scale to evaluate the results as numerical values between 1-2 (dense pilling) and 4-5 (no changes on the surface). Fabric 1 and Fabric 3 had a dense pilling by 2000 cycles whereas the surface of Fabric 2 maintained the most of the original surface: it got just a bit fuzzier.

The most surprising result of the pilling test concerns Fabric 3. While suppliers information stated that it was treated with antipilling treatment.

Median results of pilling resistance after tests to 7000 cycles [Appendix 5.]:

Fabric 1: K2 – 1-2, dense pilling;

Fabric 2: K2 – 4-5, sparse pilling;

Fabric 3: K2 – 2-3, dense pilling but pills not as big as on the photographic rating scale.

After 7000 cycles, Fabric 1 had the worse result showing dense pilling with large pills. Fabric 3 showed smaller pills but the pilling is very dense. In comparison, Fabric 2 shows the best results in pilling resistance since there are only single pills on the surface of Fabric 2.

As discussed in the first chapter, a good loungewear product needs to survive rubbing. This was reflected by the interviewees: pilling is the most undesired property. As the testing results showed, both Fabric 1 and Fabric 3 create pills easily while Fabric 2 is resistant to pilling.

Therefore, Fabric 2 is most suitable for the Suspender Top when it comes to pilling.

3.8. Choice of the Fabric for the Loungewear Product by KSL

This chapter has described the analysis of the three fabrics under study, from both consumer perspective and producer perspective. The customer inquiry showed, that the most valued characteristics of the loungewear fabrics are those that concern comfort, aesthetic and durability aspects, a good fit and functionality. The customer inquiry was followed by an analysis of the three fabrics under study. These two sources of data are the basis on which the most suitable fabric for the loungewear product by KSL can be selected.

The blend of viscose (95-96%) and elastane (4-5%) makes all of the three fabrics suitable for the loungewear product, thus they satisfy the expectations of aesthetic and comfort of the customers. The fabrics feel soft and light on the skin and are breathable. Since all of the three fabrics incorporate elastane, they are stretchy and have improved wrinkle resistance, higher elasticity and more freedom of movement.

Knitted fabrics are a good choice for a loungewear product considering their light weight, good stretch and superior wrinkle recovery. Ribbed jersey is stretchier and more elastic than plain jersey, therefore it is a better choice for a loungewear product. It is more resistant to dragging out, which is an important expectation of customers. Therefore, Fabric 1 and Fabric 2 get better results compared to Fabric 3 to be selected for a loungewear product.

All of the three fabrics under study are considered to be light-weight fabrics [4; Appendix 7.]. The lightness of a loungewear fabric gives the customer a second skin feeling – a desired property of fabric for the customers. Fabric 1 and Fabric 3 are significantly lighter than Fabric 2 and therefore are better suitable for a loungewear product.

Stretchiness and elasticity are the most important properties of a loungewear fabric for the customers. All of the three fabrics knitted fabrics that contain elastane, therefore have good elongation and elasticity, as the laboratory tests showed. The interviewees describe all of the fabrics to be stretchy and elastic. Though, they pointed it out that Fabric 3 is not as stretchy as the other two and they expect it to drag out more easily. The laboratory test, however, showed a good recovery of the fabric. In conclusion, from both and customer and laboratory test, Fabric 2 is preferred for the loungewear product due to its excellent elongation and elasticity.

According to the subjective hand of fabric evaluation Fabric 1 is an absolute favourite for the customers: they praise the fabric for its extreme softness, lightness, stretchiness and their expectation that it does not drag out. “It feels like second skin” [Appendix 4.2.]. It does though have undesired properties like wrinkling and it seems to some interviewees that it would drag out. The described properties satisfy the expectations of the customers of loungewear fabric.

Fabric 2 feels nice, soft and light on the skin. In comparison to other two fabrics it feels rougher, thicker, heavier and stiffer. It does fulfil the expectations of customers thus it is also very stretchy and elastic, the interviewees are not be afraid that it will drag out.

Fabric 3 is described by the interviewees to be very soft, thin and light-weight. The fabric also stretches well and is elastic, in comparison with other two fabrics not as much though. Based on the hand of fabric, Fabric 1 is preferred for the loungewear product, thus it satisfies the customers' expectations of comfort better than the other two fabrics.

According to the pilling tests conducted in the laboratory, Fabric 1 and Fabric 3 have severe pilling already after 2000 cycles while Fabric 2 does not show much of a change on the appearance of the fabric surface. According to Estonian Clothing and Textile Association the satisfactory minimum result of pilling resistance by 2000 cycles is 3-4 [6]. Therefore, only Fabric 2 passes the pilling resistance test.

Fabric 1 has many desired properties that fulfil the customers' expectations, such as the softness, lightness and breathability. The interviewees found this fabric to feel the nicest on the skin. The fabric has excellent stretch and elasticity. The named properties make this fabric a good choice for the loungewear piece. There is though a downside to this fabric: the interviewees noticed that it has a low resistance to wrinkling and it got low results in the pilling test. Though the fabric feels

incredibly good on the skin, the excitement of it might fade quickly when the fabric starts to pill after couple of times wearing the product.

Fabric 2 fulfils many expectations of the customers: it is soft, light-weight, has good breathability and excellent stretch and elasticity. Compared to the other two fabrics it feels rougher, stiffer and heavier. Though it was not rated to be as pleasant on the skin as the other two fabrics, it was the only one of them that passed the laboratory pilling test.

Fabric 3 is very soft, light, breathable and feels good on the skin. Therefore, it fulfils the expectations of the customers. The fabric has good stretch and elasticity, though less than the other two fabrics. Fabric 3 is advertised to be a fabric with antipilling treatment, therefore a good result in pilling test was expected. Against the expectations, the fabric had dense pilling and thereby did not pass the pilling test.

Based on the customer feedback and the laboratory test Fabric 2 is the most suitable fabric for the Suspender Top by KSL. It is most suitable as it satisfies both aesthetic and durability expectations of the customers. The fabric is less likely to drag out than the other two fabrics. This fabric is extremely stretchy and elastic which a good fit. The laboratory test proved the fabric to have good resistance to pilling. Therefore, it maintains its appearance for longer. Though the it is not as soft nor light as the other two fabrics, it does feel good on the skin.

3.9. Suggestions for KSL to increase product quality

As a luxury company, KSL lays a lot of attention on satisfying their customers. Therefore, it is essential to launch quality products to the market. Based on the research presented in this thesis, this thesis contains some suggestions that might help to improve the quality of the KSL's products.

First of all, Fabric 2 is the recommended fabric for Kristiina Suspender Top, since it satisfies the customers' expectations in the most extensive way from the three fabrics under study.

Even though the other fabrics would not be recommended to be used under the conditions as studied in this thesis, it might be worthwhile investigating how they can be possibly used in the future. For example, Fabric 1 managed to fulfil the customers' expectations exceptionally well, the feel of it was highly appreciated, though the pilling properties are a serious down side of the fabric. The first suggestion is to get in contact with the fabric producers to request fabric with antipilling treatment.

It is however important to note that such antipilling treatment should not compromise the other properties of the fabric, such as softness.

Fabric 3 is treated with antipilling treatment. This fabric has been used for products by KSL throughout the years; the employees of KSL have worn those products consistently and there have been no complaints about pilling. Though the fabric that was tested was confirmed by the designer Soonik Käärmann as the one used for the products, it did not perform on the expected level as it showed dense pilling. This pilling might be the result of a wrong fabric given for testing by the production company. If this is the case, KSL could gain more control over the processes in the outsourced production company to ensure that the right fabrics are used for the products.

Another possibility could be that it was a wrong fabric sent by the fabric supplier. In this case, a random sample control of the fabrics by the suppliers could ensure that the right fabrics have been sent. Yet another possibility for this result might be that the products are not “heavily used” by the customers. To confirm this, a separate study needs to be conducted.

In this study it is suggested to make samples from all of those three fabrics under study and perform another set of tests with them. It is crucial to test the fit: different fabrics perform differently on the same pattern. A test customer should wear the products to evaluate the comfort and durability of it. Also a washing test is suggested to evaluate the changes in colour and dimension.

It would be interesting for KSL to compare its product with the products of the competitors. This could be part of a larger market research to find out what are the customers looking for in this niche lingerie and loungewear branch. The product development should partly be based on the situation on this particular market.

While not the focus of the study, in addition of the suggestions made to KSL, it is important to highlight that the company could gain more quality control over the outsourced production company and the fabric suppliers to guarantee that the right fabrics are being used. For example, there could be a random sample control organized to keep the quality at a constant level.

To increase product quality based on fabrics, KSL could use more fabrics with antipilling treatment or better laundering requirements. As the customer inquiry showed, this is an important customer requirement. When implemented successfully in the products, this could increase the brand value and a valuable marketing communication tool.

CONCLUSION

In the scope of the present work the choice of fabrics for a loungewear product by Kriss Soonik Loungerie (KSL) was rationalised. This choice was based on three fabrics and the aim was to find the most suitable fabric that would benefit KSL and satisfy the expectations of the customers.

KSL is a London based luxury lingerie and loungewear brand that a combination of expresses sexiness, quirkiness and comfort. Combining fashion forward lingerie with luxurious loungewear the brand portrays the Estonian roots of the designer and that of Scandinavian minimalist sensibility.

KSL has set out a customer profile as part of their marketing effort. Knowing the customer gives a better basis to make decisions in the product development and also in the choices of materials used in the products. As this customer profiling was done a year ago, part of this study was to investigate if the initial customer profile created by KSL coincide with the current customer base.

