The Body to Die for: Appearance Aesthetics, Body Measurements, and BMI Analysis of Female and Male Runway Models (2012-2018)

Dissertation

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By

Iva Jestratijevic

Graduate Program in Consumer Sciences

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Dissertation Committee

Nancy A. Rudd, Advisor

Jay Kandampully

Sanja Ilic

Abstract

The identification of the self, through the extended surface of the body, makes a model's body a hanger for both clothes and occupational aesthetic values. Runway models are particularly vulnerable to low body measurement requirements as they need to fit perfectly into extremely small garment sizes that are preferred for promotional purposes. Knowing that competition in the modeling world is fierce, in order to work, models monitor and control their bodies' size to emulate desirable industry aesthetics. Consequently, the occurrence of self-reported and diagnosed eating disorders among this population has increased, but exact rates remain unknown. Despite existence of some markets where health certificates for working models are requested, the global fashion industry has failed to recognize the dangerous effects of its occupational body aesthetics. Furthermore, the probability that male models might also be affected with rigid occupational body requirements is underexplored.

This mixed method study aimed to examine the aesthetic norms that the fashion modeling industry uses to transform human bodies into cultural commodities. A convergent, parallel, mixed methods design was employed. In the first quantitative study, a secondary data set was utilized to quantify appearance manifestations through the exploration of body measurements, waist-to-hip ratios, and body mass index values. This industrial data set contained de-identified information on 609 international models of both

genders who participated in at least one fashion show during the official fashion week seasons in New York, Paris, London and/or Milan, over a six-year time period (2012-2018). In the second, qualitative study, a visual content analysis was undertaken to qualify occupational aesthetics and establish a benchmark on appearance requirements for professional modeling as an occupation. Images for forty models (20 female and 20 male models), the top new talents for the Fall/Winter 2018 season, were extracted from the popular industry website, Models.com. Salient appearance attributes under investigation in this phase included *gender, age, and facial and body appearance cues*. The rationale for collecting both qualitative and quantitative data was to form a comprehensive analysis of occupational aesthetics and to bring greater insight into the problem of such a restrictive aesthetic in the modeling industry than would be obtained by using either type of data individually.

This research aimed to inform occupational health policy makers to foster internal industry change, where healthier visual standards would be required, and the modeling industry would be closely inspected for the well-being of the modeling labor force. Consequently, internal aesthetic changes within the industry would raise the visibility and promotion of bodies that vary in shape, color, ability, and age, within the mainstream cultural and representational domain of advertising and social media promotion, thereby potentially affecting greater consumer body satisfaction and public well-being.

Dedication

To my family,

Nikola, Roman, Fedor, Nika and Nestor Jestratijevic

Acknowledgments

Models who once promoted new fashions suddenly became commodities conforming to the latest fashionable body style. The identification of the self, within the extended surface of the body, makes a model's body a hanger for both clothes and occupational aesthetic values. To fit into occupational aesthetic requirements, models must be so adaptable, ready to modify, or even ready to radically transform their material selves. The truth is that it takes time, and strenuous emotional and physical work. Nevertheless, this process is hardened as each individual in the modeling industry feels entitled to comment on other models' aesthetic deficiencies as part of their daily job routine. For models who are teenagers, all those injustices may have tremendous consequences for personal growth…. It took time for me to understand my personal experience as a professional model as it inspired my greater interest in fashion modeling as an occupational and cultural phenomenon. Starting at the age of sixteen, I worked more extensively as an international model for five years. Even after I quit modelling, for more than a decade I had an active industry role, collaborating with female and male models, agents and designers. These same questions, and numerous similar models' stories have inspired me to look back and to investigate modeling as a complex topic that deserves greater academic attention.

I greatly appreciate the support of my committee members, Dr. Sanja Ilic and Dr. Jay Kandampully who showed enthusiasm and dedication. With the help and support of my mentor, Dr Nancy Ann Rudd, who has devoted her career to exploring body image, this research represents a joint achievement. Through her unique skills as a mentor, Dr Rudd has helped me to reclaim what all women everywhere are entitled to by way of birthright:

that as women, no matter what body we are born with, we are no less important than anyone else.

It is my hope that this research will contribute to the increasingly important body of work focusing on body-image and body-positivity, as women continue to face not only extreme gender inequality, but women also must contend with unprecedented levels of sexual harassment and sexual assault, and women must face toxic pressures to conform to unrealistic aesthetic standards of beauty.

Iva Jestratijevic

Vita

2016 to present	Ph.D., Department of Human Sciences (focus in Fashion & Retail Studies), The Ohio State University
2010	PhD. Theory of Art and Media, University of Belgrade
2004	B.A. International Business, European University, Belgrade

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Fields of Study

Major Field: Consumer Sciences

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Chapter 1: Introduction

1.1. Defining the context

In September 2007, just before the Milano Spring-Summer fashion week shows, a billboard appeared in the city center. In the typical manner of fashion advertisements, the billboard showed a young, naked, and very pale woman laying on her side, with her face turned directly to the viewer. Large font letters featured the words "No Anorexia" and the woman in the campaign was French model Isabel Caro, who died from anorexia three years after the campaign was launched, at the age of 28. Given the preoccupation of young women with the glorification of thinness in media culture, Caro was asked in a fashion week press conference whether her advocating against the size zero body aesthetic might have an unintended opposite effect. Caro replied:

"I hope not. To see my tailbone like an open wound, I show myself as I am. I'm not beautiful, my hair is ruined and I know I will never have long hair again. I've lost several teeth. My skin is dry. My breasts have fallen. No young girls want to look like a skeleton. You couldn't believe anyone would want to look like that. I don't think there's any question about it" (Ferreday, 2011, p. 10).

