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Master's Thesis
Academic Year 2016

Designing a Modest Sportswear to Provide
Comfort in Daily Sports Activities for Muslim
Women Wearing Hijab

Keio University
Graduate School of Media Design

Muhammad Ghufron Yazid

A Master's Thesis
submitted to Keio University Graduate School of Media Design
in partial fulfillment of the requirements for the degree of
MASTER of Media Design

Muhammad Ghufron Yazid

Thesis Committee:

Associate Professor Kazunori Sugiura	(Supervisor)
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Abstract of Master's Thesis of Academic Year 2016

Designing a Modest Sportswear to Provide Comfort in Daily Sports Activities for Muslim Women Wearing Hijab

Category: Design

Summary

Modest fashion started to be under the spotlight starting from 4 or 5 years ago. Unlike the old generation, many young Muslim women are now able to express their identity through their appearance. More fashion designers, models and fashion bloggers considered modest fashion as their identity. They has inspired many other young Muslim women wearing hijab to be more confident in expressing themselves using fashion.

In spite of the advancing trend of modest fashion, sportswear for Muslim women still have some rooms for improvement. For example, in terms of comfort, function, and the sense of fashion in it. Most of the modest sportswear that is available in the market are still not enough to fulfil the real demand of Muslim women.

This paper introduces the design of a modest sportswear that aims to provide comfort in daily sports activities, especially running, for Muslim women wearing hijab. Three types of hijab and five types of wear prototypes were made and evaluated.

Keywords:

Modest Fashion, Hijab, Muslim, Islam, Sportswear

Keio University Graduate School of Media Design

Muhammad Ghufron Yazid

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Chapter 1

Introduction

1.1 Background

Islam and Muslim Women

What do you come up with when you hear the word “Islam”? A strict rule? A famous folk tale “One Thousand and One Nights”? A beautiful Arabic calligraphy? Or probably, a woman with the black mysterious clothes. The Islamic cultures such as art, food, architecture, and fashion have been evolving throughout the decades (figure1.1). It is now spreading various charms that are unique compare to the West.

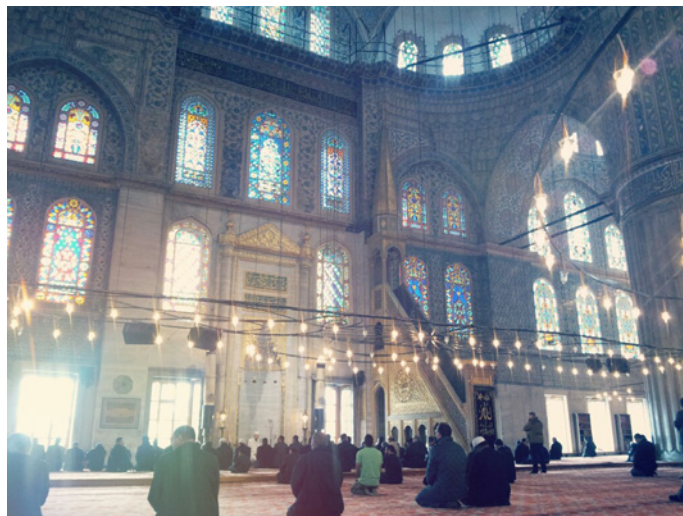


Figure 1.1: Blue Mosque in Istanbul, Turkey

Islam is the second largest religion in the world. It was first introduced in Saudi Arabia in the 7th century. The disciple of Islam, or commonly called as Muslim,

are widely distributed in Middle Eastern countries, Asia, and Europe. Islam has The Five Pillars which consist of **shahadah** (sincerely reciting the Muslim profession of faith), **salat** (performing ritual prayers in the proper way five times each day), **zakat** (paying an alms, or charity, tax to benefit the poor and the needy), **sawm** (fasting during the month of Ramadan), and **hajj** (pilgrimage to Mecca). There is also The Six Pillars of faith which are believing in God, angels, prophets, holy-books, death, and fate¹.

In Quran (the holy book of Islam) (Figure1.2), it is stated that Muslim women must preserve their beauty by covering all parts of their body except the face and hands. The most commonly used fashion item that represent Muslim women is the fabric that they wear to cover their heads, hijab. However, depending on the depth of faith and the cultural aspect of each country, the amount of skin being hidden will vary. In the Middle Eastern countries, Muslim women cover their whole body including the face and hand using Burka². On the contrary, there are some Muslim people who wear regular clothing in Asia. It shows that the cultural background also reflected the way women dress and it can be categorised as a unique costume of the country beyond the Quran's doctrine.



Figure 1.2: The Quran

Hijab

Hijab is a word from Arabic which means ‘covering’ and it refers to the fabric that covers the head³. Muslim women must obscure their beauty based on the doctrine written in the Quran. However, Quran only mentions general terms concerning the dressing of women and the interpretation on which part and how to cover up is very diverse depending on the local culture (Figure1.3).



Figure 1.3: Women wearing hijab in Indonesia

Several words relating to veil are stated in the Quran. The word *khimar* (head cover) and *jilbab* (a long garment) are used instead of the word *hijab*. Chapter 24, verse 31 in Quran explains in detail about the faithfulness of women and men in particular.

*“And say to the believing women that they should lower their gaze and guard their modesty; that they should not display their beauty and ornaments except what (must ordinarily) appear thereof; that they should draw their **khimar** over their breasts and not display their beauty except to their husband, their fathers, their husband’s fathers, their sons, their husbands’ sons, their brothers or their brothers’ sons, or their sisters’ sons, or their (Muslim) women, or the slaves whom their right hands possess, or male servants free of physical needs, or small children who have no sense of the shame of sex; and that they should not strike their feet in order to draw attention to their hidden ornaments. 24:31”*

In addition to this verse, another term about the veil is stated in the Quran. For example, Muslim women are obliged to wear outer garments when they leave their house, according to the chapter 33 verse 58.

*“Those who harass believing men and believing women undeservedly, bear (on themselves) a calumny and a grievous sin. O Prophet! Enjoin your wives, your daughters, and the wives of true believers that they should cast their **outer garments** over their persons (when abroad): That is most convenient, that they may be distinguished and not be harassed. 33:58”*

The word Hijab is also referred in chapter 33, verse 53 with the meaning of partition.

*“O you who have believed, do not enter the houses of the Prophet except when you are permitted for a meal, without awaiting its readiness. But when you are invited, then enter; and when you have eaten, disperse without seeking to remain for conversation. Indeed, that [behavior] was troubling the Prophet, and he is shy of [dismissing] you. But Allah is not shy of the truth. And when you ask [his wives] for something, ask them from behind a **partition**. That is purer for your hearts and their hearts. And it is not [conceivable or lawful] for you to harm the Messenger of Allah or to marry his wives after him, ever. Indeed, that would be in the sight of Allah an enormity. 33:53”*

Types of Hijab

The researcher participated in the seminar which organised by Japan Muslim Fashion Association, in Akihabara, Tokyo on November 2016. All the things about hijab were introduced in this seminar.

Because the details are not described in the Quran, the style of Hijab differs in each countries and ages. There are several types of veils in Islamic world, which are Burka, Abaya, Niqab, Chador, and else. In countries where people speak Arabic, they generally call these veils, hijab.

Abaya is a long piece of garment, that reaches to the ground, covering the whole of the body. People in many parts of the Islamic world especially in Arabic countries wear this traditional black robe-like dress in public with face-covering veil, **niqab**, which covers whole face but the eyes. There is similar kind of veil with niqab in Central Asian, which is called burka. **Burka** also covers whole body

and face including the eyes, but the eyes part are made by mesh fabric so that it allows the user to see through the veil. In Middle East, particularly Iran and Iraq, people wear **chador**, which is a cloak with semi-circle hole. In South East Asian countries, says Indonesia and Malaysia, they also have their own veils, which are called **mukena**, **selendang**, and **kerudung**. Mukena is white two pieces of cloth which is fastened around the face, and is used especially for praying. Selendang is a simple scarf covering the head, which is also able to be used for the another purpose. Kerudung is the most popular head scarf in Indonesia and Malaysia.

Even though there are many types of hijab around the world, we can summarise the three common rules of wearing hijab. First, it has to cover “aurat (body parts that need to be covered in Islamic law)⁴”, whole body except face and hands. Second, it does not show through. The last one is that it should not show body line⁵.

Development of Hijab Fashion

Nowadays, wearing hijab is being considered as conservative. Many people from non-Islamic society consider Hijab as representation of oppressions toward women. In certain condition, women who cover their head can be associated with terrorism⁶. In 2010, France decided to ban the application of burqa and niqab in public⁷. In August 2016, several municipalities in France banned “Burkini”, a coined word that combines “Burka” and “Bikini”, a full-body swimwear that Muslim women wear. The French authorities expressed concern about the influence of Islamic clothing in public places, following Islamic radicalist’s mass murder in Nice and Paris. But the State Council, which is the Supreme Court of the Administrative Court, decided on August 26th, 2016 that the ban was a serious and illegal infringement of the basic freedom of religion and individual, and ordered to freeze the measure.