Customers of KSL were enquired through interviews in order to explore their expectations of loungewear products and its fabrics. They were also asked to evaluate the properties of the three fabrics under study. In addition to the subjective customer enquiry, a more objective laboratory tests and theoretical analysis were carried out.

The first chapter discusses the quality of a loungewear products. The literature defines the term quality in multiple ways. Quality can either mean a characteristic or a property of something or it can mean superiority or perceived value of something. While recognising that quality can be seen from different perspectives, in this thesis it was concentrated on the perspectives of the product, the producer and the customer.

Loungewear is a casual and comfortable clothing that is mainly worn at home. Customers expect loungewear products to be soft, comfortable and easy to wear. In addition, aesthetic appeal becomes increasingly important so that it can also be worn in a public space. As fabrics are a large part of clothing, quality of a loungewear product is largely defined by high quality fabrics.

A customer inquiry was performed to find out the expectations for loungewear products. Aesthetics, durability, cost, comfort, care and appearance retention were the attributes of the product [4] that were used as a guideline in formulating the inquiry. The inquiry showed that the aesthetic appeal and comfortable fit are the highest valued aspects of the garment. Less but still often mentioned were the expectations of durability, functionality and usage of good fabrics of the products.

After studying the loungewear product, the enquiry focussed on the desired and undesired properties of fabrics used in a loungewear product. The most desired properties of fabric for loungewear product were softness and stretchiness, the latter meaning elongation of fabric. Followed by the demand of the fabric to feel good on the skin and to be elastic. Another aspect that stood out was the breathability of the fabric. In contrast, the most undesired properties are pilling, itchiness, roughness and dimensional change.

The expectations of loungewear derived from the inquiry is related to the desired properties of fabric. As a result the properties that are desired for Kristiina Suspender Top are as following: aesthetics – good looking fabric, durability – elastic fabric that does not pill, comfort – soft, light, breathable and stretchy fabric that feels good on the skin, therefore the fabric is not rough, itchy nor scratchy, good fit – stretchy and light fabric, and functionality – elastic fabric.

In the second chapter, the ways to evaluate the quality of a fabric are discussed. In the scope of this thesis, determination of quality of the fabrics is based on both objective and subjective measurements and evaluations. Both methods analyse and evaluate a material or product in order to assess its characteristics, quality, or performance. Objective measurements are conducted as laboratory testing by using instruments and procedures in a special facility. Subjective fabric evaluations, on the other hand, are carried out by respondents who stroke the surface of the fabric and squash the fabric in the hand.

The properties of fabrics that are discussed in the second chapter were highlighted by the interviewees in the customer inquiry. As all of the three fabrics under study are knitted fabrics; blends of viscose and elastane, the properties of knitted fabrics and the influence of the composition

to the fabric properties are explained. Also the meaning and testing procedures of weight, elongation, elasticity and pilling resistance of the fabrics are explained. The method of subjective hand was discussed: definition of it, evaluation process and the fabric properties that can be evaluated by using it.

In the third chapter the data from laboratory tests and customer inquiry are discussed and analysed. The enquiry showed that the most valued characteristics of the loungewear fabrics for the customers of KSL are those that concern comfort, aesthetic and durability aspects, a good fit and functionality. In this chapter the properties of the three fabrics were described. It was analysed which fabrics satisfied the expectations of the customers of the fabric properties.

Recommendations

Fabric 1 fulfils many customers' expectations, such as the softness, lightness and breathability. It has excellent stretch and elasticity. The downside to the fabric is the low resistance to wrinkling and low results in the pilling test. Though the fabric feels incredibly good on the skin, the excitement of it might fade quickly when the fabric starts to pill after couple of times wearing the product.

Fabric 2 is the most suitable fabric for the Kristiina Suspender Top, because it satisfies the aesthetic, durability, comfort and fit expectations of the customers. Though the fabric feels rougher, stiffer and heavier compared to the other two fabrics, it is soft, lightweight, has good breathability, excellent stretch, elasticity and pilling resistance.

Fabric 3 fulfils the expectations of the customers. The fabric is very soft, light, breathable and feels good on the skin. It has good stretch and elasticity. Though the fabric is advertised to be a fabric with antipilling treatment, it did not pass the pilling test. Therefore, the tested fabric does not live up to the expectations of the customers. It is advised to check whether it was the right fabric given for the testing purposes.

Recommendations to increase overall product quality based on fabrics, KSL could:

- have a regular quality control of the ordered fabrics, the outsourced production company and the fabric suppliers;
- make loungewear samples of all three fabrics under study to perform the wearing tests;
- compare the products with the ones of the competitors;

- use more fabrics with antipilling treatment or better laundering requirements.

Limitations and future study

This research process could be improved by collecting more data. For example, the customer inquiry could be extended by including interviewees from different cultures and countries as KSL has an international customer base. Also the number of interviewees could be increased to obtain a stronger data set. For a data collection, the inquiry could be improved by adding a rating scale for subjective evaluation. This will help both the interviewees as the analysis process.

When the above mentioned limitations are addressed, this research method can be used as a basis for a future research project. As it combines the subjective perspective of the customer with objective laboratory testing, it could be an interesting way of evaluating product quality from a multidimensional perspective. As a result, this research captures a wide perspective to quality of textile products, and therefore might be a basis for a research method of textile companies that would like to review and improve their fabric quality level.

RESÜMEE

Käesoleva lõputöö eesmärk on ratsionaliseerida kanga valikut, mis oleks kasumlik ettevõttele ja rahuldaks kliendiootusi, Kriss Soonik Loungerie (KSL) kollektsioonis oleva *loungewear* toote jaoks.

KSL on Londonis asuv luksuspesu ja *-loungewear*-toodete bränd, mis kombineerib seksikuse, kelmikuse ja mugavuse. Kaasaegsed ja luksuslikud tooted peegeldavad disaineri Eesti päritolu ja Skandinaavialikku minimalismi.

Kristiina Suspender Top, uurimuse all olev toode, tuli esimest korda turule sügis/talv 2014 kollektsioonis ning on mõningate modifikatsioonidega olnud jätkuvalt tootmises. Uurimuse ajendiks on disaineri soov vahetada seni kasutatava kanga uue vastu.

Praegu kasutusel olev kangas (Kangas 1) on kuluam kui alternatiivsed kangad (Kangas 2, Kangas 3). Kuigi kulu on ilmselgelt oluline faktor otsuse langetamisel, keskendub uurimus kanga omadustele ja kvaliteedile. Uurimus püüab leida vastust küsimusele, kas on võimalik vahetada kangast hästi müüval tootel nii, et toote kvaliteet jääks samale tasemele. Vaatluse all on kolm kangast, millest kaks on juba erinevates KSL-i kollektsioonides kasutusel (Kangas 1, Kangas 3) ja kolmas on potentsiaalne uus kangas (Kangas 3).

Lõputöös on kombineeritud teoreetiline ja empiiriline uurimus. Mõistmaks klientide vajadusi ja ootusi toodetele, selleks viiakse intervjuu vormis läbi kliendiuuringud. Lisaks hindasid intervjuueeritavad uurimuse teises osas kolme uurimuse all olevat kangast. Käesolevas uurimuses on oluline rõhuasetus subjektiivsel uurimusel ja hindamisel. Sealjuures on see toetatud objektiivsete laboratoorsete testimistega ja teoreetilise analüüsiga.

Käesoleva lõputöö struktuur on järgnev: esmalt on defineeritud mõistet kvaliteet, lähtudes erinevatest vaatepunktidest ja aspektidest. Antud uurimuses mõistetakse kvaliteeti eelkõige toote, tootje ja kliendi seisukohalt. *Loungewear* toode on argine ja mugav riietuse, mida kantakse eelkõige kodus. Mõiste tähenduse täpsemaks määratlemiseks on kasutatud kliendiuurimust, mis pöörab erilist tähelepanu kliendi nõudmistele. Kliendid ootavad, et toode oleks eelkõige esteetilise välisilmega ja mugava istuvusega. Lisaks sellele peab toode olema vastupidav, funktsionaalne ja valmistatud heast kangast.

Järgmises kliendiuurimuse etapis palutakse klientidel kirjeldada täpsemalt oma ootusi *loungewear* toote kangastele. Intervjueeritavatel palutakse kirjeldada soovitud ja soovimatuid kangaomadusi. Subjektiivsete vajaduste põhjal on koostatud kliendiootuste spetsifikatsioonid kangaste omaduste kohta. Küsitluse põhjal on kõige soovitud kanga omadused Kristiina Suspender Top-i jaoks: esteetiline välisilme – hea välimusega kangas; vastupidavus – elastne kangas, millele ei teki pillingut; mugavus – pehme, kerge, hingav ja veniv kangas, mis tekitab nahal hea tunde, seega pole kare, kraapiv või torkiv; hea istuvus – veniv ja kerge kangas; ja funktsionaalsus – elastne kangas.

Teine peatükk keskendub olulisimatele kanga omadustele, mis toodi välja kliendiuurimuses. Käesolevas töös on kasutatud nii objektiivset kui subjektiivset kangaste testimist – seetõttu selgitatakse mõlema olemust. Ülevaade antakse teooria kohta, mis puudutab kanga koostist, kaalu ja struktuuri. Lisaks selgitatakse venivust, elastsust, vastupanu pillingu ja tunnet kanga käega katsumisel, testimise läbiviimise tingimusi ja protsessi ning testimistulemuste hindamist.