The naked body of Isabel Caro represents the realistic portrayal of the overly thin body standard in fashion, and this body ideal continues to be found beneath all the glamourous couture clothing a model might wear. With the continued demand for thin models in the

fashion industry, the occurrence of self-reported and diagnosed eating disorders among this population has increased, but exact rates remain unknown (Rodgers et al., 2017; Record & Austin, 2015; Mears, 2010; Preti et al., 2008; Santonastaso, Mondini & Favaro, 2002).

International recognition of the problem of eating disorders did not occur before 2006, when Uruguayan model Luisel Ramos (age 22) died of heart failure immediately after stepping off the runway in South America. Her sister Eliana (age 18), also a model, died from a heart attack a year later (Lennon, Johnson & Rudd, 2017). It was estimated that at the time of death, the sisters had a BMI of 14.5 (Gladstone, 2016). Later that year, Brazilian fashion model Ana Carolina Reston passed away with a BMI of just 13.4 (Gladstone, 2016). In response to the deaths of the female models, some fashion industries took steps towards incremental change. Participation in Fashion Week in both Madrid and Milan started requiring a healthy BMI of 18.5, which is the lowest BMI in the average weight category according to World Health Organization (WHO) standards.

Despite the existence of some markets where health certificates for working models are requested, the global fashion industry has failed to recognize the dangerous effects of its occupational body aesthetics. Furthermore, both academic and industry sources failed to explore and test the probability that male models might also be affected with rigid occupational body requirements (Friedman, 2017; Rodgers et al., 2017; Record & Austin, 2015; Preti et al., 2008; Bogár & Túry, 2017).

1.2. Defining the model as type of labor

According to New York State Labor and Compensation Law, a professional model is someone who performs modeling services for the purposes of advertising and /or purposes of trade, and the service includes appearing in photographic sessions or on runways during live shows for remuneration (New York State Labor and Compensation Law, 1992, section 511, subparagraph 3, chapter 668). The services that models perform are further defined to include: the appearance of a professional model in photographic sessions or the engagement of such model in live, filmed, or taped modeling performance for remuneration (New York State Labor and Compensation Law, 1992, section 511, subparagraph 3, chapter 668), and transferring the legal right to the client (a retail store, manufacturer, an advertising agency, a photographer, or a publishing company) to use their image for advertising purposes of their company, brand or designer (refer to New York State Labor and Compensation Law, 1992, section 511, subparagraph 3, chapter 668).

From a sociologist's standpoint, this definition of modeling services, and the type of work models perform, perpetuate a long debate about modeling job conceptualization (see Wissinger, 2007; Mears, 2011; Wissinger, 2012; Entwistle, & Wissinger, 2006; Holla, 2016). From an employment perspective, in the United States, and in the majority of global modeling markets, models are defined as independent contractors represented by a modeling or casting agency, through which they are hired per job with other clients (Menger, 1999; Jones, 1970; Mears, 2011). Thus, modeling is an unstable, freelance, and short-term job with no benefits, in terms of health insurance, retirement or

medical/personal leave (Menger, 1999). Models as independent contractors do not qualify for coverage afforded by the American with Disabilities Act, as the Act applies to employees only (Simmerson, 2013).

Furthermore, as they are not defined as regular employees, they cannot enjoy common working rights or benefits. For example, the duration of the working day is not defined, and breaks are not mandatory, minimum wage is not set, and in some countries, there are no limits on the age of workers (Simmerson, 2013). Because of all those unique specifics, sociologists refer to modeling as bad type of job (Mears, 2011; 2013), as in addition to previously discussed points, modeling is also unstable in terms of aesthetic preferences, uncertain in terms of future hiring, competition is very high, and in many markets for the most of jobs, average model wages are low to average. Nevertheless, the work done by models is significant, as their images and bodies are used for promotional, and clothing display services, and the entire fashion industry strongly depends on the modeling workforce.

1.3.Defining the problem

Models represent a unique type of labor. Models internalize occupational aesthetic norms and embed them in their own material self-hood (Soley-Beltran, 2006). The identification of the self, within the extended surface of the body, makes a model's body a hanger for both clothes and occupational aesthetic values. Hence, instead of *having a body* as a matter of instrumentality that fulfills professional duties (e.g. bodies that drive, work, write, carry), *being a body* for professional models means consciously doing and

experiencing self-commodification. Thus, examining models through the lens of socio-psychology provides a unique position to examine the paradoxical notion that modeling is a specific type of aesthetic labor, where appearance and body work is directly linked to self-commodification.

Due to a model's unique job description, they might experience their body as both an integral and external part of the self (object that is worked upon), which might have significant negative effects on appearance investment behaviors, involvement in risky behaviors (e.g. excessive exercise, supplement use, and the most common, starvation) that pose dangers to a model's overall health (Rodgers et al., 2017; Record & Austin, 2015; Preti et al., 2008). Body size and measurement differences between commercial and high-fashion female models have been explored, and high-fashion models are found to be particularly vulnerable to low body measurement requirements as they need to fit perfectly into extremely small dress sizes that are preferred for promotional purposes (Mears, 2013).

Extreme thinness among professional female models has been discussed in previous academic literature, and the phenomenon has acquired a corresponding term. Katherine Records and Bryn Austin introduced the term "Paris thin" to label the aesthetic eligibility for models to display high-fashion (haute couture) design (2015, p. 206). The term itself was used by former *Australian Vogue* Editor Clements Kirstie, who used the term to criticize the fashion industry for using unrealistic body parameters for displaying fashion on live models (Clement, 2013). Hence, the term *Paris thin* refers to the idealization of skeletal women that are desired for fashion display on the French fashion week scene particularly known for its rigid body standards.