Whereas, muslim women wear hijab by their own choice and as a symbol of their maturity. Despite the rejections in some parts of the world, the development of hijab fashion shows great potential. Unlike the old generation, many young Muslim women are now able to express their identity through their appearance⁸. More fashion designers, models and fashion bloggers considered hijab fashion as their identity. Among Muslim female fashion designers wearing hijab, Hana Tajima⁹ from Britain is one of the most representative designer. Resently she released a modest fashion collection, for both Muslim and non-Muslim women in collaboration with UNIQLO Japan. Hana converted herself to Muslim at the

age of 17. Since both of her parents are artists, she grew up in a creative environment and was able to cultivate her aesthetic sensations. She began publishing her own fashion styles on her blog and attracted Muslim women's attention as she can pull out her feminine beauty while preserving the Islamic tradition and doctrine.

Globally, modest fashion industry also shows interesting growth. The total consumption of modest fashion in 2013 was 266 billion dollars, it is 11 percent of total consumption of world fashion industry¹⁰. This development encourages famous fashion brand like Dolce & Gabbana, H&M and Tommy Hilfiger to broaden their market into modest fashion industry; Dolce & Gabbana released their an abaya collection for Middle East market, while H&M hired hijab model for their advertisement¹¹. Other than that, the first appearance of hijab fashion in New York Fashion Week also gained a high reputation¹².

Hijaber' s Community in Indonesia

Compared to Middle Eastern countries, Indonesia accept relatively flexible implementation of muslim fashion. At first, in 1980s, when Indonesia was under the power of Suharto government, the citizens were forced to follow certain rules and people could not dressed up in Islamic clothes, almost nobody wore hijab. After democracy, in 1998, many citizens started to wear hijab¹³.

Many Muslim women, especially in Jakarta, started to think that wearing hijab and being modest are cool. They learned more about Islam and finally chose to wear hijab. In November 2011, a community of Muslim women wearing hijab, called "Hijaber", was established by famous modest designers and models. They promote contemporary Islamic thought and life style through "How to wear hijab" class, study class, and talk shows. They also persuade young women to participate and help their community through SNS, Instagram and Facebook. Now, their community is expanding to another cities in Indonesia.

Modest Sportswear

In spite of the rapid development of hijab fashion, Muslim women still have difficulty in the field of sportswear since there are not many choices of modest sportswear in the market. They usually wear men's sportswear or pick an attire bigger than their original size to hide their body line.

In the professional world, wearing hijab to cover the entire head are treated as

a strange outfit. In November 2011, Iranian soccer team was disqualified at the London Olympic Girl's Asian Qualifying held in Amman, Jordan¹⁴, as it was considered as a violation for women athlete to cover their hair. Jordan, the opponent country of the game, also had three players disqualified for the same reason. Since 2007, FIFA (Federation Internationale de Football Association) have been refusing Muslim women to wear hijab in the game due to safety concern. Thanks to the Muslim athlete's appeal against the rule of prohibiting wearing hijab, to let the players to participate in the competition, The International Football Association Board had abolished the ban in July 2012. Now in Iran, soccer is rapidly developing as there are around 50,000 women playing soccer¹⁵. Furthermore, FIBA (The International Basketball Federation) experienced a similar problem, basketball players were banned to wear hijab while playing for safety reason. Many organizations and players are now working on to change this condition.

1.2 Research Objective

The goal of this research is to design a modest sportswear that will provide comfort in daily sports activities for Muslim women wearing hijab; to enable them to keep their religious tradition while working out and let them keep their comfort and modesty while being stylish at the same time.

1.3 Focus of Research

This research is going to be a Design Research. The main target of this research is Muslim women who wear hijab in Southeast Asia, especially Indonesia. Every Sunday morning public roads in Jakarta becomes running tracks and many Muslim women are participating in this running event as well. For that reason, the sportswear will be designed mainly for running and the design will be evaluated from the aspect of aesthetic, comfort and modesty.

1.4 Organisation of Thesis

This thesis is organised into five chapters.

- Chapter 1 introduces the context, rationale, objectives of this research, and provides a brief overview of the design concept and business initiative.

- Chapter 2 reviews the studies related works.
- Chapter 3 describes the design research process and explains the final prototypes.
- Chapter 4 provides details of the evaluation through experiments that were conducted with potential users.
- Chapter 5 discusses the conclusions from the evaluation, and addresses potential future improvements or developments.

Notes

- 1 Klein, A F (2013) *Religion Of Islam*, Independence, UNKNOWN: Taylor and Francis, pp.38. (Klein 2013)
- 2 Burka covers whole body and face including the eyes, but the eyes part are made by mesh fabric so that it allows the user to see through the veil.
- 3 Oxford Dictionary. <https://en.oxforddictionaries.com/definition/hijab>. Accessed November 27, 2016.
- 4 Yo Nonaka (2015) *Fenomena Fashion Muslim di Indonesia*, Bunkyo-ku, Tokyo: Fukumura, pp.9. (Nonaka 2015a)
- 5 Yo Nonaka (2015) *Fenomena Fashion Muslim di Indonesia*, Bunkyo-ku, Tokyo: Fukumura, pp.167-180. (Nonaka 2015b)
- 6 Ho, Dreher Tanja, Christina (2009) *Beyond the Hijab Debates*, Newcastle-uponTyne, UNKNOWN: Cambridge Scholars Publishing, pp.75. (Ho 2009)
- 7 the CNN Wire Staff (2010). *French Senate approves burqa ban*. <http://edition.cnn.com/2010/WORLD/europe/09/14/france.burqa.ban/>. Accessed December 12, 2016.
- 8 Lewis, Reina (2013) *Modest Fashion: Styling Bodies, Mediating Faith*, London, UK: I.B.Tauris, pp.3. (Lewis 2013)
- 9 Hana Tajima. <http://hanatajima.com/>
- 10 The statement was taken from Yo Nonaka's speech in the seminar Japan Muslim Fashion Association, in Akihabara, Tokyo on November 2016.
- 11 Monica Sarkar (2016), *H&M's latest look: Hijab-wearing Muslim model stirs debate*, <http://edition.cnn.com/2015/09/29/europe/hm-hijab-model/>. Accessed December 15, 2016. (Sarkar 2016)
- 12 Saira Asher (2016). *The moment hijabs dazzled the New York Fashion Week catwalk*. <http://www.bbc.com/news/world-asia-37381770>. Accessed December 15, 2016. (Asher 2016)
- 13 Yo Nonaka (2015) *Fenomena Fashion Muslim di Indonesia*, Bunkyo-ku, Tokyo: Fukumura, pp.155-162. (Nonaka 2015c)

- 14 Yumiko Yanai (2013). *Standing up from disqualification disposition, “Nadeshiko” wearing hijab. Muslims fighting in women’s soccer.* <http://number.bunshun.jp/articles/-/384617>. Accessed November 27, 2016. (Yanai 2013)
- 15 *Iran’s female footballers in action after head scarf ban lifted.* <https://www.rt.com/sport/iran-female-football-futsal-hijab-fifa-914/>. Accessed November 27, 2016.

Chapter 2

Related Works

This research aims to provide opportunities for Muslim women to do sports activities comfortably and fashionably through designing modest sportswear. In chapter 2, some of the related works of hijab fashion and sportswear will be explained to understand current sportswear and modest fashion industry.

2.1 Modest Fashion

Modest fashion started to be under the spot light in this few years. UNIQLO, one of the most popular fashion brand from Japan manufacturing and selling simple and high quality daily wear created a modest fashion collection that could be classify as a good example (Figure 2.1)¹. They collaborated with Hana Tajima, a Muslim designer from London, United Kingdom to create a modest fashion collection². Hana Tajima is one of the most representative designer among Muslim women designer wearing hijab. She has influenced a lot of Muslim women around the world through her daily outfit in her blog. This collaboration was launched in 2015 July mainly in South East Asian country such as Malaysia, Indoneisa, Thailand, and Singapore.

Not only the clothing is made of comfortable material, but the design also cherishes femininity while supporting active daily live and suppressing the exposure of the skin and body line. The contemporary design are suitable for both Muslim women and women in general who prefer modest style. There is also inner hijab in the collection, made of one of UNIQLO's tech fabric called AIRism (Figure2.2)³, which is light, cool, and comfortable for daily use. The collection received good response, and then they decided to broadened its market to Japan, Philippines, the United States of America, and the United Kingdom in 2016.

On November 24, 2016, an event called Halal EXPO was held in Asakusa, Tokyo. This event was held for enterprises and individuals interested in Halal



Figure 2.1: UNIQLO x Hana Tajima (source: UNIQLO)



Figure 2.2: AIRism Inner Hijab (source: UNIQLO)

Market. Halal means "religiously acceptable according to Muslim law"⁴. Halal could be applied to food, banking, fashion, and else. In this event Modest Fashion Show got a lot of attention from the visitors. Various activities, like how to wear and arrange hijab (Figure2.3), centering on Modest Fashion designed by Japanese designers and Muslim designers who came from abroad, were conducted.