Kolmandas peatükis kirjeldatakse ja analüüsitakse kolme uurimuse all oleva kanga omadusi, rakendades eelmises peatükis selgitatud teooriat. Kirjeldatud on kangaste kaalu, kiulist koostist ja struktuuri, mis toetub kangatootjatelt saadud andmetele ja teoreetilisele analüüsile. Välja on toodud laboratoorsete testimiste tulemused venivuse, elastsuse ja pillingu vastupanuvõime kohta. Mehaaniliste ja objektiivselt mõõdetavate omaduste kõrval on uuritud ka subjektiivseid omadusi. Selleks hindasid kliendiuurimuses osalejad kolme uurimuse all oleva kanga omadusi: välisilmet, tunnet kanga puudutamisel, venivust, elastsust, kaalu, paksust ja hingavust.

Erinevate meetodite abil kogutud andmete põhjal on koostatud kolme uurimuse all oleva kanga spetsifikatsioonid. Kliendi ootuste spetsifikatsioonid *loungewear* toodetele on võrreldud iga kanga spetsifikatsiooniga. Eesmärk on kirjeldada ja analüüsida kolme uurimuse all olevat kangast Kristiina Suspender Top-i jaoks, mille põhjal saab KSL langetada otsuse kanga valikuks.

Kangas 1 täidab paljud kliendi ootused, kuivõrd on tegemist väga pehme, kerge ja hingava kangaga, mis on suurepärase venivuse ja elastsuse näitajatega. Kanga puuduseks on selle kortsuvus ja kehvad tulemused pillingu testimisel. Kuigi kangas tundub naha vastal äärmiselt meeldivana, võib kliendi elevus selle suhtes kiirest vaibuda, kui pilling hakkab ilmuma juba paari kandmiskorra järel.

Kangas 2 on kõige sobivam kangas Kristiina Suspender Top-i jaoks, kuivõrd see täidab kliendi ootused esteetilise välisilme, vastupidavuse, mugavuse ja istuvuse suhtes. Kuigi kangas on teistega võrreldes veidi karedam, jäigem ja raskem, on siiski tegemist pehme, kerge, hästi hingava, väga hea venivuse ja elastsuse ning pillingule vastupidava kangaga.

Kangas 3 täidab kliendi ootused: kangas on väga pehme, kerge, hingav ja tundub naha vastas meeldiv. Sellel on hea venivus ja elastsus. Kangas on teadaolevalt töödeldud pillinguvastase töötlusega, kuid pillingule vastupidavuse testimisel sai kangas väga kehvad tulemused. Käesoleva uurimuse läbiviija soovitab ettevõttel kontrollida, kas testimiseks anti õige kangas, mis on töödeldud pillinguvastase töötlusega.

Üldised soovitused KSL-ile tootekvaliteedi tõstmiseks:

- kontrollida pisteliselt tellitud kangaid, tootmisettevõtet ja kangatarnijaid, et tagada kangaste kvaliteet;
- valmistada kõikidest uurimuse all olevatest kangastest tootenäidised, et sooritada nendega kandmistestid;
- võrrelda tooteid konkurentide toodetega;
- kasutada rohkem kangaid, mida on töödeldud pillinguvastase töötlusega või mida saab hõlpsasti hooldada.

Uurimuse piirangud ja tuleviku perspektiivid

Uurimuse protsessi saaks täiustama enamate andmete kogumisega kliendiuurimuses. KSL on rahvusvaheline ettevõtte, mistõttu võiks kaasata intervjueeritavaid erinevatest kultuuridest ja riikidest. Sealjuures võiks tõsta intervjueeritavate arvu, et luua tugevam andmebaas. Kliendiuurimuses võiks kasutusele võtta hindamisskaala, et lihtsustada subjektiivset hindamist nii intervjueeritavate kui analüüsi protsessi jaoks.

Nimetatud kitsaskohtade kõrvaldamisel saab uurimismeetodit kasutada tuleviku uurimisprojektide tarbeks. Käesolev uurimus põimib endas subjektiivsed kliendi vaatepunktid objektiivsete laboratoorsete testimistega, mis teeb sellest huvitava lähenemise toote kvaliteedi hindamiseks mitmedimensionaalsest vaatepunktist lähtudes. Uurimus kätkeb laia vaatenurka tekstiiltoodete kvaliteedile, mistõttu võib see olla kasulik meetod tekstiiliettevõtetele kanga kvaliteedi hindamiseks ja selle parendamiseks.

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APPENDIX

Appendix 1. The Customer of KSL

Website customer, female	Boutique customer, female	Website customer, male
Works in the creative industries	Has her own business; works in a corporate environment; is a stay at home mother	Works in creative/ digital/start-up
Lives in a capital	Lives in a capital	Lives in a capital
Visual aesthetics are important to her	Into her appearance	Into visual
Tech savvy	Quite tech savvy	Very tech savvy
Likes to travel	Likes to travel	Likes to travel
Adventurous	More traditional	Adventurous
Dresses for herself	Buys lingerie to seduce	Buys lingerie for his girlfriend/wife mostly for a special occasion
Likes functional, clean & minimal pieces with a twist	Likes items that look and are luxurious	Likes to discover new
Into cool young brands - ACNE	Into lux fashion, lounge and lingerie brands	Reads GQ, Monocle, Wired
Reads Elle, Grazia, LOVE, Pop, Cereal, Kinfolk, Monocle, Apartamento	Reads Elle, Grazia, Vogue, Harpers Bazaar, InStyle, Health&Fitness Magazines	

Appendix 2. Functionality of the Product.

Appendix 2.1

Name: Kriss, the Founder and Designer of KSL

1. Who is the customer of Kristiina Suspender Top?

Women, ideally 25-35. Is inherently curious.

2. What are the occasions to wear this product?

It can be worn at work under a skirt. Or on Sunday in a café on top of jeans. It is a multifunctional product. The top is also reversible – the keyhole detail can be worn in the front or at the back. There are many ways: 1) the product can be used with suspender ends or 2) as a everyday jersey top that has been made more interesting. Product is made of jersey, however, it has a sexier twist than seen before in our branch.

3. What is the main function/purpose of the product? What are the extra functions?

It can be worn instead of the common jersey top, it is sexier. It is multifunctional: suspender ends can be used or not, the puff is removable. The extra functions depend on the discovery capability of the wearer.

4. What are the basic requirements of the product?

The fabric needs to be good. Stretchy enough, so that it is possible to sit and the suspender ends stay closed. The product requires a quality fabric.

5. What determines the quality of the product?

The fabric, how it is sewn together and the fit of the product.

6. What role does the fabric play in the quality of the product?

Fabric plays a huge role. Needs to act well to wash. Elastic, not dragging out. Fabric is essential. The seams have to be good as well, of course. Fabric needs to be from a higher price class – there are no compromises made here.

Appendix 2.2

Name: Riti, the Marketing and Press Assistant at KSL

1. Who is the customer of Kristiina Suspender Top?

A woman in her mid twenties mid thirties who has an active lifestyle and expects her clothes to be fashionable and versatile.

2. What are the occasions to wear this product?

Kristiina Top can be worn in the bedroom, as a loungewear item or as a regular (outerwear) top.

3. What is the main function/purpose of the product? What are the extra functions?

Kristiina functions as a suspender top. As it is a versatile product one can wear it as well as a regular top. It's light, cosy and feels like second skin.

4. What are the basic requirements of the product?

Wearability, functionality, comfort.

5. What makes it special?

That it is reversible and that you can wear it with or without the puff detail.

6. What determines the quality of the product?

It's the super soft fabric, the immaculate craftsmanship and the clever little details.

7. What role does the fabric play in the quality of the product?

It plays a huge part. It looks and feels good. It allows the product to stretch without allowing it to drag out. The used fabric allows the customer to get maximum wear out of the product.

Appendix 3. Customer Inquiry. Expectations of the Loungewear.

Appendix 3.1

Name: Kriss, the Founder and Designer of KSL

1. What are your requirements of the lounge-wear?

Lounge-wear is home clothing that looks better. During the economy crisis people started staying more at home and wanted to look good there too. Fashion is becoming more casual. They are created to be worn from the living room to bed. Loungewear pieces have become more wearable out of house as well. The fabric needs to be comfortable, so does the cut of the product. It needs to fit well. Cosy to lie on the couch .

2. How important is the aesthetics of the product?

Unfortunately is this aspect underdeveloped. There are a lot of greys and beige colours. There is not enough product development involved, the cuts are too alike. For many brands, it is an opportunity to expand their selection. Younger brands bring new to the table: patterns and simple cuts.

3. How important is the durability of the product?

These products are not bought that often, therefore very important. People investment into the clothes that others see more.

4. How important is comfort of the product?

Very important, design should head up with comfort. Stretchy fabric makes it more comfortable to wear. Also fabrics from natural fibres, organic, skin-friendly.

5. What should be the terms care of the product?

Easy to take care of. Nobody bothers to take products to the chemical wash.

6. What is the relation between the price of the product and quality of it?

If the product is cheap, it can not be expected it to maintain the appearance for long.

7. What should the fabric of loungewear to be alike?

Soft, stretchy and breathable. Don't want to have polyester on the skin.

8. How durable should it be against friction/ pilling?

Important. There is a lot of rubbing: against the coach, against other person. Pilling shouldn't appear.

9. How breathable should it be?

Highly breathable.

Appendix 3.2

Name: Riti, the Marketing and Press Assistant at KSL

1. What are your requirements of the lounge-wear?

I prefer pieces that are comfortable, easy to take care of and look good outside of home as well.

2. How important is the aesthetics of the product?

Quite important as I usually prefer to wear the pieces outside of home environment. I prefer them to have a fashionable twist or interesting details.

3. How important is the durability of the product?

Depends on the particular piece, if I've spent more money on it I expect it to last if it's from a high-street store it is not that important.