Nevertheless, a skeletal body ideal is not preferred exclusively in the female modeling realm, nor exclusively on the French modeling scene. As a matter of fact, skeletal bodies exist as normative occupational standards despite the gender, and the place. To test that assumption, and to explore how occupational demand for extreme thinness transforms human bodies into cultural commodities, affecting body measurements, waist-to-hip ratio and BMI value changes of runway models of both genders were examined.

1.4. Defining the purpose, objectives and significance

The overall purpose of this research was to examine and qualify a model's occupational aesthetics, and to assess and quantify how the occupational demand for extreme thinness affects body measurements, waist-to-hip ratios and BMI value changes for runway models of both genders (N=609; panel: 2012-2018).

This research had two main objectives. The first research objective was to quantify appearance manifestations of female and male models through the exploration of their body measurements, waist-to-hip ratios, and BMI values. The second research objective was to qualify the visual aesthetics of female and male high-fashion models by exploring their salient appearance attributes including *gender, age, and facial and body appearance cues*. While integrating quantitative evidence, and comprehensive details of a model's visual appearance attributes, this study aimed to establish a benchmark in the literature on body aesthetics for professional modeling as an occupation.

By providing quantifiable baseline evidence for rigid body parameters that are still dominant for the high-fashion modeling workforce, the findings of this study will benefit models. This research should encourage occupational health policy makers to foster internal industry change, where healthier visual standards would be required, and closely inspected for the well-being of the modeling labor.

Consequently, the research findings might benefit the general public, as change of unhealthy occupational aesthetics in the modeling industry can potentially raise the visibility of bodies that vary in shape, size, color, ability, and age, within the mainstream cultural and representational domain, thereby affecting greater body satisfaction, and public well-being.

Chapter 2. Literature review

2.1. Historical emergence of fashion models or human "dolls"

The promotion of fashion can be tracked even long before industrial societies were established. Fashion dolls, as first inanimate, miniature models were used in most pre-industrial societies to promote the latest national fashion. Textile trade in France, and throughout most of the seventeenth- and eighteenth-century societies constituted the largest part of the national economy, and consequently the market for fashionable goods expanded beyond royal, and aristocratic circles and over the national borders (Wilson, 2003). In the late seventeenth century, Louis XIV introduced the latest Paris fashion by sending human-size dolls to other parts of Europe (DeJean, 2007). Using fashion dolls, tailors in other parts of Europe imitated the clothing, accessories, shoes, umbrellas, and wigs and the fashion trends started diffusing into European and international scenes. The cultural emergence of the animate model is inherent to further commercialization of international societies, and it led to the opening of the first artisan houses (known as ateliers), department stores and the development of early consumer culture (Evans, 2001).

The rise of artisan luxury houses in the nineteenth century France, instead of using wax or wooden dolls or dummies, required new and innovative strategies to make their creations appealing to the growing consumer audience. Parisian textile retailer Gagelin employed a young woman to walk around store premises and display shawls for clients. In 1847, Charles Frederick Worth, a British man and future designer, was hired at Gagelin to

sell textiles to royal clients while the house "mannequins" (the name for the first models) paraded for the clientele (Evans, 2013, 2001). Later on (1858-59), Worth opened the first luxury fashion atelier in Paris, called The House of Worth. His wife Marie Vernet became the "in- house" model for House of Worth, and they used services of other models available at the time to organize seasonal, in-house, model parades. Between 1908 and 1910, seasonal fashion shows were presented at a fixed time in the afternoon in all great fashion houses in France (e.g. Worth, Poiret, Vionnet, Paquin and Doucet). Sometimes, shows were repeated daily for several weeks, and they were popular and well-attended (Evans, 2013, 2001). In that period of time, displaying the latest designer creations using live models as designer emblems was absolutely sensational (Steele, 1998). As Alice Ivimy's in *A Woman's Guide to Paris* (1909) described, in France, "the most striking and audacious gowns are worn by mannequins or dressmakers' models who are paid to be stared at." (Steele, 1998, p. 170)

Mannequin parades started to take on a character of their own and they started evolving soon after. For example, in London in the early twentieth century, the first model parades emerged as a part of the theater performances organized by British costume designer Lucile or Lady Duff Gordon. Similar to what she was creating for the Theater, when Lucile opened a private atelier, she raised the stage in the front room, so that models could parade and display creations. Instead of numbering each garment in her collections, she introduced the garments by names (e.g. Gown of Emotions, Love in the Mist), and sent decorated invitation cards to her clientele. Models that worked for Lucile belonged to working-class neighborhoods in the London suburbs, and during the parades they barely

smiled and never spoke (Evans, 2001). During collection displays that lasted around three hours, Lucile had a live orchestra that played music, while tea was served to the clientele, and overall the atmosphere reminded clients more of a party than a business event. Apart from the artistic aura of the fashion event that became apparent in Lucile's fashion house, the commercialization of fashion was happening simultaneously.

From the early twentieth century, fashion shows spread from French luxury designer houses to department stores in Britain and America. They also started gaining higher international recognition since designers accompanied their models on promotional tours around the world. In 1913, Paul Poiret promoted his creations around America. Paquin followed the same path and opened his shows to the public; he charged ticket prices of $3, rising to $5 because they were so popular (Evans, 2001). In 1914, the first charity fashion show was organized in New York by the fashion magazine Vogue, and after that, the dominance of French fashion was challenged by American designers. Another innovation was brought into the fashion scene. Designers not only travelled internationally, but models began to be required for modeling purposes on this growing international scene (Evans, 2013).