Figure 2.3: A Japanese woman tries wearing hijab

Other than some works of Muslim fashion designers, there was also a hijab made of Japanese traditional fabrics manufactured by Musubime⁵ being exhibited in the event. Musubime is a Japanese scarf brand producing beautiful products with Japanese traditional materials and certain handwork techniques. The hijab exhibited was made of carbon fiber fabric that works well in anti-bacterial, deodorant and water absorption (Figure2.4).

2.2 Sportswear

According to *Materials and Technology for Sportswear and Performance Apparel* sportswear can be defined as performance-driven functional clothing and footwear. It says "Sportswear or activewear by definition is about functionality, comfort and safety with specification developed and designed to deliver a product that fits in with the performance needs of the sportsman and sportswoman⁶." It is important to understand physiological changes that human body generates heat and sweat through exercise. Sportswear has to be considered as different type of clothes from daily clothes.



Figure 2.4: Carbon fiber hijab by Musubime

A lot of research was conducted to provide many kinds of innovative sportswear in the market. DYNAMIC MESH (Figure2.5)⁷ produced by French outdoor goods manufacturer Millet is one of the example. It is a bulky mesh knitted underwear made mainly of polypropylene which is excellent in hydrophobicity and low thermal conductivity. The sweat is immediately sucked up to the upper layer and diffused by wearing under the quick-drying base layer fitted to the body. The mesh thickness leaves some spaces between the skin and the base layer so that it can reduce the risk of cold sweat and hypothermia. Comfortable dry feeling will be made by the dried base layer and breathability of mesh. It is rich in elasticity and ease of movement with outstanding fit. It could be said it is a completely innovative underwear that reflects modern technology⁸.

Nike Wrap Bande (Figure2.6)⁹ is an example of functional sports accessory. It can cover around head and neck in various way during workout and works as a headband or a neck warmer. It is made of stretch quick drying fabric, and will support any kinds of sports activities.

Moving forward, sportswear has been evolving as a fashion trend in this past few years¹⁰. People started to consider sportswear as a new daily uniform, it is worn not only for workout but also for going out to a street. There have been become no boundary between sportswear and daily wear.

Nike's sportswear collection announced in 2015 is an example of sportswear that includes fashion aesthetic more than just a normal active wear (Figure2.7)¹¹. The collection is collaboration between NikeLab and sacai, a fashion brand pro-



Figure 2.5: DRYNAMIC MESH (source: Millet)



Figure 2.6: Nike wrap bande (source: PicClick UK)

duced by Japanese designer Chitose Abe¹². The sportswear was designed in a new style with modern feminine edge based on Nike's traditional silhouette, fashionable enough to be on a fashion show runway.

Generally sportswear is designed in high saturation and contrast colour. However, to enable the usage in daily activity, the sportswear today has increased in a variety of design, such as minimal design that reduced colour and design elements.



Figure 2.7: The NikeLab x sacai collection (source: FASHION PRESS)

2.3 Modest Sportswear

There are some Muslim fashion brands manufacturing modest sportswear that can be found online. Artizara for example, has been producing modest clothing for women, men, and kids since 2002. In Artizara's online shop (Figure 2.8)¹³, some active wears designed with comfortable fabric suitable for sports and able to keep comfort and modesty at all times are available¹⁴.

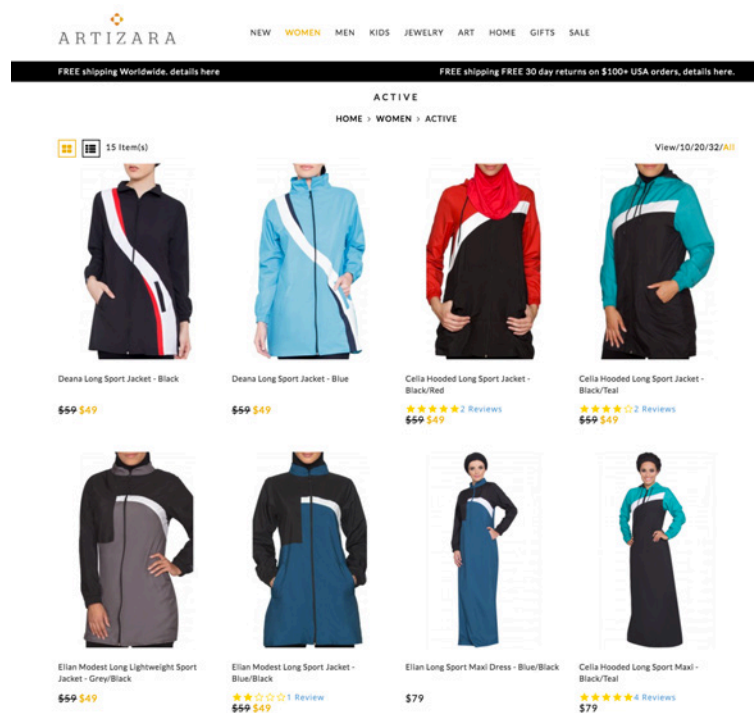


Figure 2.8: Artizara's online shop (source: Artizara)

Another brand from Malaysia is Natasha, they mainly deals with modest sportswear¹⁵. Natasha's brand philosophy is to design a fashionable activewear that is modest in appearance from head to toe. Natasha's hijab for sports has a veil hanging down to the chest and the length of the tops is also longer enough to extend to the crotch. This sportswear has a closer look to everyday modest fashion, but it lacks of aesthetic value (Figure 2.9)¹⁶.

Veilgarments from USA designed modest sportswear incorporating hoody style (Figure 2.10)¹⁷. With the simple design, women can exercise comfortably without wearing layered clothes. It can completely cover the head since the hoodies



Figure 2.9: Natasha (source: Natasha)

connected from the tops, so people can concentrate on their performance without worrying about hijab. The length of the front and the back allows women to hide the hips part. However, the material still emphasize body line.

Sports-Friendly Hijab

There are several sports-friendly hijabs available in the market¹⁸. Those hijabs help Muslim women to cover their hair comfortably while working out and allow them to participate in any kind of sports activities since they are made of material suitable for exercise, without any need to use pins.

ResportOn¹⁹ is a hijab designed by a graduate student, Elhamm Seyed Javad (Figure2.11)²⁰. Because of some Muslim players who were forced to leave at the taekwondo competition, she thought of designing hijab which is functional, simple and easy to use for athletes. ResportOn is made of dry-fit material and can cover the whole hair without difficult adjustment. Since it is hed-fit, athletes can concentrate on the performance and demonstrate their full potential.

Another product, Capsters²¹, is a hijab designed by a Dutch Muslim woman (Figure2.12)²². She designed a hijab based on the experiences of being forced to leave the gym class just because she is wearing hijab. She hopes that Muslim



Figure 2.10: Veilgarments (source: Veilgarments)



Figure 2.11: ResportOn (source: dezeen)

women can actively participate in sports with the sports-friendly hijab. With its one piece design like ResportsOn, users can easily hide their hair and fit it to their head. it is developed in variations of colours, allowing consumers to choose the colour of their favourite.



Figure 2.12: Capsters (source: Capsters)

All of the hijabs mentioned above are fit to the head and the design gives priority to the ease of exercise for athletes. On the other hand, there is a hijab made by Friniggi that looks almost the same as hijab being worn on a daily basis. The veil hangs to the chest to keep the modest style while working out.

Yuriko Koike, the governor of Tokyo met with the president of International Weightlifting Federation Tamas Ayan on 8th November, and she showed her designed hijab for female athlete competitions (Figure 2.13)²³. She made this hijab with one of the famous Japanese sportswear brand called Mizuno to encourage Muslim women to take part in sports activities²⁴.

From the interview that will be explained more in Chapter 3, it is not easy



Figure 2.13: The governor of Tokyo designed hijab (source: SankeiNews)

for Muslim women who wear hijab to find sportswear for daily use that meets demand in the market. Most of the time they maintain their modesty by wearing normal long-sleeved T-shirts, a larger clothes than the actual size or by overlapping jacket and concealing the body line. Even the products mentioned above, they are either exclusive for athletes, lack of aesthetic value or still emphasize the shape of women's body.