4. How important is comfort of the product?

Super important as that is the whole point of the concept.

5. How important are the terms of care of the product?

They need to be machine washable and should not wrinkle easily.

6. How important is price of the product?

Depends on the item, the material it is made of and what would be the particular use (would I wear with my everyday pieces).

7. How important is maintenance of the appearance during time of the product?

If it's a piece I've invested in I expect it to last especially if I have followed all the care instructions.

8. What should the fabric of loungewear to be like?

On one hand I prefer natural fabrics that have a bit of stretch to it and that are easy to take care of and on the other hand I love materials like cashmere.

9. How should it feel on the skin?

Soft in all senses. It definitely needs to feel like second skin.

10. How elastic should the fabric be?

It needs to have a bit of stretch do it as it makes the clothing comfortable and not restrictive.

11. How durable should it be against friction/ pilling?

Ideally nothing would ever pill but in reality we all end up accidentally rubbing something against our clothes and the pills are easy to come.

12. How breathable should it be?

I prefer to wear natural fabrics which all offer relatively good breathability.

Appendix 3.3

Name: Ilona, the Production Manager

1. What are your requirements of the loungewear?

Loungewear has to be comfortable. This is the main requirement.

2. How important is the aesthetics of the product?

For me, the colour of the product is the most important. If I don't like the colour, then I don't give it a second look. If I like the colour, I try it on. I need to like how it fits to me.

3. How important is the durability of the product?

I don't really think about it.

4. How important is the comfort of the product?

If I like the product, then I just buy it, I don't think about it too much.

5. How important are the terms of care of the product?

I know what I need to hand wash, others I wash in 40 degrees.

6. How important are the terms of care of the product?

If the product fits well, then the price isn't that important.

7. How important is the maintenance of the appearance during time of the product?

If it doesn't last even one wash, then it's sad. But after the wash nobody asks how you have washed it or taken care of it. Everything can happen.

8. What should the fabric of loungewear to be alike?

If it looks and feels good, then I don't have any more criteria.

9. How should it feel on the skin?

Soft, I mean you can feel it if its itchy only by touching it. I wouldn't like full synthetics.

10. How elastic should the fabric be?

Depends entirely of the producer.

11. How durable should it be against friction/ pilling?

At least couple of washes.

12. How breathable should it be?

Sufficiently, don't want all synthetics. At the same time, some products cannot even be all cotton. Maybe 50/50.

Appendix 3.4

Name: Kirki, the Owner of the shop NB

1. What is lounge-wear?

I think it's the same as for Kriss. It is, so to say, in between two worlds: between lingerie and ready-to-wear. You can wear your lingerie in a way that people can see it. It is a new concept for Estonians. At the same time, in Japan where Kriss sells very well, the habit of wearing corsets on top of garments isn't anything new. Estonians who haven't worn Kriss's products before always ask what is the appropriate way to wear them. For example, it is thought that the lace body is to be worn only in the bedroom. And then I explain that you could also wear it in the office like this, at party like this, at lounge like this.. and then the customer realises that it can be worn anywhere. Basically, lounge-wear is in between lingerie and garments.

2. What role does the fabric play in the quality of the product?

I think that fabric plays the essential role. I am not a seamstress, I can only see it through the eyes of the customers. There are the seams and then there is the fabric, right? But fabric is essential. If it starts to pill right away, it is not good, if it drags out, it is not good. It is important that it's easy to take care of. I don't only talk about Kriss's products. If you buy a dress or a jacket and it requires a chemical wash, then it is awfully tiresome. Would like to throw it to the washing machine. Though one should hand wash Kriss's products, I still do it in the machine. With the hand wash programme though. Don't have time to hand wash. And then I can see clearly which products really last.

3. How important is the aesthetics when you purchase a product?

Most important thing for women, I think. I am convinced that women buy with their eyes. An example from another world – creams/lotions. It might be a super good cream but it won't be bought unless it's in a beautiful package. Unless your girlfriend has told you that it works wonders. But women observe with eyes, if they like it, they try it on. Yes, appearance is crucial.

4. And thereby the appearance of the fabric?

Appearance of the fabric, of course, plays a large part of it. One needs to like the fabric, it needs to feel good on the skin. I can give an example, Kriss's Glitter Top is the only product that's fabric has

gotten negative feedback from the customers. Yes, it is rough, it is not pleasant.

5. What about from the inside?

It is not much better from inside either. If you take this [Kristiina Suspender Top], tell me, which one of those would you like to wear on your skin? Glitter Top looks beautiful but it's stiff, hard. The skin of a woman is soft. One could wear a shirt underneath but mostly it is to be worn on the bare skin. Well, it is not that pleasant. If you have a choice, then you take the softer one. In the world of lingerie and loungewear is the pleasant feel of the fabric on the skin essential.

I think many people draw attention to the anti-pilling treatment. Some of the Kriss's product have that too.

6. We have talked about the durability of the products already. But could you add something more specific?

Well, I think it's pretty individual. It depends how often one wears a product, how often is it washed. It is determined by how the product is worn – on top or underneath other clothing. Difficult to say. Of course, would like to say that it should last for 3 years. But if you wear it every day, wash it every day, it is just not possible. I believe that there are not many people who wear a product only once. Especially when it comes to more casual pieces. I understand that it's a different case with fancy dresses, then it's maybe worn only once. When it comes to lingerie, then it's unavoidable not to wash it after every use. Knickers for sure. When it has been a long and busy day then the suspender tops need to be washed right away too.

7. How does the fabric determine comfort of the product?

A stretchy fabric makes the product more comfortable. Then the product fits better, it's cosier to move in it, it doesn't pinch, has enough give when you sit down. In that sense, the stretchy fabrics are nice, if it's a tight silhouette.

Of course, the terms of taking care of it determine comfort. I believe that taking care of the product needs to be comfortable for women. Lets be honest here, we have so too many errands to run to spend extra time to hand wash or take the products to chemical wash. It is not comfortable.

As I have stated before, fabric needs to be pleasant on the skin. If it's hard or pricks, then it's not

comfortable.

8. What should be the relation between the price and the quality of the product?

The price has an effect on the purchase. Some of our clients think that the lingerie by KSL is very beautiful and would really like to buy it, but it's way too expensive, cannot afford it. Kriss has expressed herself clearly that it is an exclusive brand, not for everybody. It is not sold in the department stores. It is sold in the boutiques. At the same time, the customers who have bought it once, buy it again because they are satisfied. The only complaint has been, that there are not enough new designs.

The great advantage of KSL is the multifunctionality of the products. For example, the lace body is a rather expensive purchase. But it's not something one would wear only once a month to show to the husband/ boyfriend/ lover. And most of the time just hangs in the closet, just an expensive piece. No, one can wear it anywhere. And then the price justifies itself. Of course, it's made of quality fabrics, it's a designer item, but for women the multifunctionality is an argument. Who wants to buy a 200 euro item that can not be worn in different places? Unless it's a fancy dress. A lace body isn't a product that one would like to spend too much money on. But if it can be worn in public too, it seems like an excellent idea. It depends solely on one's fantasy how to combine it. One can wear it on top of jeans, well, to take out the trash. Or wear it in the office. I have also brought an example, it is very cold in here and a lace body doesn't give much warmth, it's more like a beautiful piece. But I have worn a black turtle-neck top underneath. And the lace makes it look feminine – great! When it's worn in the bedroom, nothing needs to be underneath. The fact that it can be worn in so many ways justifies the price for the customers.

9. How should the product maintain its appearance during the usage?

I think it's the same criteria as for any other product. Nobody wants the colour to fade away nor the product to drag out. I have an orange suspender top from the early years of KSL. Well, this obviously dragged out for now, and the colour is not the same. In that sense, Kriss is so much more aware of the importance of the fabric and has grown a lot.

10. What are your expectations of elongation and elasticity?

It is individual. For me it's important for the product to be elastic. Everybody has a different body

shape, even the muscles are different. The more elastic product follows the body's shape of the person and looks better.

On the other hand, it is not that important when it comes to lingerie. Breast needs support and it is good if bra can offer it. Silvia Lace Bra is pretty supportive, it doesn't contain elastane. The Emily collection is stretchier, it requires so called "self supporting breasts" otherwise it might not look that good. But I don't know it that well, haven't seen.

11. How breathable should the fabric be?

I don't know what do you mean by that. It certainly needs to breathe, otherwise it makes one sweat and this is uncomfortable. Does anyone even think of it in the store? I mean when buying lingerie. It has been more talked about when it comes to shoes or garments. When I choose a product, it has to be pleasant and soft, stretchy if I want to wear it at home. Skin recognises if it's synthetics or not, without the need to look at the label. But I don't believe that anybody thinks of the breathability.

Appendix 3.5

Name: Inge, the Manager of Logistics at KSL

1. What is loungewear?

For me it means lingerie and home clothing together, combined. In addition, clothes one can wear out of house too. It has many functions. These days it is so easy to wear.

2. What are the requirements of loungewear?

Loungewear has to be a quality product. Not too alluring, it needs to stay decant.

3. What does the quality mean in this context?

The product needs to be made of quality fabrics, has to have a quality treatment, quality details and so on.

4. How important is the aesthetics of the product?

Very important, I have to say. It needs to differ from similar products on the market, needs to be memorable. The fabric as well. One can tell just by looking at the fabric if it's a quality fabric. Fabric should not pill, especially the knitted fabrics. Threads shouldn't get out. The cheaper the fabric, the lower the quality. Even by just comparing them visually.