In November 1924, Jean Patou, Parisian designer, announced the first public request for models via an advertisement in the New York Times:

"Mannequins wanted for Paris"

Jean Patou, the Parisian couturier, desires to secure three ideal types of beautiful young American women who seriously desire careers as mannequins in his Paris atelier. Must be smart, slender, with well-shaped feet and ankles and refined of manner. Sail within

three weeks. Attractive salary proposition, one year's contract and traveling expenses paid both ways. Selection to be made by a jury at the offices of Vogue, 14th Floor, 19 West 44 Street. (Evans, 2008 p. 243)

Soon after the advertisement was published, he was asked to justify his decision of hiring American models over the French models. Patou said:

I went to America for my mannequins for many technical reasons. In the first place, there is a great difference between the French and the American silhouette. Sport has made a great plastic difference. The French girl is a Venus and the American a Diana, with muscles well developed, short bust and long, fine legs. I am persuaded that on Olympus Venus was dressed like Diana, for Diana is the typical "young demoiselle" and Venus the typical woman. The Anglo-Saxon Nordics are slim and rangy; but the French, being of Mediterranean stock, are rather short from the waist downward. (NYT, 15 February, 1925)(Evans, 2008 p. 245).

In response, five hundred young women turned up at the offices of Vogue. As historians described, it was apparent that Jean Patou was looking for models with a more desirable fit for his gowns, and based on the final selection of the models, it was clear that he searched for a human shape with very tight hips. Designers again explained his selection claiming that 'The Anglo-Saxon has the figure so'—making stiff, perpendicular motions—'the French are so'—making curved lines from side to side." (NYT, 2 November, 1924) Selected models were young, 17 and 18 years old, with blond or light-brown hair, and Patou avoided dark-haired models because he was looking for an authentic American type, and he felt the brunette denoted a Latin origin." (Evans, 2008)

Even this early designer act of model selection revealed how appearance characteristics and specific social identities (gender, ethnicity and age) directly translated into an economic value. Models' bodies became directly approximated to the generation of designers' profit, and her visual and aesthetic power became understood in terms of sales. For designers like Patou, it was very clear that some type of models' looks and personality simply "sell" their creations better. Consequently, they start favoring some models more than others.

As described by dress historian Caroline Evans (2008, p. 257):

"Mannequin Lola is the best in the world (…) says she can outsell an ordinary mannequin six or seven to one. The reason is her great chic, could be calculated actuarially. The mannequin, tall and slender in reality, could also be represented as a tall and slender column in a bar chart, the taller the better, as Patou's efficiency department made the translation from centimeters to centimes (monetary value)."

By 1925, business entrepreneurs noticed growing market demand for attractive models, and the modeling agencies started popping up in America. In 1923, John Powers opened the first model agency for "girls' careers" in America. He referred to his models as "commodities which must meet certain requirements" and referred to himself as a "broker in beauty." (Evans, 2008, p. 257; Jones, 1970) Within seven years of being in the business, he had more than four hundred models in his company portfolio. Models' jobs on the America market started rapidly growing as New York fashion shows exhibited for several days in a row, and the organization was very similar to today's fashion week (a fashion industry event, lasting one week where designers display latest collections in runway shows

to buyers and media). Unlike the model parades in the French artisan houses that targeted primarily royalty and aristocracy, American shows were opened to the broader public. Even though organized in the modern department stores, shows had exclusivity, and those social occasions gathered two to three thousand people (Evans, 2013).

2.2. Female fashion models, appearance influences and media

Female models that emerged on the American scene in the late 1920s already had a uniform appearance aesthetic. For some art and dress historians, that aesthetic was recognized as a reflection of the rising modernization of industrial society (Craik, 1994). Adjusted to flapper, boyish, and straight-line dresses that were popular at the time, models had short hair, and they were slim and tall. While the idea of emerging working-class girls was applauded by the American press, in France, their careers were often disapproved of by journalists and the larger public. Unlike retail merchants who had to have a nice personality, mannequins or models did not interact with clients. Rather they were hired to display more-or-less "dressed bodies" to the public, and while doing that they were required to remain serious and silent. Additionally, the fact that models were dressing themselves in clothes for money rather than for pleasure, was seen as especially troublesome by people who believed that women should not sell their looks for financial gain (Evans, 2008). Because of all those reasons, journalists in France often described mannequins as "passive dolls" that stood between high and low culture, and between art and industry.

From a cultural standpoint, however, female models have a significant symbolic and cultural presence. During the entire twentieth century, it was evident that models served as living exemplars of cultural appearance aesthetics, as they shaped body and beauty norms that are valued in a modern society (Evans 2001, 2013; Grogan, 2016; Silverstein, et al., 1986b). After the First World War, when flapper fashion was propagated by designers and the media, female models had a boyish, straight-body and flat-chested figure (Orbach, 1993).

As Evans (2003) describes, an anti-war aesthetic was reflected in the machine-like motion of the model, whose functional and anti-decorative body moves across the catwalk. As a matter of fact, in Western industrialized culture, the idealization of thinness has even been traced as far back as the 1920s, when fashion marketing significantly started shaping cultural standards of beauty (Gordon, 1990). During that period of time, photography was widely distributed in mass-market fashion magazines, using images of models to construct a fantasy ideal of how a woman's body should look. Moreover, these propagated fashion and clothing trends molded the female consumer body, because each look suited a particular body shape (Orbach, 1993).