Notes

- 1 Image source: <http://www.uniqlo.com/sg/hana-tajima/>. Accessed December 13, 2016.
- 2 STEFF YOTKA (2016). *Uniqlo's Collaboration of Hijabs and Ready-to-Wear With Muslim Designer Hana Tajima Is Coming to the U.S.* <http://www.vogue.com/13400487/muslim-designer-hana-tajima-hijabs-uniqlo/>. Accessed December 13, 2016. (YOTKA 2016)
- 3 Image source: <http://www.uniqlo.com/sg/store/women-airism-inner-hijab-1672530005.html>. Accessed December 13, 2016.
- 4 Oxford Dictionary. <https://en.oxforddictionaries.com/definition/halal>. Accessed December 13, 2016.
- 5 Musubime. <http://www.madeinjapanhijab-musubime.jp/>. Accessed December 13, 2016.
- 6 Venkatraman, Hayes Steven George, Praburaj (2015) *Materials and Technology for Sportswear and Performance Apparel*, Boca Raton, UNITED STATES: CRC Press, pp.2. (Venkatraman 2015)
- 7 Image source: <http://www.millet.jp/drydynamic/>. Accessed December 13, 2016.

- 8 DRYNAMIC MESH. <http://www.millet.jp/dynamic/>. Accessed December 13, 2016.
- 9 Image source: <http://picclick.co.uk/NEW-Nike-Running-Wrap-Unisex-Stretch-Neck-331825060420.html>. Accessed December 13, 2016.
- 10 Nicoleta Parascan (2016). *The rise of activewear: sportswear as fashion. Sportswear as a fashion trend has been evolving for the past few years. For spring 2016 it continues on the direction of sleek, minimal and luxurious, making itself ripe for new interpretations that blur the boundaries between daywear and activewear.* <http://www.fashionising.com/trends/b--sports-fashion-trend-sporty-clothing-2648.html>. Accessed December 12, 2016.
- 11 Image source: <https://www.fashion-press.net/news/15433>. Accessed December 13, 2016.
- 12 FASHION PRESS. *Nikelab x sacai Launch Collection.* <https://www.fashion-press.net/news/15433>. Accessed December 13, 2016.
- 13 Image source: <http://www.artizara.com/islamic-modest-sportswear-sport-active-long-jackets-stretch-hijabs?limit=all>. Accessed December 10, 2016.
- 14 Artizara women's active wear. <http://www.artizara.com/islamic-modest-sportswear-sport-active-long-jackets-stretch-hijabs?limit=all>. Accessed December 13, 2016.
- 15 Natasha. <http://shop.nashata.com/en/>. Accessed November 29, 2016
- 16 Image source: Natasha. <http://shop.nashata.com/en/>. Accessed December 16, 2016.
- 17 Image source: Veilgarments. <https://www.veilgarments.com/>. Accessed December 15, 2016
- 18 Maryam Yusof (2012). *Sports Hijabs for the Active Muslimah.* <http://www.aquila-style.com/lifestyle/sport-lifestyle/sports-hijabs-for-the-active-muslimah/18719/>. Accessed November 27, 2016. (Yusof 2012)
- 19 Rose Etherington (2011). *Sports Hijab by ResportOn.* <https://www.dezeen.com/2011/06/07/sports-hijab-by-resporton/>. Accessed December 10, 2016. (Etherington 2011)
- 20 Image source: <https://www.dezeen.com/2011/06/07/sports-hijab-by-resporton/>. Accessed December 10, 2016
- 21 Capsters. <https://www.capsters.com/>. Accessed December 10, 2016.
- 22 Image source: Capsters. <https://www.capsters.com/>. Accessed December 10, 2016.
- 23 Image source: <http://www.sankei.com/politics/news/161108/pl1611080039-n1.html>. Accessed December 10, 2016.
- 24 SankeiNews (2016). *Governor Yuiko Koike for the First Time to Show "Hijab" for Athletes.* <http://www.sankei.com/politics/news/161108/pl1611080039-n1.html>. Accessed November 10, 2016.

Chapter 3

Design

3.1 Design Objective

The goal of this research is to design a modest sportswear, that will provide comfort in daily sports activities for Muslim women wearing hijab. To enable them to keep their religious tradition while working out; to let them keep their comfort and modesty while being stylish at the same time. The sportswear will be designed mainly for running and the design will be evaluated from aesthetic, comfort and modesty aspect.

The design process in this research is following the method described by fashion design researcher Ezinma Mbonum¹, who specialized in Fashion Womenswear for her Master Degree at the Royal College of Art London, and currently works as Senior Lecturer in Fashion Design at University for the Creative Arts². It was started on September 2016 in Jakarta, Indonesia through market research, in which becomes a part of fieldwork. Information Research was done after market research and the design concept were finally determined. Creative research, fabric research, and colour research will be following the design concept. Prototyping process and final prototype will be explained in the end of this chapter.

3.2 Market Research

It is a crucial step to know which market the researcher designs for. By defining the target market, it will allow the researcher to start developing the project and to get a closer look at the market for instance shopping mall, supermarket, cafe, and high street fashion. It will help to provide many information and inspiration related to the project. Market research were held in Tokyo and Jakarta.

It is apparently difficult for Muslims to find fashion related products for Muslim women in the countries where Muslim is minority, such as Japan, the United States

and the United Kingdom. Sportswear for Muslims is obviously hard to be found, it is also hard to find a normal long length shirts and pants that can be worn by Muslim women. However, many products specialised in UV protection started to be found in the market recently. It shows that a sportswear with long sleeves and long pants became regular option for non-Muslim people, and we can find those types of wear easier compared to few years ago. Moreover, now there are many long sleeves swimwear for UV protection which we couldn't find before. It allows us to purchase available sportswear for Muslim women even in the Muslim minority market.

There is a famous sports related shopping street in Tokyo, called Kanda. The researcher visited many shops in the street and explored current trend of sportswear in non-Islamic country. As it was addressed above, the researcher could find some long sleeve wear which can be worn by Muslim women. However, those wear are still not long enough to cover some parts of the body, as a result some Muslim women would hesitate to wear it. The researcher visited one of the popular shopping mall in Jakarta, named FX Sudirman. Many clothes shop for Muslim women were found at the 4th floor, also a sportswear was found. Most of the sportswear has a long sleeves and a long length, though there are only a few options left to be purchased.



Figure 3.1: FX Sudirman

To find out the real problem of modest sportswear, the researcher did a field-work in Japan with two students from Indonesia on September 2016.



Figure 3.2: Diandra's outfit

Diandra (Figure 3.2) is 25 years old Muslim girl from Jakarta, Indonesia and she is currently studying in Tokyo. She used to play Rugby and jogging when she was in high school, but recently after she started to wear hijab she doesn't do it as much anymore. She usually gets her sportswear at normal sportswear shop, but it is difficult to find one she needs especially in Japan since she wants to get long sleeve shirts and pants. For this time she worn three-quarter length shirts which is made of cotton, and tight stretch pants. For the hijab, she worn the normal scarf that she use for the daily style. "I know it is not eligible for Muslim women to show our arm, but I don't like the idea of getting warm around arm while working out so I am reluctantly wearing this." she said.

The researcher noticed some problems while observing the object running around the track. First, It looks really not comfortable to wear normal scarf as hijab for working out. She kept adjusting her scarf in the position to avoid her hair comes out form the hijab. Second, her chest were too much appeared as she didn't cover it with extra layer. Same thing can be said to her hip. Since the pants was too tight, her hip and bottom were too obviously appeared and it might break the rule of veiling.

Silmi (Figure3.3) is also 25 years old Muslim girl from Indonesia, studying in Tokyo. She likes to do contemporary dance and jogging, but apparently she



Figure 3.3: Silmi's outfit

feels uncomfortable with the activewear. Same with Diandra, her sports outfit are usually normal clothes with long sleeves tops, hoodies, sweat pants, and leggings. “It is difficult to find a long sleeve shirts in Japan especially in Summer. Even if I could find one I still feel uncomfortable with my sports outfit since it is not good looking and not functional.” she said. She also mentioned about hijab. “Wearing hijab for working out is apparently uncomfortable. I usually wear slip-on hijab since it is easy to wear and comfortable for active move, but I feel around my neck is getting warm while working out.” She keeps wanting to rolling up her sleeves, but she could not do it due to avoiding her skin showing up.

It is hard to find clothes that covers and comfortable at the same time. What is available in the market are sportswear for non-Muslim ladies and this leaves very few options for hijab wearing ladies. For example it is hard to find outfit that can cover their body line, also hijab that is specially designed for sports. For people who is following the strict rule of the veil, they think they need to cover not only the skin but also the body line. Normal long sleeve shirts which you can get in the market are usually only allow you to cover that part mentioned before. Especially most of the sportswear fits to the body and its line will be obviously appeared than daily clothes. Even most of the existing modest sportswear in the market just has long sleeves, and it does not layered enough to cover body line.

In this case, modest sportswear still has some rooms for improvement.

After the fieldwork, the researcher participated in a photo session with young Muslim women from Indonesia at Aoyama on September 2016 (Figure 3.4) in order to be able to visualize the customer image. During the session the researcher helped her team with fashion styling and photographing, and gained deeper understanding about the industry.