5. What are your expectations of the durability? How long should the life of a product be?

Well, if the product is taken care of well, then it should last longer. Sometimes the product falls apart while taking it out of the package; or isn't presentable after first wash. The product should stay in a good condition for a rather long time. It shouldn't drag out, details should stay attached. If a quality fabric has been used, then the product should maintain it's appearance. If you take good care of it, even if you wear it often, quality product maintains the good appearance.

6. You brought up the terms of care? What should they be?

Either hand wash or in the washing machine in the bag with 30 degrees. Carefully, not to throw it into boiling water with everything together.

7. What are your expectations of comfort?

It has to be comfortable. Soft knitted fabric that doesn't scratch. Should be wearable at home as lingerie and outside too. It should feel like you're wearing nothing.

8. How does the price affect the choice of the product?

Lets say it like that – over the time I have realised that there are no free lunches. I have bought products with a good price that last for a long time, but there are less and less of these. Everything seems to be made only to wear it once.

And the more expensive the product, the more one loves it, takes care of it, because it has been paid for. And secondly, one has higher expectations of quality. For example, it can be taken back to the store.

9. How should the fabric feel on the skin?

It should feel really good. I walk around the shops and always touch everything. My husband gets already anxious, and asks whether I need to touch everything, can't I see. But yes, I need to feel the fabrics. Often I turn the product inside out to see and feel how it has been treated from inside. It's already an automatic reflex. And it is easy to recognise it. It is rougher. Sometimes the fabric is rough from outside and softer from the side that is against the skin. But fabric should be pleasant all over. The outside touches the skin too.

10. How stretchy should the fabric be if we are talking about loungewear?

It shouldn't be too stiff. Should contain elastane to be more comfortable and not to drag out. Nowadays, the fabrics are so in high quality, they can contain elastane.

11. Do you find breathability important when purchasing a product?

Yes, more and more. Especially when purchasing sportswear. But also with all products that are close to the skin – lingerie, nightwear. These should let the skin to breathe.

This aspect is recognisable when wearing the product. It is difficult to judge in the store. Then one really needs to be a specialist. But everybody can feel if something is good or not. And of coarse, one can check the composition of the fabric.

12. How important is the resistance to pilling?

Now there are many products made so, that the fabric doesn't pill. I have worn one black top for about a year, and it doesn't have any pills on it. One can get tired of the product itself though. But the options these days are incredible. I wouldn't know how to understand which fabric has had antipilling treatment when just looking the products in the store. I haven't seen it on the product labels either.

I know that Kriss is using this kind of fabric. It is written on the document of the fabric. But I'm not sure if it's written on the labels of the products or not.

We have a black jersey with antipilling treatment and it looks really beautiful. But the white one with the same treatment has turned a bit yellow. It is not bright white. By the way it gets the antipilling treatment in Lithuania. We have had some problems with it too. We have gotten a large patch of fabric that has the documents with it – should be the right one. But it turned out to be a wrong fabric. It felt different just by touching it. We found it out by ourselves and sent it back.

I have to admit, that I really like how strict Kriss is about the fabrics. It would be possible to use fabrics that cost half the price but it's not the case. She has sent back the whole patches if it hasn't been satisfying. The sample products have been made, tried on and if it doesn't feel good, then it's a no go. There have been incidents like this before. It needs to be a high quality fabric and last for long time.

13. Would you like to add something?

My generation has worn knits in the whole youth (as lingerie). Then for a while it wasn't used anymore, because everybody wanted something else. Now the knits and wool makes a comeback. They look good and the quality is high.

14. I know you have worked in Marat in your youth? Can you compare the situation back then and now?

I was young when I worked there and it was for a short period of time.

But for example, the ribbed jersey that Kriss is using. Lingerie was made of it back then as well. With the difference that this lingerie was exported to Finland. Only the surplus was left here, in

Estonia. The exported ones were high quality products. More simple ones stayed in Estonia and these were worn on daily basis. This is the reason why people didn't want knitted lingerie anymore. Everybody wanted lace and frills and so on. Now it's a growing trend again – it seems like every woman has a soft knitted top in the closet. Kriss performed a survey on this topic and found out that every woman confessed to have knitted lingerie.

Appendix 3.6

Interviewee A.

1. What is loungewear?

To be honest, I didn't know before you asked me to participate in this inquiry. I looked it up. Well, basically I know what it is but didn't know that this term is being used. I know now that loungewear is the clothing worn at home.

2. Only at home or is it appropriate to wear it elsewhere too?

I think it depends of how they look. Material and the colour of it. If they are too transparent, then they are not suitable for home clothing. Depends on the work environment, wouldn't wear sweatpants in the office. Somewhere else it might be okay.

3. What are your requirements of loungewear?

Comfort. It depends on the taste but I guess some people would like to look good at home too. Some other don't care about it that much. I bought myself recently a new pair of trousers and feel myself much better at home. When someone comes over for a visit, I wouldn't need use an excuse, oh sorry, I'm in my home clothes. I could also go out in my new trousers, it wouldn't look awkward. They look cool.

If I think of those trousers. They are made of light material. It seemed, at first, that they are too transparent but not when I have them on. Well, some people think that leggings are trousers too, no, if I can see through, then those are tights!

Loungewear should look good and be super comfortable. Made of cotton to make them feel good on the skin. Not too tight but not too wide. Colour depends on the taste, so does the pattern. There should be some pockets. And a nice pattern.

4. How stretchy should the fabric of the product be?

Depends on the product. And on the quality. Knitted fabrics have good stretch but it shouldn't be too tight. Should be made of cotton. Sleeker fabrics are uncomfortable – they seem to tangle around the body. Should be soft and good, not itchy.

5. How important is the durability of a product?

Very important. It has a relation with the price. This being said, the price doesn't always determine the quality of the product. Often it's like a lottery. Of course, would like a good quality but cannot always afford it. Would like to have a product for years to wear. Wouldn't like to have something for only a month.

6. How important it is the product to be fashionable?

It's getting more important. Don't want to wear something from the 90's at home. I want to feel myself well at home. It needs to be a perfect marriage between comfort and fashion.

7. To what extent do the terms of care determine your purchase?

I don't really look at those labels. I throw everything to the washing machine. Except the silk blouses. Other than that, everything goes together. Especially the things I wear at home, especially if these aren't that expensive. Maybe that's why I don't take so much care of them.

8. If it was more expensive, would you have a different attitude?

Maybe I would check more what the label says how to take care of it. All products should be machine washable though.

9. How should the product maintain its appearance during the use?

Ideally, it should maintain the original shape and appearance. But it's not possible. It still depends on the human factor: how well the product is taken care of. I know my mother washes all of the delicate products by hand. She never throws little shirts or blouses to the machine. I know I should do the same, but just cannot be bothered. And then I just need to buy stuff more often.

10. How should the fabric feel on the skin?

Soft and comfortable. Cotton is usually soft. Wait, sometimes is cotton more rough too... Wouldn't like the fabric to scratch my skin, like the Soviet woollen blankets did. It needs to feel nice but also have some stretch to it to make it more comfortable.

11. How resistant should the fabric against pilling?

Of coarse, it shouldn't pill. But depends on the quality of the fabric. I don't know if it would pill when I purchase a product. Some fabrics don't seem to pill. I guess it a matter of the fabric producer. If it is for the fast fashion and needs to be cheaper, the lower quality fabric is being used.

I could also adapt the attitude to buy less but higher quality clothing. But no, I want many garments. And among those there are some pieces that don't last for that long. Some cheap ones last for a long period of time. Again, it's a lottery.

12. How important is the breathability of the fabric for you?

Luckily I'm not the sweaty type. I know that some people have many problems with it. I don't. I don't know how to evaluate the fabrics professionally, haven't read much about it. So I base my answer on my experience. I don't know the compositions of the fabrics. I guess cotton is better. I don't want the product to make me sweat. This, however, is more about the choice of the deodorant. Oh, there is one material that is really bad. Some underlining of the jackets are made of it and it seems to make me sweat more. But this it the only one that I have noticed.

It becomes more important when purchasing sportswear. At home in your loungewear you don't really sweat that much.

Appendix 3.7

Interviewee B.

1. What does the term loungewear mean to you?

Clothing that I feel myself comfortable in. It should be easy to wear. Should stay nice for a longer time – shouldn't drag out.

I would wear it at home, going out to a shop or when I play disc golf in the woods. Should be comfortable and not too smart.

2. What role does the fabric play here?

Very important role, the fabric needs to be pleasant on the skin. Shouldn't pinch nor scratch. Needs to fit well and keep the shape. Needs to be super soft, especially from the inside.

3. How important is the aesthetics of the product?

It shouldn't be too tight. Needs to fit well. Colour is important to me. And a combination of comfort and feminine style.

4. How important is the durability?

I wear loungewear out of home too. When I go hiking for example, so I require functional elements and the durability to the weather conditions. It shouldn't drag out – I can not stand it. I have pair of trousers from Zara that are comfortable and look cool, could wear them at home and in public, but the butt drags out after a day of wearing.

The best products maintain their appearance for years. Here, however, the price of the product doesn't matter that much. For a reasonable price you can get something that lasts for a long time, and an expensive product lasts for one season only.

5. Can you, please, clarify the relation between the price and quality of the product?

It is believed that the more expensive product has a better quality but it's not always the case. I can say that there is a proportional relation when it comes to leather shoes – expensive ones tend to be better. But with garments it can be so so. But experience comes in handy, I have so many clothes

that I know what is a quality fabric by touching it in the store.

6. How stretchy should the product be?

It depends on the product. I'm looking for a long slip now – this should be nice and stretchy. And as I have said, I don't like it when clothing drags out, so they need to be elastic enough.