Not surprisingly, in Western societies, women started increasingly resorting to dieting to get back their pre-adolescent body shape, and a breast-less, hips-less ideal (Silverstein et al., 1986a). Soon afterwards, the New York Academy of Science recognized a strong relationship between eating disorders and public preoccupation to develop and maintain a fashionable and thin body. Women started dieting, and they used various

compressive undergarments to flatten and suppress their body's silhouette, and these practices continued throughout the entire twentieth century (Caldwell, 1981).

Simultaneously, social pressure on women to conform to an idealized, and slender body shape was arising from different sources, including fashion media, beauty pageants and celebrities. For example, during the 1930s, the body measurements for Miss America winners were 32 inches in the bust area, 25 inches in the waist area, and 35 inches in the hips, while in the 1940s, only the bust area increased by 3 inches to a total bust measurement of 35 inches, while the other measurements stayed the same as in the previous decade (Grogan, 2016, p. 19).

Preference for large breast, small waist, and slim legs was also visible in the Hollywood movie industry of 1950s. Marilyn Monroe was the personification of such a trend, and she was photographed as the first Playboy centerfold (Grogan, 2016). Starting from 1960s, there was an evident move towards greater thinness. Female breasts also started becoming less visible, and less-emphasized via clothing. Personification of the new emerging aesthetic was definitely achieved by British fashion model Twiggy. Her flat-chested and thin, boyish figure and her svelte body weight of 96 lb (which would fit to the underweight category according to the World Health Organization) exemplified the female ideal in 1960s (Freedman, 1986).

Furthermore, slimness, became prominent social marker for youthfulness and popularity, and therefore it was quickly adopted across Western cultures and different

social groups (Orbach, 1993). Mazur (1986) notes that Miss America contestants in the 1960s were slimmer and taller than in the 1950s, with an increase of one inch in height, and a loss in body weight of 5lb by 1969. Morris, Cooper and Cooper investigated a trend toward a more "tubular or androgynous" body shape, which was created by the fashion and modeling industry across the span of a twenty-years period, starting from 1967 to 1987. Data was collected from one of London's model agency that supplied models to women's magazines such as Vogue, Cosmopolitan, Woman etc. Researchers found that across the explored time period, the height of models increased by more than 3 inches. The hip circumference was stable over time. Bust size increased by less than half an inch, but did not increase steadily. Similarly, waist size increased by less than half an inch. Increase in height and reduction in curves creates a more androgynous body shape that was portrayed across various fashion media. Consequently, researchers believed change in model's body shape led to greater body dissatisfaction and more dieting across broader female populations, exposed daily to idealized model's images (Morris, Cooper & Cooper, 1989).

Another team of researchers, Sypeck, Gray, and Ahrens, explored depiction of the ideal physical beauty as presented in American fashion magazine covers displaying models across a 40 year period starting from 1959 to 1999. Researchers acknowledged that over time, greater attention was placed on a model's body, instead of the headshot that was dominantly displayed in the past. Also, they found that images presented to the public took the form of very slim, androgynous women instead of the average women in society. That was found to be enormously negative for overall female body satisfaction, as for each year

between 1950 and 1999, more than 5,500,000 women who subscribed to the top fashion magazines were directly exposed to their content, while indirect exposure to the magazines is indeterminate due to the fact that magazine covers are exposed everywhere from supermarkets, beauty salons to offices (Sypeck, Gray & Ahrens, 2004).

Modeling industry preference for thinness continued through the 1980s, while in the 1990s, extreme thinness was even more salient. During the 1980s, fit and toned but still curvy female bodies were exemplified by top models Cindy Crawford, Claudia Schiffer, and Christy Turlington who ruled the world's runways. Their bodies were commonly fitted to U.S. dress sizes 6 (measurement wise: bust 36 inches- waist 25-26 inches- hips 37-38 inches). The 1990s revealed a definite departure from slim but physically fit-looking models to the emergence of extremely thin body types. Perhaps the most famous example of this particular aesthetic was Kate Moss, whose body resembled the body shape of Twiggy from the 1960s (Grogan, 2016). That particular skinny look got the name *heroin chic*, as models started to resemble heroin users, with telltale black eyes, and blue lips (Schoemer & Beals, 1996). In 1996, a model who was recovering from heroin addiction explains in an interview that the industry encourages models to be thin and look exhausted:

"They (the fashion industry) wanted models that looked like junkies. The more skinny (…), the more everyone thinks you are fabulous." (Schoemer, 1996, p. 51)

As thinness became a consistently growing trend, which was portrayed in popular magazines, various studies were conducted to investigate how women perceive body representations in beauty advertisements (Fallon, 1990; Grabe, Ward & Hyde, 2008;

Harrison, 2000; Grogan, 2016). They found that the most frequent highest exposure to idealized media images was correlated with higher body-dissatisfaction, (Silverstein et al., 1986a/b) which was mediated by social comparison processes, but was still consistent among different age categories (Harrison 2000; Hargreaves & Tiggemann, 2004; Lennon, Johnson & Rudd, 2017).