Figure 3.4: A Muslim woman model

3.3 Information Research

To know about recent trend of modest fashion, the researcher has explored modest fashion industry through internet and publications. For example Youtube, Instagram, Pinterest, etc. Many hijab fashion designers and models who constantly upload their daily outfit and products were found on Instagram and many other social network services, which helped the researcher to have a better understanding about the recent modest fashion trend. The collection of Muslim women's

street outfit were found in the picture book called “MODEST STREET FASHION Vol.1³”. The researcher found that there are various modest fashion style around the world, and the interesting thing is that even it is full of diversity, people can still keep their modesty and still look good. Veiling is not punishment, nor restriction. It seems Muslim women will never lose sense of fashion just because of the doctrine of Islam about veiling. It seems that Muslim women wearing hijab becomes a new trend and mostly seen as a fashionable thing rather than conservative thing.

3.4 Concept

After the market research have been conducted, the design concept was developed and defined.

In spite of the advancing trend of hijab fashion, sportswear for muslim women still have some rooms for improvement. For instance, in terms of comfort, function, and the sense of fashion in it. The design concept itself constructs a modest sportswear to provide comfort for Muslim woman wearing hijab in daily sports activities, especially for daily running activities.

Most of the modest sportswear that is available in the market are still not enough to fulfil the real demand of Muslim women. What Muslim women really need to have is not just a longer shirts but the effective exercise clothe which allows them to hide the body line in a true sense, move comfortably without concern, and has a sense of aesthetic at the same time. In this research, the researcher designed a sports-friendly hijab and a sportswear which will accomplish the concept.

3.5 Creative Research

In this process, the researcher started to develop an idea using drawing, collage, and photography. Many sketches and pictures were drew and collected through the process, those drawings and pictures could help the researcher to visualise the mood of the design idea, and it allowed him to developed the concept further. The researcher organised all items into a sketch book so that it makes it easier to access to every creative essentials (Figure 3.5, Figure 3.6).



Figure 3.5: Sketchbook



Figure 3.6: Sketchbook

3.6 Fabric Research

Choosing fabrics is essential process for fashion design research since clothes can not exist without fabric. It is important to actually take a look, touch and feel the texture of the fabrics, and understand how it can shape the design concept.

Since sportswear has to be performance-driven functional clothing, there is need to find a functional fabric which is comfortable and safety for exercise. The researcher found that the most of high quality and functional sportswear are made of polyester or nylon fabric. Main feature of polyester and nylon is a wrinkle-free and dries ease⁴, so it could be suitable for sportswear.

Through the process, the researcher found that TORAY is manufacturing many functional fabrics including polyester⁵. TORAY is a chemical company from Japan, dealing with chemical products and information related materials including synthetic fibers and synthetic resins. Other fabrication manufacturers which are producing technical fabric were also found in the fabric market. Below is the result of material exploration. Those fabrics were found in some wholesales textile stores in Tokyo.

COMFORTSENSOR

COMFORTSENSOR is a 100% polyester fabric manufactured by TORAY. It is a knitted fabric material with multilayered structure in which capillaries with different thickness are combined into two layers and three layers. This structure absorbs a large amount of perspiration continuously, and it moves and diffuses promptly to the surface of the fabric due to unidirectional water permeability. In addition, the uneven structure on the back prevents the body from getting cold and sticky, the porous structure improves the moisture path, therefore it is suitable for various sportswear.

Paircool

Paircool is a comfortable fabric combined Bemberg⁶ (cupre fiber) with functional polyester, manufactured by AsahiKASEI Fibers Corporation⁷. Bomberg has excellent moisture absorption and releasing properties that keeps clothes refresed. It has the function of releasing the inner muzzle heat to the outside, sweat is quickly inhaled, diffused, dried. It is supple and soft because it uses the thinnest Bemberg fiber.

Tetoknit Sillead

Tetoknit Sillead is mesh weave breathable polyester fabric manufactured by TORAY. It has 2way stretchability, absorbs sweat, dries quickly, and prevents smell. It could be used for an inner, lining, or any other purpose require light and smooth fabric.

e-Gaya

e-Gaya is a 100% polyester fabric, which has the special function of "COMFORT SENSOR" explained above. It is also developed by TORAY. It has water absorbing, and quick-drying as its function, ideal for sports and inner use.

DOTCOOL

DOTCOOL is a fabric using polyester thread "CEO " developed by TORAY. It has the function of absorbing, diverging and drying moisture at twice the speed. It is a comfortable and functional material that enhanced quick-drying sweat by its "CEO " thread and capillary structure.

Trois

Trois is synthetic knitted fabric with 3-stage smoothness made of polyester. It is thick and soft, easy to extend in the horizontal direction.

2WAY Deodorant UV

UV is a thin, stretchy fabric made of polyester and polyurethane. It has a function of sweat-absorbing, dries quickly, UV cut, and transparency prevention. It is suitable for inner use.

Resilon sewing thread

Resilon is a sewing thread dedicated to knitted cloth, manufactured by FUJIX⁸ which makes use of the elasticity peculiar to nylon and enhances the harness of thread by special processing. Because it uses soft multifilament, it fits gently on the fabric and the skin. It is indispensable for the stretch fabric which stretches and shrinks according to the movement of the body.



Figure 3.7: Fabrics

3.7 Colour Research

In this process, a colour palette was made for defining the identity of the collection (Figure 3.8)⁹. Previous research processes linked to this colour palette. A simplify colour palette will help people to understand mood and felling of the collection. The colour palette was inspired by urban minimalism which is today's fashion trend. The researcher developed his idea of the collection based on the colour palette and the mood found in the processes.

3.8 Prototyping

After several research process have been developed, prototypes were started to be created. To explore the design concept, several rapid prototypes were made of sample fabrics. Normal equipment for making clothes such as a sewing machine, a pair of fabric scissors, threads, paper weights, dress pins, and pattern papers were used for prototyping.

Hijab

As mentioned in the related works, hijab for sports activities must be comfortable and easy to move. Sports-friendly hijabs explained in chapter 2 has been made of comfortable fabric with sweat-absorbing and quick-drying function. Those are enough comfortable for any sports activities, However, this research aims to produce sports-friendly hijab using more suitable fabric for sports. Prototyping was done to establish a good breathability and sense of aesthetic in hijab.

Wear

This research aims to design modest sportswear, that can cover Muslim women's body line comfortably while working out. Some rapid prototypes were made of sample fabrics, so that the researcher could see the form and the silhouette of the wear. After several prototypes were made, the researcher started to make final prototypes with real fabrics listed in chapter 3.