7. How resistant should the fabric be against pills?

I can't stand pills. Unfortunately I don't know how to predict it or choose the fabric that doesn't pill.

8. How do you evaluate the breathability of the fabric when buying a product?

I don't pay too much attention to it. It goes hand in hand how the fabric feels on the skin. The rougher fabrics don't seem to breath that much.

Appendix 3.8

Interviewee C.

1. What are your expectations of loungewear?

Loungewear should be soft, wide enough and pretty at the same time. I don't like the garments that are too short.

2. What are your expectations of fabric?

Fabric should be light, it shouldn't pill and the stains should be easy to remove. The fabrics shouldn't be too thin. I have bigger boobs and they need some support, it doesn't look that good if the fabric is too thin. I wouldn't like to wear a bra underneath my home clothes.

3. How durable should a product be?

By the way, I have a thing with my home clothes – I forgive them less. Loungewear should last for a long time. I have higher quality expectations than of outer clothes.

4. Can you explain what do you mean by the quality expectations?

It shouldn't be rough. It should be extremely soft. I have the softest blanket and it elevates my mood!

5. Do you think of the breathability of the fabric when you purchase a product?

I do, but later. It is horrible when your nightwear makes you sweat. During daytime it's not such a big problem.

6. What is the relation between price and quality of the product?

I get only the products that I really like. I have been disappointed both in expensive and cheaper products.

7. What should the terms of care be?

I wash some items by hand, lingerie for example. And I put everything to the washing machine in

the hand wash programme. My clothes don't get that dirty anyway.

Appendix 3.9

Interviewee D.

1. What are your expectations of loungewear?

Loungewear should be soft, stretchy and caress my skin. And wide enough, so that it wouldn't pinch. It has to be pretty and feminine too. And shouldn't build static electricity. I don't like nightwear that is too short. The seam shouldn't be in the middle but on the side – otherwise it is uncomfortable.

2. What are your expectations of fabric?

The fabric has to be soft. And it would be excellent if it would dry fast.

3. How durable should a product be?

It should stay beautiful for rather long time. I have had a pair of trousers for 5 years that still looks good. I don't buy pyjamas that often cause I don't like to try them on in the store that much but wouldn't buy it without trying them on. I buy pyjama trousers every second or third month. Yes, I like pyjamas. I also wear them during daytime. Write it down, if you work at home and can stay in your pyjama trousers, it is awfully easy to gain 5,5 kilos. All of the comfort aspects are incorporated here – has a lot of give, soft and comfortable (laughs). Pyjama should be presentable too, so that I don't need to change when I have guests over.

4. Do you think of the breathability of the fabric when you purchase a product?

Nightwear shouldn't make you sweat. It is really unpleasant.

5. What is the relation between price and quality of the product?

I want the quality products, so I rather get them during sales. I really like the brand Etam that makes the most comfortable, nicest and lightest pyjamas. And I love the lingerie that Calvin Klein makes – beautiful cuts and so comfortable. However, higher price doesn't always mean that it is nice to wear.

6. What should the terms of care be?

I wash everything by hand or in the hand wash programme in the machine. It is tiresome, cause

need to wash them so often. Lingerie every day and pyjamas every second or third day.

Appendix 3.10

Interviewee E.

1. What does the term loungewear mean to you?

I think it's a sexy home-wear that can be worn out of home too. I wear my Rebecca Body mostly as a regular shirt. I like it so much that it would be sad to wear it only at home. Design is very important here. Wouldn't buy a casual top for this price. It's about comfort combined with cool design. There has to be this quirky detail that makes it purchase worthy.

2. How important is thereby the fabric?

If you buy something that is more expensive, you expect the fabric to be exquisite. Good fabric means that it feels like a quality fabric when touched. And that it would last for more than only one season. You can feel it by just touching it.

3. What determines the comfort?

It needs to look and feel good. The Rebecca Body that I have is comfortable cause it doesn't have any buttons nor zippers. I can just slip in. And it hasn't lost its shape.

4. What are your expectations on terms of care?

If it's a luxury piece then I'm willing to wash it by hand or take it to chemical wash. Would be good to be able to wash items in the washing machine. Especially the ones you need to wash more often.

5. Do you consider the breathability of the fabric when purchasing a product?

I think it's more subconscious. I can feel it when I touch the fabric. But I don't think about it every time.

Appendix 3.11

Interviewee F.

1. What does the term loungewear mean to you?

It is lingerie that I can wear at home but not in a public place. Actually, I have worn a body by KSL also in public. It has to be more of a special occasion for me. Loungewear seems to be rather intimate clothing. But could be combined with something to wear it in public too. They need to be multifunctional, allow you to wear it in many ways.

2. How important is thereby the fabric?

The older I get, the more emphasis I put on it. As a student one doesn't have that much money. If you just want something cheap, that might drag out in couple of months and isn't presentable anymore, then you go to H&M. I have realised that it makes sense to invest into the products. And pay attention to the materials being used. Then you get something that lasts longer. Not to wear it only once.

3. What determines the comfort?

It needs to look and feel good on me. If it look good on the hanger, well, it doesn't help you much. Stretch is good. But then it needs to pull back, to be elastic enough. It is not aesthetic when the elbows or knees are dragged out. It needs to keep the original shape. Some products do.

4. What are your expectations on terms of care?

Products should be washable in the machine. Though, I have to say, I do wash silk blouses by hand. But intimates require such frequent wash, that should be possible to wash them in the machine. Talking about the ideals – the fabric should dry fast, in couple of hours.

5. Do you consider the breathability of the fabric when purchasing a product?

Would like the fabric to be breathable. It is uncomfortable if it doesn't. I prefer cotton cause I know it is a breathable fabric.

6. What are your requirement on pilling resistance?

My mother has taught me to look at the composition labels. I never buy acrylic cause I know it will pill after couple of times wearing it.

Appendix 3.12

Interviewee G.

1. What does loungewear mean?

Clothes you wear when you don't need to meet anybody else. You just stay at home with your partner, for example. Most important thing is that you feel comfortable in it. Nothing has any friction, nothing is too tight. It's being naked, but well, not being naked. So, maybe you'd like to be naked, but it's too cold in some countries, so you need to wear something. Don't want to wear anything that abstracts the freedom of your body.

They should be affordable too. Don't want to spend too much on it cause I'm wearing it only at home. Doesn't matter that much how it looks. At the same time, when you get together with somebody, you don't want to look like a fool. So you wanna look a little bit nice.

For me it needs to be comfortable, light. Not too heavy – this is part of being comfortable, I guess. Shouldn't be too warm. And for me, not that expensive. Maybe this is different for men.

If I would buy something like that then I would get something that also looks nice. But it's not that important to me. But if I go out to buy something then rather something I like.

2. How important is the durability of the product for you?

Very important. Always nice if something last for long. If you get a cheap thing it doesn't last for that long. Maybe it has something to do with the price, so if you buy the cheaper one, you kind of expect it to run out really quickly. If its more expensive, you expect it to last longer.

3. Do you take care of it differently if it's more expensive?

No, especially with loungewear, you don't really want to worry about anything. You just want to put it on and roll around. You shouldn't worry about breaking it down.

4. How easy should it be to take care of the product?

Very easy. I don't want to worry about it, as long as possible, and then just through it into the washing machine. No delicate stuff nor special treatment.

5. How should the product maintain its appearance?

Ideally as good as when I bought it. But as I said, I don't expect too much from loungewear myself, for my personal use. Doesn't have to look that nice. Though, what is annoying, is when the products start to lose their shape. If the shape is not there, then I cannot stand that. As long as the shape is the same, I don't care. And I'm not talking about the nice stuff that women wear. For women's wear it is even more important, I believe.

6. How does it need to feel on your skin?

Nice – feels soft, shouldn't itch. Sometimes the labels can be really annoying and itchy on your back. This is probably a real male answer you get from me here - not to itch, to be soft. I mean I have never before realised that fabric can feel cool, this makes me understand that you can feel all of it in a very subtle way. I don't really think about all of those details when I buy something. Maybe also woman's body is more sensitive, your skin is more sensitive. I feel, like how you compare those fabrics, you start to think in a different way, you start to learn the differences and appreciate them. Usually, most of the stuff that is made for men isn't that fine. I have this t- shirt that made me experience this different kind of texture. Male clothing is always made of pretty much the same materials, probably cheaper materials. Of coarse, I'm not from the high-end.

7. Do you ever think how breathable the material should be?

Yeah, but not enough as I have heard recently. I don't really think about it. When I started sporting more, I realised that I sweat more. But this is the stuff I tend to ignore unless someone points it out. I guess I can feel it. Maybe about shoes, but don't really think about it.

8. How pilling resistant should the product be?

Oh, pilling is horrible. I have this one sweater that pills like crazy. It is super annoying and looks so ugly. But as I mentioned earlier, when it comes to loungewear, I don't care that much.

Appendix 4. Customer Inquiry. Comparison of the Fabrics.

Appendix 4.1

Interviewee 1.

1. Describe the appearance of the fabric.

I like Fabric 1 more – it has wider structure. Fabric 2 has tight weft, elasticity pulls it more together. Fabric 3 is beautiful black. Has a gentle shine that makes it more special compared to other jersey. Fabric 1 and 3 both have a slight transparency when stretched. On Fabric 2 you can see the elastic thread more.

2. Describe how does it feel on the skin?

Fabric 1 is super soft, feels the best on the first touch. Fabric 3 seems just as sleek from inside, but Fabric 2 is sleeker from outside. Fabric 3 feels really soft. Fabric 1 feels warmer, more pleasant and sheer than Fabric 2 that is rougher and cooler when touched. Fabric 3 is cooling during summer and warming during winter – has a good thermoregulation.