Interview-based studies brought up additional evidence that even when there was high discrepancy between advertised bodies and bodies of real women, women expressed a strong desire to obtain an unrealistic body appearance (Grogan, 2016; Lennon, Johnson & Rudd, 2017). For example, when looking at models' bodies as displayed in beauty product campaigns, one interview participant reported:

"They make me sick, they look too thin. But I would kill for one of their bodies." (Grogan, 2016, p. 124)

The Women's Unit of the British Labor government expressed great concern about the effects that media representation of models might have on young women's health, body image and eating disorders (Reid, 2000). They started publishing articles discussing the links between thin models in the media and public health, where unrealistic, polished models' bodies shifted the public perception of what a normal body looks like (Reid, 2000). Susan Bordo (2003) shares those concerns, concluding:

"These images are teaching us how to see. Filtered, smoothed, polished, softened, sharpened, rearranged. And passing. Digital creations (referring to digitally modified models' images), visual cyborgs, teaching us what to expect from flesh and blood." (Bordo, 2003, p. xviiii)

Research in fields as diverse as fashion studies, psychology, sociology, gender studies, media studies, and communication constantly remind female consumers about the negative influence that idealized media images might have on body image, and mental health. Among the general female population, body dissatisfaction is more prevalent than body satisfaction. In fact, as many as 95% of women are reported to be dissatisfied with their bodies or appearance (Rudd & Jestratijevic, 2019). Consequently, body dissatisfaction can be a motivation for practicing unhealthy or risky behaviors such as disordered eating or exercise, use of supplements, and invasive cosmetic procedures.

2.3. Emergence of male modeling and appearance influences

Unlike modeling work for women, which dates back to the 19th century, few modeling opportunities existed for men before the 1980s. In the late 1960s, four decades after the John Powers modeling agency for women opened in New York City, other modeling agencies began to represent male models as advertisers increasingly demanded appealing male bodies to sell clothing, cosmetics and perfumes (Grogan, 2016; Evans, 2001). As the demand for male models started intensifying, a slender, moderately-muscular shape became the Western cultural norm for masculinity, and it was considered to represent masculine strength and power (Monaghan, 2005; Aoki, 1996). Advertisements in the 1980s and 1990s reflected an important shifting point for the aesthetic representation of the male body, with increasingly rigid standards of muscularity and body perfection (Dworkin & Wachs, 2009). A mesomorphic, muscular body shape characterized by an average weight, and well-developed muscles on the chest, arms, and shoulders, with a slim waist and hips

became the ideal norm for modern men (Grogan, 2016). Low body-fat was the crucial element of this ideal physique, as it allowed the muscles to be more visible (Cafri & Thompson, 2004).

Academic literature recognizes that slender and muscular male model bodies are linked with aspirational goods aimed at men (Pope et al., 2000). As the male body became more visible in the context of popular culture, it became more scrutinized for its appeal. As the head of the male model division in the Storm modeling agency in Britain confirms, the desired look for a male model in the 1990s was a slim but muscular body type (Grogan, 2016). Different research studies revealed that raising the desire for muscles was often linked with lower self-esteem, and higher body dissatisfaction (Mishkind et al., 1986; Thompson & Cafri, 2007; Grogan & Richards, 2002), and an increased investment by men in their appearances (Gill, 2003; Gill et al., 2005).

Pope, Phillips & Olivardia, (2000) in the book *The Adonis Complex*, revealed that males at the end of twentieth century faced the same obsession to build an idealistic physical appearance that women have experienced for centuries. Aspirational goods aimed at men, new products and media culture placed increased aesthetic expectation for men to conform to the muscular, well-toned and idealized shape, which encouraged anabolic steroid use and even cosmetic surgery. Hence, growing numbers of men were found to take the quest for perfect muscles, skin, and hair so far as to cross the line from normal interest into pathological obsession (Bordo, 2003; Grogan, 2016).

Additionally, body dissatisfaction affected the entire male population despite their age. Studies found that boys as young as six or eight reported body dissatisfaction (Gardner, et al. 2000). According to Pope, Phillips & Olivardia (2000) millions of men suffer from loss of self-esteem, depression, compulsive binge eating, anorexia nervosa and bulimia. Countless others experienced some sort of body dissatisfaction, even when their look is closer to the cultural ideal (Grogan & Richards, 2002). Interview-based studies revealed that men have a clear vision how their ideal body should look. That ideal image includes a tall and muscular physique with wide shoulders, V shaped back, and a flat stomach (Ogden, 1992).

As raise in male retail and grooming markets increased since 1980s, and especially during the 1990s more young men started approaching modeling agencies (Nixon, 1996). The increasing interest of young men for modeling was found to be troublesome for some conservatives, who believed that modeling was not a typical masculine career (Entwistle, 2004). As men are expected to "act," rather than passively "appear," male modeling was for a long time stigmatized as being an "unmanly" activity (Entwistle, 2004). The idea that modeling was not a masculine type of job started slowly shifting among younger generations of men that were born during the 1980s and were raised surrounded by images of men in fashion advertisements (Entwistle, 2004).

Hence, with the beginning of the new century, when those new generations of men began working in the modeling industry, a growing number of successful male modeling careers can be traced. Soon afterwards, interest in fashion goods, the body, and appearance

became recognized as a universal phenomenon, rather than an area of feminine identity production. Aligned with the cultural erosion of the controversies about modeling being a feminine career, starting from the beginning of the twenty first century, male modeling gained a wider acceptance as a lucrative and desirable occupation. Consequently, a greater number of professional male models started emerging on the international modeling scene.

2.4. Immaterial labor and models as cultural intermediaries

Fashion modeling raises intriguing questions concerning the nature of the models' jobs, and personal and aesthetic values that such jobs entail. From a legal perspective, New York State labor and Compensation Law declares that a professional model is someone who performs modeling services for the purposes of advertising and /or purposes of trade (New York State Labor and Compensation Law, 1992). The services that models perform are further defined to include: the appearance of a professional model in photographic sessions or the engagement of such model in live, filmed, or taped modeling performance for remuneration (New York State Labor and Compensation Law, 1992, section 511, subparagraph 3, chapter 668).