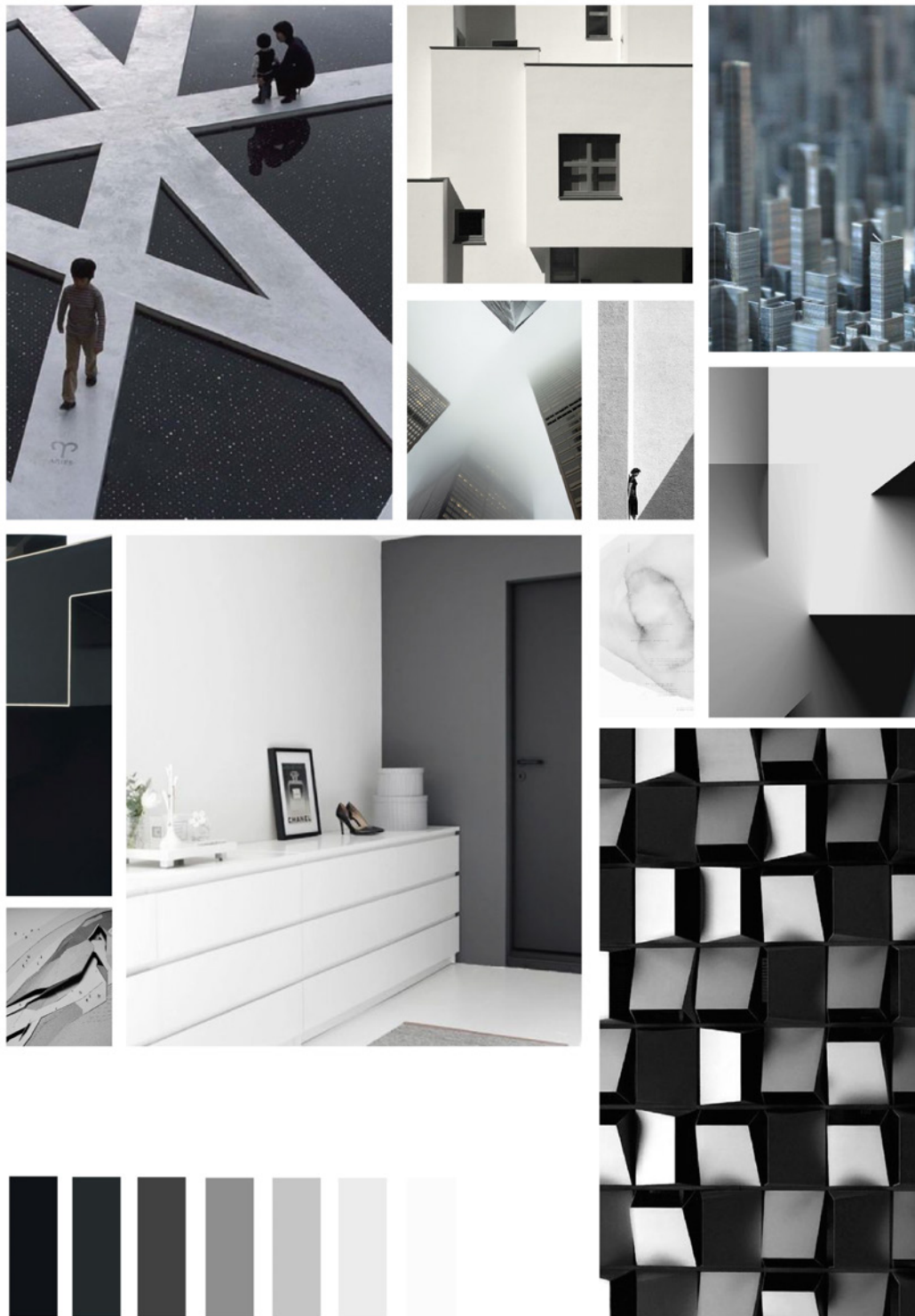


Figure 3.8: Colour palette (source: Pinterest)

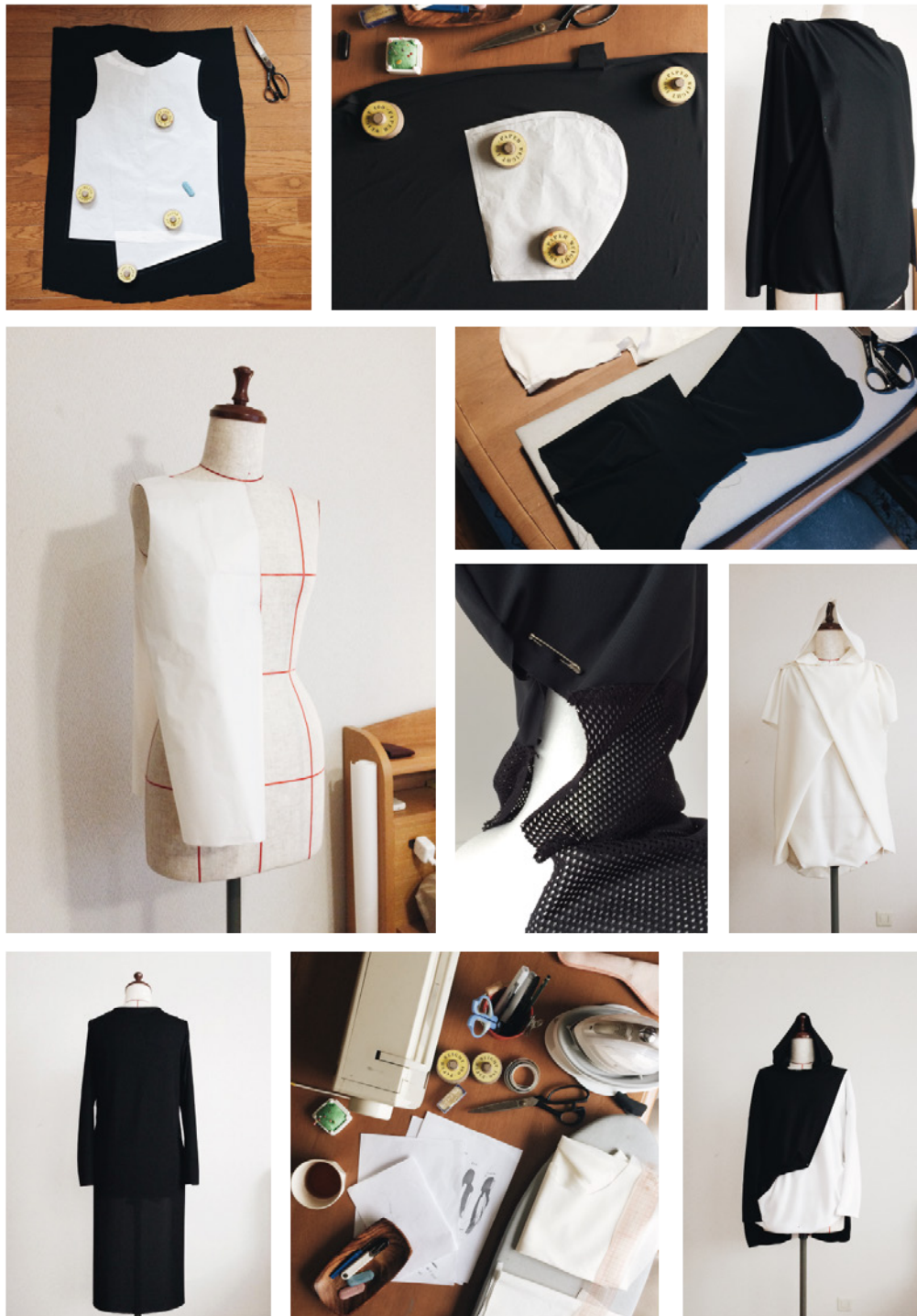


Figure 3.9: Prototyping

3.9 Final Prototype

Three different types of hijab prototype and five different types of wear prototypes were made.

Hijab

Three different types of prototypes were made. Materials are listed below:

- **H-1** (Figure 3.10)
Tetoknit Sillead (Black)
- **H-2** (Figure 3.11)
Tetoknit Sillead (White)
- **H-3** (Figure 3.12)
2WAY Deodorant UV

Prototype H-1 was made in Tetoknit Sillead fabric. It is 100% polyester and has a mesh design. The visible holes in the fabric allows air to flow, so it will be helpful to help the skin to breathe during workout. Moreover, the mesh design also gives out the sporty vibe.

The design avoids showing up the actual shape of human's face by adding a folding element at the side part of the hijab, near ear position. This small detail will differentiate it to inner-hijab and give more value to the aesthetic side.

The 2nd and 3rd prototypes have similar design to the first one, but they have differentiation in colour and material. Prototype H-2 was made in white Tetoknit Sillead for variation, while 2WAY Deodorant UV fabric was used for prototype H-3. This fabric has thin and stretchy characters, so it is comfortable on your skin.

Wear

Five different types of wear prototypes were made. Materials are listed below:

- **W-1** (Figure 3.13)
Paircool (Black)
- **W-2** (Figure 3.14)
e-Gaya (Black), Tetoknit Sillead (Black), Tetoknit Sillead (White)

- **W-3** (Figure 3.15)
e-Gaya (White), Tetoknit Sillead (White)
- **W-4** (Figure 3.16)
Paircool (Black), Tetoknit Sillead (Black)
- **W-5** (Figure 3.17)
e-Gaya (Black), Tetoknit Sillead (Black)

Prototype W-1 was designed with Paircool, a light, smooth and cool fabric. The front layer has medium length, enough to cover the corner between legs. Meanwhile the back layer is very long, it reaches the back of the knee. The purpose of this design is to cover the bottom area even with extreme running movement. Double layers is given at the front part to give more confidence in the movement by covering the chest area.

While having the same design as the first prototype, prototype W-2 combines two different fabric in the making. The outer part of the apparel uses e-Gaya, while the inside layer and the hood part adopt Tetoknit Sillead fabric. The usage of Tetoknit Sillead is expected to give sporty vibe and more room for air circulation even though it is a two-layered clothing. This design will provide modesty and breathability at the same time.

The 3rd prototype is also a combination of e-Gaya and Tetoknit Sillead. This design was especially made to cover the chest and arms area. The double layer on the chest will enable user to hide the area. While the arms were designed loose to minimize the contact with skin.

Prototype W-4 wears the same material as the first prototype, Paircool, with the combination of Tetoknit Sillead for the inner layer and the hoodie. The diagonal design of the layers was created to camouflage the body line. The back part covers the bottoms area while the front part is shorter to facilitate extreme movement.

While having the same materials as the third prototype, Prototype W-5, implements a similar design to Prototype W-4. Whereas, this time the design has longer layers with slit at the sides. This is the only design that does not apply hoodie as a part of the attire.

All apparel designs have zippered sleeves at the wrist area. It will enable user to fold the sleeves easier when it gets hot or when they have to do wudhu (ritual washing to be performed in preparation for prayer) for praying.