3. Describe the thickness of the fabric.

Fabric 2 feels the thickest and heaviest. Fabric 1 and 3 and both really lightweight.

4. Describe how stretchy is it.

Fabric 1 is more stable, Fabric 2 is stronger and more elastic. Fabric 3 stretches well. A different jersey was used for the same pattern and it didn't stretch that well.

Appendix 4.2

Interviewee 2.

1. Describe the appearance of the fabric.

Fabric 1 seems light and soft. Fabric 2 has a bit of shine to it. Fabric 3 looks very lightweight.

2. Describe how does it feel on the skin?

Fabric 1 feels super soft, feels like second skin. Fabric 2 is quite soft and light, is stretchy. Fabric 3 is very very soft. Feels really light on skin.

3. Describe the thickness and weight of the fabric.

Fabric 1 is light and stretchy. Fabric 2 is quite light. Fabric 3 seems to be the lightest of them. All of them are thin, seem to be just the same.

4. Describe how stretchy is it.

Fabric 1 is very stretchy, stretches in both ways, so does Fabric 2. Fabric 3 is very stretchy. Fabric 2 seems to have most stretch to it.

Appendix 4.3

Interviewee 3.

1. Describe the appearance of the fabric.

Fabric 1 seems okay, but I have a feeling that it loses its look pretty fast and pills. Fabric 1 seems to be a bit fuzzier than Fabric 2. Fabric 2 is stronger, it maintains its appearance for longer.

Fabric 1 is more mat, Fabric 2 has more elastic threads – it makes it shinier. Fabric 1 is more black, Fabric 2 is lighter colour. Customer would see that too.

2. Describe how does it feel on the skin?

Fabric 1 is soft. Fabric 1 is softer than Fabric 2. I like the Fabric 1 much more – it's more pleasant, softer.

3. Describe the thickness and weight of the fabric.

Fabric 1 is delicate, lightweight. Fabric 2 is not as light as Fabric 1, it is also thicker.

4. Describe how stretchy is it.

Both are stretchy but seems like Fabric 1 elongates more. Fabric 2 has good elasticity.

Fabric 1 elongates much more than Fabric 2: could even buy a size smaller product. Don't know if it's also elastic. Fabric 2 seems to be more elastic.

Appendix 4.4

Interviewee 4.

1. Describe the appearance of the fabric.

Fabric 1 looks beautiful. It has a gentle shine to it. But if it is worn as a product and not stretched out, it doesn't show that much. Both Fabric 1 and Fabric 2 look visually similar. Fabric 2 has a bit of the shine to it too.

2. Describe how does it feel on the skin?

Fabric 1 is this really soft and good fabric. I don't know its composition. Feels like cotton but I guess it's not. It is extremely soft. Fabric 1 feels a bit warmer than Fabric 2 which feels a bit cooler. Maybe because the latter is tighter? Fabric 3 feels like cotton, it is light and soft. Feels fine (sheer). Feels like it has had antipilling treatment. I know from my experience that pills don't create on this fabric. And also – it maintains the same colour, it doesn't bleach out.

3. Describe the thickness and weight of the fabric.

I find Fabric 1 really light too. It's a good quality of this fabric. It feels exquisite as a product. Fabric 2 is a bit thicker. It also feels a bit heavier than Fabric 1. Fabric 3 is really thin and light.

4. Describe how stretchy is it.

Fabric 1 elongates well, and gets back to its original position. It doesn't drag out. If the product is bought in a right size, it will stay as it is. Fabric 1 isn't that stretchy compared to Fabric 2 which seems to have more give. Fabric 2 seems to have tighter weft, feels more elastic – gets right back to its original position. This seems to have the best elasticity. Fabric 3 elongates well and is elastic.

Appendix 4.5

Interviewee 5.

1. Describe the appearance of the fabric.

Fabric 1 – I like the ribbed structure aesthetically and it feels good on the skin. Fabric 1 gets wrinkly. Fabric 2 looks better than Fabric 1, which is too fine, too soft, loses its shape faster. Fabric 2 doesn't get wrinkles, stays better in the shape. Looks like it's a better quality fabric. Has a bit of shine to it. Fabric 3 gets wrinkles too, but less than Fabric 1. Fabric 2 has the best aesthetic look – I like the stripes, the ribbed structure.

2. Describe how does it feel on the skin?

Fabric 1 feels really nice, could be a shirt for example. Fabric 1 feels the softest but wouldn't buy because of the wrinkles. Fabric 2 feels nice on the skin. Fabric 3 feels good on the skin, is really soft, but too shapeless too. Fabric 3 feels the coolest on the skin.

3. Describe the thickness and weight of the fabric.

Fabric 1 is too thin for trousers. Fabric 2 feels better, more stable and heavier compared to Fabric 1. Fabric 3 is light.

4. Describe how stretchy is it.

Fabric 1 is a bit too stretchy for nightwear or trousers. It is really stretchy. And it's elastic too, goes right back to its original shape. Fabric 2 stretches well. Fabric 3 stretches well but not as much as the others.

Appendix 4.6

Interviewee 6.

1. Describe the appearance of the fabric.

Fabric 1 Looks good. Seems a bit fuzzy. Fabric 1 wrinkles more than Fabric 2. Fabric 2 has a more appealing surface, it doesn't wrinkle either. Fabric 3 looks okay, but seems like it wouldn't stay beautiful for long. I wouldn't like to have a product made of it.

2. Describe how does it feel on the skin?

Fabric 1 feels really nice on the skin but wouldn't wear anything from it myself. First of all, it brings out the body-shapes and imperfectnesses too much. Fabric 2 I like more, would like to wear it, feels better on the skin then Fabric 1. Fabric 3 feels good on the skin.

3. Describe the thickness and weight of the fabric.

Fabric 1 is super light and comfortable and nice. Would like to wear it. Would wear it if I would be thinner, then it would be perfect. Fabric 2 is a bit heavier then Fabric 1, but therefore fits better, maintains its shape better. Fabric 3 feels really light.

4. Describe how stretchy is it.

Fabric 1 seems like it would lose its shape in the wash. Well, maybe it wouldn't, has actually a pretty good stretch.

Fabric 2 is stretchy but not as stretchy as Fabric 1 but keeps the shape better.

Fabric 3 seems to stretch more than Fabric 2 and less then Fabric 1. Seems like it would drag out.

Appendix 4.7

Interviewee 7.

1. Describe the appearance of the fabric.

Fabric 1 looks good. Doesn't feel like it pills. Looks like a quality fabric. Fabric 2 looks like a quality fabric. I like the ribbed structure on Fabric 1 more. Fabric 3 looks good, would like to have a t-shirt out of this fabric.

2. Describe how does it feel on the skin?

Fabric 1 feels really soft and so nice. Fabric 2 feels a bit rougher. It is still soft too, but a bit stiffer than Fabric 1. Fabric 3 is very soft and nice but Fabric 1 was the favourite.

3. Describe the thickness and weight of the fabric.

Fabric 1 is very light. Fabric 2 feels a bit heavier than Fabric 1. Fabric 3 feels really light but not as light as Fabric 1.

4. Describe how stretchy is it.

Fabric 1 stretches well but it also seems to be elastic. I'm always afraid that the products drag out. It doesn't seem to be the case here. Fabric 2 seems to keep its shape better, therefore would fit me and my boobs better. Feels like a quality fabric. Fabric 3 has a good stretch to it. I wouldn't be afraid that any of those would drag out.

Appendix 4.8

Interviewee 8.

1. Describe the appearance of the fabric.

Fabric 1 looks beautiful. I don't think it would pill. Fabric 3 seems to get transparent when stretched. Seems like a quality fabric but when stretched then it looks cheaper. Fabric 1 gets a bit transparent too, but somehow it doesn't bother me. Fabric 2 is the most opaque of them. Fabric 1 is the absolute favourite.

2. Describe how does it feel on the skin?

Fabric 1 – oh, this is what I talked about! This is what I imagine the loungewear fabric should be alike! It is light, soft and beautiful. Fabric 2 is rougher. I like Fabric 1 more. It feels so nice to caress the Fabric 1, feels divine. Fabric 2 feels soft to but in comparison is Fabric 1 the winner. Fabric 3 – oh, this feels nice too. Would like to have it close to my skin.

3. Describe the thickness and weight of the fabric.

Fabric 1 is really light. Fabric 2 is light but not as light as Fabric 1. Fabric 3 feels super light, the sheerest of them all.

4. Describe how stretchy is it.

Fabric 1 stretches really well. Should get the right size of the product not a size bigger that I usually get. Has a lot of give. Seems like a quality fabric, it gets back to its original position, is elastic. Fabric 2 stretches really well. Wouldn't be afraid that it would lose its shape cause it is elastic too.

Appendix 4.9

Interviewee 9.

1. Describe the appearance of the fabric.

Fabric 1 has a bit of shine to it. It shines a bit through – would be more comfortable if it didn't. Looks rather simple, not too fancy. Fabric 2 is more opaque. But I like Fabric 1 more. Fabric 1 and Fabric 3 seem to be more luxurious and exquisite, Fabric 2 seems more rustic.

2. Describe how does it feel on the skin?

Fabric 1 feels really soft. Fabric 2 feels good on the skin but in comparison Fabric 1 is much softer. Fabric 3 feels really good on the skin. Might even be the softest of all of them.

3. Describe the thickness and weight of the fabric.

Fabric 1 feels very light. Fabric 2 has a tighter structure and feels heavier than Fabric 2 – it is not the most heaviest fabric in the world, but just in comparison. Fabric 3 has a different structure, it is tighter than the others.