Nevertheless, after they appear or perform services in the fashion session (that can be live or photographed or typed), models are required to transfer the legal right to the client (a retail store, manufacturer, an advertising agency, a photographer, or a publishing company) to use their image for advertising purposes of their company, brand or designer (refer to New York State Labor and Compensation Law, 1992, section 511, subparagraph

3, chapter 668). From a sociologist's standpoint, this definition of modeling services, and the type of work models perform, was appealing enough to perpetuate a long debate about modeling job conceptualization. Sociologists commonly argued that modeling services represent good examples of immaterial work organization, often referring to the term "immaterial labor" coined by Maurizio Lazzarato (1996).

The concept of immaterial labor refers to two different aspects of labor in the production of the informational and cultural content of the commodity (thing offered for sale, or market exchange) (Lazzarato, 1996). On the one hand, informational content of the commodity refers directly the workers' skills to generate and transmit information. On the other hand, the cultural content of the commodity refers to activity that produces the cultural content that is not recognized as "work" in the traditional sense (where work refers primarily to the process of material production). Rather, the cultural content of the commodity refers to activities involved in defining and fixing cultural and artistic standards, fashions, tastes, consumer norms, and, more strategically, public opinion (Lazzarato, 1996).

From that standpoint, studying models is of great importance for at least two reasons. Firstly, by performing modeling services for the purposes of advertising and /or purposes of trade, models create informational content that is "consumed" (observed and read) by a broad audience who is exposed to this created content (Entwistle & Wissinger, 2013). Informational content, in this specific case, may refer to visual and textual messages that advertisements generate in both direct and indirect ways (and as discussed previously, those contents have a significant impact on general audience).

Secondly, by appearing in a photographic session (and transferring all rights to their image) for remuneration, models agreeably sell their looks for financial gain (Evans, 2008). In other words, using the theoretical framework from Karl Marx, and later Arjun Appadurai, similar to all other "things" that are on the market for sale, models are commodities that circulate in the cultural domain (Marx, 1976; Appadurai, 1988).

As a matter of fact, from a commodification theory perspective, there is no sharp line between people and things (Appadurai, 1988). In consumer societies, such as the United States and a great part of Western world, everything is colonized by the market. As Appadurai suggests, "everything has a price, including blood, fame, information, body parts, athletes, and gene codes." (1988, p.18) Under that assumption, exploring and understanding models as a special kind of commodity has one additional aspect of importance. The process of commodification deserves to be closely examined as it operates simultaneously in three different directions. At first, the commodification process happens from the outside, on the external cultural level. From that standpoint, models are commodified from the "outside" market. Their looks, facies and bodies are colonized by the market, and consequently as other appealing commodities, the model's image (as a legal definition clearly indicates) is offered for sale.

While serving as the role of aesthetic "billboards" of consumer culture, there is the second commodification process that happens on an internal and very subjective level. Like the legal definition of models indicates, professional models agreeably appear in fashion (photographed, typed, live) sessions for remuneration, meaning that models consciously commodify themselves for financial gain. Thus, models intentionally embody aesthetic

values of the market, culture and the industry, and they work on their bodies, using their physicality to gain financial capital (Mears, 2011). Unlike the first two commodification processes that happen externally in the modeling markets, or on the more subjective level where self-commodification happens, the third process of commodification is happening, on the external cultural level, where models are no longer passive commodities, but active players. From that perspective, models as agents or authorities of beauty legitimation, provide primarily aesthetic content that defines fashions, tastes, consumer norms, and public opinion about what is beautiful, what is attractive and what is culturally and aesthetically valued (Lazzarato, 1996). In that particular scenario, models serve as role models, while the consumer body is commodified and affected.

To further explore this tension between models as taste makers and models as commodities, the conceptual term "cultural intermediaries" will be used. This term was coined by Pierre Bourdieu in Distinction: A Social Critique of the Judgement of Taste (1984, first published in 1979). Cultural intermediaries represent a group of taste makers and advertisers or "merchants," whose actual and symbolic work is part and parcel of a consumer economy where consumption happens through a value production process (consumption and production are simultaneous in all service industries, according to Kandampully, 2007). Fashion models as cultural intermediaries are not direct sellers of the products to consumers like retail merchants, for example. Models act on a more indirect and representational level. Like legal definitions of models indicate, on a visual and symbolic level, models create conditions for consumers to identify values in goods they

advertise and represent. Hence, models represent cultural intermediaries between advertisers, and consumers.

Furthermore, as Bourdieu (1984) suggests, to shape consumer tastes and represent the claimed value of the products they advertise, models involve cultural values in constructing "repertoires" of cultural legitimacy. In another words, as tastemakers, models commodify and transform their bodies, faces and looks to represent "authorities of legitimation." In the process of fitting goods to existing tastes and fitting tastes to existing goods, models conform to cultural norms of beauty, and by embodying those norms and values in their own bodies, they create looks that appeal to broader consumer masses.

Additionally, while legitimizing cultural beauty standards through their own appearances, models as cultural intermediaries do not act alone. Retailers, designers, brands, popular art, media and photography provide an interconnected system that serves an active role in assisting or channeling the perceptions of consumers about what is beautiful, attractive, and desirable (Bourdieu, 1984; Foucault, 1977; Entwistle & Wissinger, 2013).

2.5. From cultural intermediaries to emotional and aesthetic labor

Cultural intermediaries represent a form of emerging occupations that involve presentation, representation and the provision of symbolic goods and services (Bourdieu, 1984). Those (he claims "unstructured") occupations included the newest (in the late 1970s) sectors of cultural and artistic production such as: marketing, advertising, media, journalism, cinema, and fashion (Bourdieu, 1984). From that point of view, various studies explored the importance of modeling as an occupation as an outstanding example of a

paradigmatic shift in labor markets toward freelance employment, where the main prerequisite for "hiring" is the visual appearance of the emerging labor force (Mears & Finlay, 2005; Entwistle, 2015; Entwistle & Wissinger, 2006).