Figure 3.10: Prototype H-1



Figure 3.11: Prototype H-2



Figure 3.12: Prototype H-3



Figure 3.13: Prototype W-1



Figure 3.14: Prototype W-2



Figure 3.15: Prototype W-3



Figure 3.16: Prototype W-4



Figure 3.17: Prototype W-5

Notes

- 1 Mbonu, Ezinma (2014) *Fashion Design Research*, London, GB: Laurence King Publishing. (Mbonu 2014a)
- 2 UCA. <http://schools.ucreative.ac.uk/fashion/staff-profiles/ezinma-mbonu>. Accessed December 11, 2016.
- 3 (Hues 2014)
- 4 Mbonu, Ezinma (2014) *Fashion Design Research*, London, GB: Laurence King Publishing. Pp.131 (Mbonu 2014b)
- 5 TORAY <http://www.toray.co.jp/>. Accessed December 8, 2016.
- 6 Bemberg. <http://www.ak-bemberg.jp/>. Accessed December 9, 2016.
- 7 AsahiKASEI Fibers Corporation supplies its original technologies and unique fiber materials. <http://www.asahi-kasei.co.jp/fibers/en/>. Accessed December 9, 2016.
- 8 FUJIX is a company which manufactures high quality yarn with high function and abundant colour. <http://www.fjx.co.jp/english/index.html>. Accessed 10 December, 2016.
- 9 Image source: Pinterest. <https://jp.pinterest.com/>

Chapter 4

Evaluation

4.1 Evaluation by Consumer

To evaluate the design concept explained in the previous chapter, experiments with ten subjects were conducted in Jakarta, Indonesia and Tokyo, Japan. The evaluation was focusing on aesthetic, functionality and comfort of the design of each items. Since the design of the pants is all the same, it is not included in the key factor of the evaluation. Instead, it will be merged with the top wear.



Figure 4.1: Subject I, F, A

Target Users

Ten Muslim women who wear hijab were chosen to wear one of the prototypes. Two of them have high-level activity of running while the other eight are casual runners.

Experimental Setup

Based on user's regular level or running activity, the target user will be asked to do sports activity while wearing the hijab and sportswear prototype. The activity of expert runners include 5KM run at a running event, while regular running menu (10 minutes walk, 5 minutes run, 10 minutes walk, 5 minutes run)¹ will be applied to the casual runners. After the activity they will fill out a survey asking them to evaluate each products on several elements like aesthetic, mobility, breathability, comfort, modesty and size, on a 1-5 scale (1 is very bad and 5 is very good). Lastly, they will go through an in-depth interview to find more specific feedback on the design².

Table 4.1: Subject

	Hijab	Wear	Level	Place
Subject A	H-1	W-2	Expert	Jakarta
Subject B	H-3	W-2	Casual	Jakarta
Subject C	H-1	W-1	Casual	Tokyo
Subject D	H-1	W-4	Casual	Tokyo
Subject E	H-1	W-5	Casual	Jakarta
Subject F	H-2	W-3	Expert	Jakarta
Subject G	H-2	W-4	Casual	Jakarta
Subject H	H-3	W-5	Casual	Tokyo
Subject I	H-3	W-1	Casual	Tokyo
Subject J	H-3	W-3	Casual	Tokyo

Results

Prototype H-1

As seen in Table 4.2, this hijab prototype has a good air circulation for both casual and expert runners. Even though the average mark of other elements are



Figure 4.2: Hijab prototypes

Table 4.2: Evaluation of Prototype H-1

	Aesthetic	Mobility	Breathability	Comfort	Modest	Size
Subject A	5	5	5	4	4	5
Subject C	5	4	5	4	5	3
Subject D	5	5	5	5	4	5
Subject E	4	5	5	4	4	5

generally good, there is still room for improvement for comfort and modesty in this prototype. From the the interview, subjects mentioned that they found some difficulty to wear and keep their hair inside the hijab compared to normal hijabs. Moreover, some strict Muslim women may avoid to wear this since the mesh fabric resulting in slightly showing their ear and neck when the hijab is worn without hoodie.

Prototype H-2

Table 4.3: Evaluation of Prototype H-2

	Aesthetic	Mobility	Breathability	Comfort	Modest	Size
Subject F	4	4	5	5	2	4
Subject G	5	4	5	5	3	3

According to the data shown in Table 4.3, the second prototype has a really good feedback on breathability and comfort. However, because of the colour and the holes in the fabric, the hair and skin of the subjects were clearly shown,

resulting in bad review on the modesty point.

Prototype H-3

Table 4.4: Evaluation of Prototype H-3

	Aesthetic	Mobility	Breathability	Comfort	Modest	Size
Subject B	5	4	5	5	5	3
Subject H	3	5	4	4	3	5
Subject I	4	3	5	5	5	4
Subject J	5	5	4	5	5	5

The design of this prototype is closer to regular inner-hijab sold in the market. From Table 4.4, hijab prototype number 3 does not show any distinctive quality. It has generally good review on breathability and comfort, but need a lot of improvement here and there in other elements. Subject stated that wearing it for long may cause headache since it is too fit to their head.

Prototype W-1



Figure 4.3: Prototype W-1

Table 4.5: Evaluation of Prototype W-1

	Aesthetic	Mobility	Breathability	Comfort	Modest	Size
Subject C	5	5	5	4	5	4
Subject I	5	4	5	5	5	5

The prototype for the top wear number 1 has a generally good result especially in the aesthetic, breathability and modesty, see Table 4.5. The subjects said that design of the prototype covers subject's body line and skin. In addition, the long wing at the back does not bother their movement due to the side partitions and lightness of the fabric. However, for high-level activity it is recommended to have something to attach the hoodie and the hijab to stay in place.

Prototype W-2



Figure 4.4: Prototype W-2

Table 4.6: Evaluation of Prototype W-2

	Aesthetic	Mobility	Breathability	Comfort	Modest	Size
Subject A	5	2	3	3	5	5
Subject B	5	3	5	4	5	3

According to the results in Table 4.6, subjects find this prototype as aesthetically good and modest. However, after a long run by the expert runner, the design doesn't support mobility, breathability and comfort anymore. The expert runner suggests that the fabric is good for daily work out, but not serious exercise. Other subject said that the arm zipper is very convenient for taking wudu (ritual ablution before daily prayer) and when it gets hot.

Prototype W-3

From Table 4.7, we can say that the breathability of this prototype is very good, although it needs a lot of improvement in the mobility. Subjects stated that



Figure 4.5: Prototype W-3

Table 4.7: Evaluation of Prototype W-3

	Aesthetic	Mobility	Breathability	Comfort	Modest	Size
Subject F	5	4	5	5	5	4
Subject J	4	3	5	3	4	5

although it is less comfortable than usual sportswear, it adds modesty and satisfactory in daily exercise. The design of the sleeve makes it easier to hide body line around chest area. However, because of the colour of the fabric, the design is transparent enough to show their inner wear. Furthermore, the hoodie kept falling when it is being used for a long run.

Prototype W-4



Figure 4.6: Prototype W-4

Meanwhile, the 4th prototype of top wear shows good aesthetic and mobility, but lack in modesty and measurement, see Table 4.8. The length of the front

Table 4.8: Evaluation of Prototype W-4

	Aesthetic	Mobility	Breathability	Comfort	Modest	Size
Subject D	5	5	4	4	3	3
Subject G	5	5	5	5	3	2

part is too short that the subjects kept pulling the shirt down to cover the area between their legs. The good points are, the diagonal design of the front layer can covers the chest area and lightness of the fabric makes it very easy to move. In addition the hoodie and the hijab were able to stay in place because of the friction between the mesh material. Subjects suggest to lengthen the sleeves or give band at the wrist area to make it stay.

Prototype W-5



Figure 4.7: Prototype W-5

Table 4.9: Evaluation of Prototype W-5

	Aesthetic	Mobility	Breathability	Comfort	Modest	Size
Subject E	5	2	4	4	4	2
Subject H	5	3	4	4	3	5

According to the results seen in Table 4.9, subjects evaluate that the design is very aesthetic. However the size is too small and it affects the mobility while doing exercise. Subjects considered the layering of the top wear can avoid skin showing even if it has slit and the movements are quite active. However, the area

of the mesh under the layer should be smaller so it does not easily shown when user moves actively.

4.2 Proof of Concept

Ten Muslim women living in Tokyo and Jakarta cooperated in the experiment and gave evaluation on five types of wear and three types of hijab prototypes. From the experimental results, it is found that the prototype is comfortable for daily exercise. With some improvement, this collection can fulfil the demand of Muslim women who wants to keep fashionable and modest look while doing sports. The overall conclusions will be explained in Chapter 5.

Notes

- 1 Brown, Richard L. (2014) “Beginning Training” in *Fitness Running*, p. 145, Champaign, UNITED STATES: Human Kinetics. (Brown 2014)
- 2 Gallhofer, Saris Willem E. Gallhofer Irmatraud N, Irmtraud N. (2007) *Design, Evaluation, and Analysis of Questionnaires for Survey Research*, Hoboken, UNITED STATES: Wiley, pp.109-112. (Gallhofer 2007)

Chapter 5

Discussion

5.1 Conclusion

The objective of this research is to design modest sportswear to provide comfort in daily sports activities, especially running, for Muslim woman wearing hijab. It aims to establish an opportunity for Muslim women to participate in sports activities. The modest sportswear was designed for Muslim women wearing hijab around the world, who have interest in sports activities and fashion, and has been evaluated by Muslim women wearing hijab in Japan and Indonesia.