4. Describe how stretchy is it.

Fabric 1 stretches well, is also elastic – elongates and goes back. Fabric 2 stretches really well. Fabric 3 stretches well.

Appendix 4.10

Interviewee 10.

1. Describe the appearance of the fabric.

Fabric 1 has a bit of shine to it. And seems to be a bit transparent. In this case it is not too much. Fabric 3 is a bit transparent too, Fabric 2 not.

2. Describe how does it feel on the skin?

Fabric 1 feels really nice on the skin – soft and light. Fabric 2 doesn't feel as nice as Fabric 1. Fabric 1 is more pleasant, sensual and lighter. Fabric 2 doesn't feel bad, depends on the product. It feels rougher. I have sensitive dry skin and Fabric 2 seems to scratch it a bit too much. Fabric 3 feels nice on the skin too. Fabric 1 and 3 are the nicest.

3. Describe the thickness and weight of the fabric.

Fabric 1 feels really light. Fabric 2 is not that fine, sheer. It feels like Fabric 2 isn't as breathable as Fabric 1. Fabric 3 feels lighter than Fabric 1, definitely lighter than Fabric 2.

4. Describe how stretchy is it.

Fabric 1 is really stretchy. It doesn't seem to stretch out. Fabric 2 stretches well, is elastic. Fabric 3 is stretchy too but is a different way. Maybe it would drag out more.

Appendix 4.11

Interviewee 11.

1. Describe the appearance of the fabric.

Fabric 1 is a bit shiny. It is not plain, has those shiny stripes. Looks nice. There are two sides, one is shinier. Oh, one is the back side. Looks tiny texture, detailed fabric. I see a bit of pilling here and there. It's a bit fuzzy. It is not super smooth, but I'm looking at it really close. When you stretch it you can see through it. It gets a bit wrinkly. Not that much.

Fabric 2 it is shiny from inside. It is very similar to Fabric 1. I can also look through it and it's also ribbed jersey. And again very tiny texture. In comparison I can see the different. Fabric 2 seems to be pill less, or less fibres coming out. It seems like it's better made than Fabric 1, seems a finer texture, more defined. Fabric 2 has shiny material inside. Seems to be made better. Fabric 2 is more opaque, you cannot see through it even when stretched. Seems higher quality.

Fabric 3 looks very different. It has really fine texture. Compared to the other ones, it has those tiny lines but they don't seem to be that clean lines, they are more curved. The ribbed structure makes the others two more defined.

2. Describe how does it feel on the skin?

Fabric 1 feels really soft. From the inside it feels softer than from the outside. Inside feels a little bit silky. Feels rather cool, inside more cool than outside. Yes, feels really nice. Too bad it's more inside because if you are rubbing yourself against somebody, the other person doesn't experience that niceness. Too bad for the partner that is outside.

Fabric 1 feels more sensual but also more fragile than Fabric 2. I would say the first is produced in China and the second in Germany. Quality wise, first feels cheaper. But also more sensual and lighter Fabric 2 is stiffer, heavier, strong, feels less sensual. Fabric 1 has a fragile touch to it. Obviously Fabric 2 is fragile to, but it's more solid, conservative, so to say.

Fabric 3 feels a bit rubbery in a way. I don't know why. Folds more compared to the other ones. Seems more flexible. It shines through a bit. But when you look through, hold it against the light, then the fabric is not that even. If I hold it loses its shape a little, bends back a little. And it gets

more wrinkly a bit. I guess you need to iron it. With Fabric 1 or Fabric 2 you don't get sharp folds or edges.

Fabric 3 feels soft. Feels like its soft everywhere. Feels softer then the other ones because it doesn't have the ribbed structure. More soft then the other ones. There is something about this fabric that is sticking out. Maybe the rubbery feel. Something interesting. It feels less cold then the other ones, it feels warmer. It seems like Fabric has some resistance, like rubber does. When you go over it with your finger it is not smooth.

Others, Fabric 1 and Fabric 2, although they have those bumps, when finger goes over it, they feel smoother. Fabric 1 is really smooth, Fabric 2 is more bumpy, Fabric 3 is more like rubber. It's the friction. I don't know how to explain. If you go over a doormat with you finger – this is how Fabric 2 feels alike. If you go over a mirror with your finger – this is how Fabric 1 feels alike. If you go over Fabric 3 – it could also be like skin, gives sort of a friction. Third feels more moist, could work well for lingerie. Wait, I know what it is. The stockings have this on top of them to keep them from slipping down. I have always been so fascinated by that.

3. Describe the thickness and weight of the fabric.

Fabric 1 feels really thin and also a bit fragile. It is light. Fabric 2 is obviously more heavy. At least it feels more heavy. More dense. Not that much difference. It is less flexible. Fabric 1 falls on my hand really easily, Fabric 2 is more stiff. Fabric 3 seems a bit heavier, but difficult to say cause the samples are small. Seems lighter than Fabric 1 and heavier then Fabric 2. It is in between.

4. Describe how stretchy is it.

Fabric 1 is pretty stretchy. Feels really elastic. Goes back to its original shape. Doesn't feel like I stretch it and I destroy it. Seems like good quality in that respect.

Fabric 2 has better defined stripes/ ribs, stretches more equally. Fabric 1 seems to have more air, space in between. Fabric 2 stretches a bit nicer then Fabric 1 – seems like there is more material, finer material. Fabric 2 seems a bit less elastic, I'm not sure. It's a different elastic. If I pull Fabric 1 the tension seems to be around my fingers, if I pull Fabric 2 the tension seems to be in between the fabric, if it makes sense. It seems like the tension is spread throughout the fabric more with Fabric 2. Fabric 2 feels like a stronger material when I stretch it, it feels like, okay, I don't need to be too

careful with this one, while with Fabric 1 I have a feeling I might break it. I feel more confident pulling Fabric 2.

Fabric 3 stretches but not really, not like rubber. It is elastic. But here you can see my fingers where I hold it while stretching it. I lay it on the table and it's still there. So I guess it doesn't get back in its original shape. In this sense it seems to be least quality fabric.

Appendix 5. Laboratory Test Results. Pilling Resistance.

Fabric	Number of circles	Result of sample no 1	Result of sample no 2	Result of sample no 3	Notes
Fabric 1	125	K2 – 4-5	K2 – 4-5	K2 – 4-5	Mild pilling
	500	K2 – 4-5	K2 – 4-5	K2 – 4-5	Noticable pilling
	1000	K2 – 3-4 /2-3	K2 – 3-4 /2-3	K2 – 3-4 /2-3	Fuzzy, noticable pilling
	2000	K2 – 2-3	K2 – 2-3	K2 – 2-3	Small pills, dense pilling
	5000	K2 – 2-3	K2 – 2-3	K2 – 2-3	Small pills, very dense
	7000	K2 – 2-3	K2 – 1-2	K2 – 1-2	Very dense pilling, relatively large pills
Fabric 2	125	-	-	-	No changes on the fabric surface
	500	-	-	-	No changes on the fabric surface
	1000	-	-	-	Very mildly fuzzy
	2000	low K2 – 4-5	low K2 – 4-5	low K2 – 4-5	Very mildly fuzzy
	5000	low K2 – 4-5	low K2 – 4-5	low K2 – 4-5	Very mild pilling
	7000	K2 – 4-5	K2 – 4-5	K2 – 4-5	Fuzzier, some pills
Fabric 3	125	K2 – 4-5	K2 – 4-5	K2 – 4-5	Subtle changes, not too noticeable
	500	K2 – 4-5	K2 – 4-5	K2 – 4-5	Mild pilling, no 2 the least
	1000	K2 – 3-4	K2 – 3-4	K2 – 3-4	Small pills, dense pilling
	2000	K2 – 2-3	K2 – 2-3	K2 – 2-3	Very dense pilling, large pills
	5000	K2 – 2-3	K2 – 2-3	K2 – 2-3	Very dense pilling
	7000	K2 - 2-3	K2 - 2-3	K2 – 2-3/1-2	Very dense pilling, smaller pills than on the rating scale but dense.

Appendix 6. Laboratory Test. Elongation and Elastic Recovery

Warp length				
Fabric	Number of sample	Original length (cm)	Extended length (%)	Immediate recovery (cm)
Fabric 1	Sample no 1	8,6	58	8,7
	Sample no 2	8,6	59	8,9
	Sample no 3	8,5	60	8,6
Fabric 2	Sample no 1	8,6	103	8,8
	Sample no 2	8,5	110	8,7
	Sample no 3	8,5	110	8,7
Fabric 3	Sample no 1	8,6	91	8,7
	Sample no 2	8,6	90	8,7
	Sample no 3	8,5	90	8,6
Weft length				
Fabric 1	Sample no 1	8,5	214	9,2
	Sample no 2	8,4	213	8,9
	Sample no 3	8,5	206	9
Fabric 2	Sample no 1	8,5	202	8,9
	Sample no 2	8,6	195	8,8
	Sample no 3	8,5	198	8,7
Fabric 3	Sample no 1	8,4	155	8,8
	Sample no 2	8,5	151	8,9
	Sample no 3	8,4	158	8,8

Appendix 7. Information about the Fabrics

FABRIC	PRODUCER	COMPOSITION	WEIGHT
Fabric 1	Producer 1, Italy	96% Viscose, 4% Elastane	144g/m2
Fabric 2	Producer 2, Poland	95% Viscose, 5% Elastane	210g/m2
Fabric 3	Producer 3, Turkey	95% Viscose, 5% Elastane	155g/m2

Appendix 8. Kristiina Suspender Top by KSL.