In this research, three types of hijab and five types of wear prototypes were made. Two hijab prototypes were made of mesh weave and come with two different colours, while the other one was made in special high-quality fabric. The normal hijab has a limitation in breathability, it is insufficient for exercise since it collects the heat and sweat within the fabric. The prototype being produced is using superior sweat-absorbing and quick-drying fabric, eliminating the worry for stuffiness during working out. The design is also fashionable in terms of shape, colour and vibe.

Five kinds of wears were made with different designs. It is designed mainly to hide the skin and the body line. Functional materials suitable for sports were also used. All of the fabrics are ideal for sports activities, excellent in sweat-absorbing and quick-drying function. With expanded design, each part of the body can be hidden even when people move actively. Also, the superimposed layers can blurred out the body lines. It is advised to use mesh weave fabric inside the layer so that the double layer of the design does not appear as bulky.

There are several interesting findings from the research. Those are:

- Users are satisfied with the new design of sportswear.
- Since the materials are all very light, expanded design does not bother the mobility of the design.

- Mesh fabric is very good for air circulation and motion security, but the holes shows up the skin and hair of the users.
- Dark colours help to camouflage body lines.

Limitation

The prototype was designed based on the size of the mannequin. The researcher selected subjects whose size is close to the prototype as much as possible, but after all, there was a problem that for some subjects were too tight or too big. For this research the researcher aimed to produce sportswear which is relatively spacious, but when some subjects with a large body size wore it, the body line was showed than it was supposed to be. However, there was a result that those subjects still felt the prototype was modest enough for Muslim women wearing hijab.

5.2 Future Works

Based on the results of evaluation and interview, it is possible to point out several possibilities for future research of modest sportswear. To improve the design, below are some feedbacks from the users:

- It is advisable to have something to keep the hoodie in place with the hijab.
- Double layering in the hijab will be necessary to cover the skin and hair of users.
- The size of some components in the prototype should be adjusted to support comfort, mobility and modesty.

References

- Asher, Saira (2016) "The moment hijabs dazzled the New York Fashion Week catwalk," <http://www.bbc.com/news/world-asia-37381770>, Accessed December 15, 2016.
- Brown, Richard L. (2014) *Fitness Running*, Champaign, UNITED STATES: Human Kinetics, pp.145.
- Etherington, Rose (2011) "Sports Hijab by ResportOn," <https://www.dezeen.com/2011/06/07/sports-hijab-by-resporton/>, Accessed December 10, 2016.
- Gallhofer, Saris Willem E. Gallhofer Irmtraud N, Irmtraud N. (2007) *Design, Evaluation, and Analysis of Questionnaires for Survey Research*, Hoboken, UNITED STATES: Wiley, pp.109-112.
- Ho, Dreher Tanja, Christina (2009) *Beyond the Hijab Debates*, Newcastle-upon-Tyne, UNKNOWN: Cambridge Scholars Publishing, pp.75.
- Hues, Langston (2014) *MODEST STREET FASHION Vol.1*, Jakarta Selatan: PT. PARAGON TECHNOLOGY and INNOVATION.
- Klein, A F (2013) *Religion Of Islam*, Independence, UNKNOWN: Taylor and Francis, pp.38.
- Lewis, Reina (2013) *Modest Fashion : Styling Bodies, Mediating Faith*, London, UK: I.B.Tauris, pp.3.
- Mbonu, Ezinma (2014a) *Fashion Design Research*, London, GB: Laurence King Publishing.
- Mbonu, Ezinma (2014b) *Fashion Design Research*, London, GB: Laurence King Publishing, pp.131.

REFERENCES

- Nonaka, Yo (2015a) *Fenomena Fashion Muslim di Indonesia*, Bunkyo-ku, Tokyo: Fukumura, pp.9.
- Nonaka, Yo (2015b) *Fenomena Fashion Muslim di Indonesia*, Bunkyo-ku, Tokyo: Fukumura, pp.167-180.
- Nonaka, Yo (2015c) *Fenomena Fashion Muslim di Indonesia*, Bunkyo-ku, Tokyo: Fukumura, pp.155-162.
- Sarkar, Monica (2016) "H&M's latest look: Hijab-wearing Muslim model stirs debate," <http://edition.cnn.com/2015/09/29/europe/hm-hijab-model/>, Accessed December 15, 2016.
- Venkatraman, Hayes Steven George, Praburaj (2015) *Materials and Technology for Sportswear and Performance Apparel*, Boca Raton, UNITED STATES: CRC Press.
- Yanai, Yumiko (2013) "Standing up from disqualification disposition, "Nadeshiko" wearing hijab. Muslims fighting in women's soccer.," <http://number.bunshun.jp/articles/-/384617>, Accessed November 27, 2016.
- YOTKA, STEFF (2016) "Uniqlo' s Collaboration of Hijabs and Ready-to-Wear With Muslim Designer Hana Tajima Is Coming to the U.S.," <http://www.vogue.com/13400487/muslim-designer-hana-tajima-hijabs-uniqlo/>, Accessed December 13,2016.
- Yusof, Maryam (2012) "Sports Hijabs for the Active Muslimah," <http://www.aquila-style.com/lifestyle/sport-lifestyle/sports-hijabs-for-the-active-muslimah/18719/>, Accessed November 27, 2016.

Appendix

A Experiment

		1	2	3	4	5	
Hijab							
1. Aesthetic	Very Bad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very Good
		1	2	3	4	5	
2. Mobility	Very Bad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very Good
		1	2	3	4	5	
3. Breathability	Very Bad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very Good
		1	2	3	4	5	
4. Comfort	Very Bad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very Good
		1	2	3	4	5	
5. Modest	Very Bad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very Good
		1	2	3	4	5	
6. Size	Very Bad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very Good
Wear							
1. Aesthetic	Very Bad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very Good
		1	2	3	4	5	
2. Mobility	Very Bad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very Good
		1	2	3	4	5	
3. Breathability	Very Bad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very Good
		1	2	3	4	5	
4. Comfort	Very Bad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very Good
		1	2	3	4	5	
5. Modest	Very Bad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very Good
		1	2	3	4	5	
6. Size	Very Bad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very Good

Figure A.1: Evaluation sheet



Figure A.2: Subject A (30 years old, expert runner, Indonesia)



Figure A.3: Subject B (19 years old, casual runner, Indonesia)



Figure A.4: Subject C (24 years old, casual runner, Japan)



Figure A.5: Subject D (25 years old, casual runner, Japan)



Figure A.6: Subject E (19 years old, casual runner, Indonesia)



Figure A.7: Subject F (22 years old, expert runner, Indonesia)



Figure A.8: Subject G (17 years old, casual runner, Indonesia)



Figure A.9: Subject H (23 years old, casual runner, Japan)



Figure A.10: Subject I (27 years old, casual runner, Japan)



Figure A.11: Subject J (22 years old, casual runner, Japan)

B Concept Video



Figure B.1: Concept video

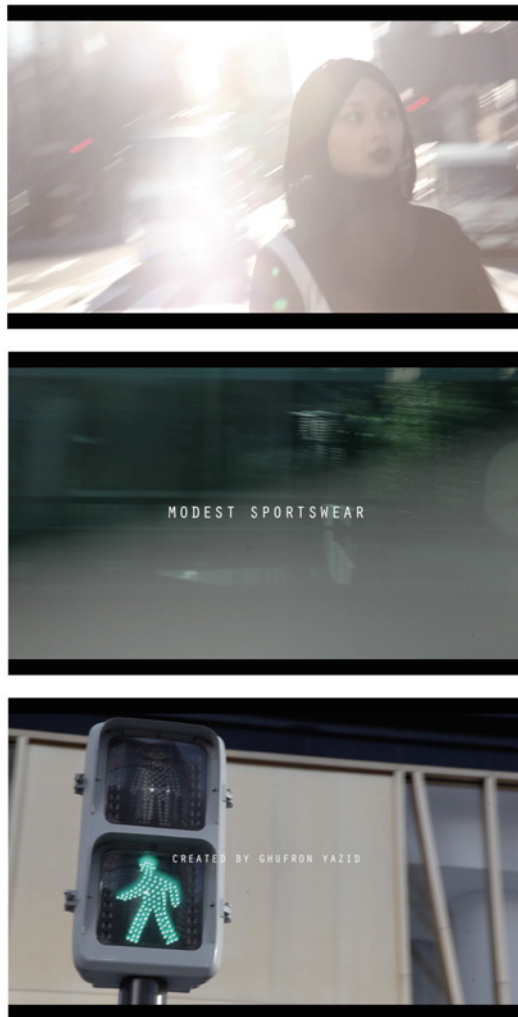


Figure B.2: Concept video