From an employment perspective, in the United States, and in the majority of global modeling markets, models are defined as independent contractors represented by a modeling or casting agency, through which they are hired per job with other clients (Menger, 1999; Jones, 1970; Mears, 2011). Thus, modeling is an unstable, freelance, and short-term job with no benefits, in terms of health insurance, retirement or medical/personal leave (Menger, 1999). Models as independent contractors do not qualify for coverage afforded by the American with Disabilities Act, as the Act applies to employees only. Also, as they are not defined as regular employees, they cannot enjoy other working rights or benefits. For example, the duration of the working day is not defined, and breaks are not mandatory, minimum wage is not set, and in some markets, there are no limits on the age of workers (Simmerson, 2013).

With no surprise, sociologists refer to modeling as "precarious or bad job" because in addition to previously discussed points, modeling is also unstable in terms of aesthetic preferences, uncertain in terms of future hiring (if you work once, it is a not a guarantee that you will work again), competition is very high, and in many markets, average model wages are low-to average (Mears, 2013). For example, The United States Bureau of Labor Statistics created a summary of facts regarding the work done by fashion models. In 2018, the average annual pay for models was $31,570, and the mean hourly wage was $15.18. No education requirements are given, no work experience is required, and training was not

provided for this occupation (United States Bureau of Labor, Bureau of Labor Statistics, 2018, June 11).

Before exploring the idea of the aesthetic demands for model employment, the structural organization of modeling is described, including the ways models may enter the modeling business. As independent contractors, models are officially represented by a modeling (or casting agency) who help models find work. There are several ways for models to get official representation. Most often, models enter the business through modeling schools, or modeling and beauty competitions. Another approach is to contact an agency directly and schedule a meeting with potential representatives (Jones, 1970). The best way to enter the business for a model is if he/she is directly "scouted" or directly recruited by the agency. Such models have a huge advantage for a successful career, because, unlike the two previous entry points (where models search for representation through an agency), they are officially spotted for having "representational" requirements, meaning they have an appearance that fits specific modeling industry standards (Mears, 2011).

After the contract of representation is signed, there are two ways for a model to get a job. In the first case, the photographer, magazine editor, designer, or advertising company may contract the services of a modeling agency to search for the model with a specific type of face and body size for a particular type of job. For a specific client demand, modeling agents select models that correspond with given facial and body parameters and provide a model proposal to the client. A proposal may include all female and male models from that agency that fit into the demand specifications, as they may have, for example, naturally

blond hair, blue eyes, specific height, specific clothing and shoe size that is requested. At the end of the selection process, the client keeps the right to make the final decision and to select some and reject other proposed models (Entwistle & Wissinger, 2013).

In the second case, the selection for specific models is even more demanding. Models are sent by so called "bookers" (people that search and book available modeling jobs) to open national or international castings to meet the potential clients. Those open castings are called, in other terms "go and sees," meaning that all models are invited, but there is no guarantee for potential "hiring." Thus, models have to go and see if there is any chance for potential hiring. Sometimes, castings for big jobs and international brands, in major fashion capitals, can draw more than a thousand prospective models, and only one is actually required for specific job. In the best-case scenario, one model is hired, and the rest of the models are rejected (Mears, 2008).

As a model's job deals with high job insecurity, and constant rejection, previous studies have explored modeling as a specific type of emotional or affective labor. To sell their appearances, models are required to successfully manage their emotions, and project a specific type of personality that is preferred by the specific job (Mears & Finlay, 2005). While doing that, models appear very similar to professional actors, as they perform for a job in accordance with the client's desired personalities, and self-regulate their true emotions, uncertainties and fears. From that standpoint, models share many similarities with the emotional labor explored in service industries.

The term emotional labor was coined by Arlie Hochschilds in (1983) in the study, *The Managed heart: Commercialization of Human Feeling*. Using an example of flight

attendants in the 1980s, Hochschilds describes how employment in the interactive service domains requires workers to enact particular emotional states (manage their hearts) to serve clients and satisfy customer needs and wants. As Hochschilds suggests, to perform emotional labor, employees need the "set of personal skills" referring to personality, attitude, and behavior, for successful employment in service-related industries (Moss & Tilly, 1996). Even though assessment of those (so called soft) skills is subjectively evaluated by the employer, demand for those traits is prevalent in the service sectors including: retailing (Witz, Warhust, & Nickson, 2003; Wolkowitz, 2006), the hospitality industry (Shani, et al., 2014), and entertainment (Mears, 2015). Moreover, there is a common argument that those skills are not only appreciated, but rewarded, and calculated for employee compensation (Folbre, 2004).

In a modeling job, however, self-regulation of emotions is required, but not calculated for models' compensation or promotion (Mears, 2011). While dealing with high job uncertainty and constant rejection, emotional management, for the model, is a rather useful coping mechanism or tool that models use for personal protection (Mears, 2011; 2008). The fact that a large part of any model's career is spent trying to obtain work, models must be mentally equipped with patience, and stamina to fit the demanding aesthetic requirements in modeling markets.

Another obstacle that models deal with is the fact that even though they may be represented by an agency, most of the time (except in cases of top models) models somewhat self-manage their chances for employment, through the consistent investment in appearance and self-presentation (Mears & Finlay, 2005). As display workers, models

invest in grooming and appearance management behaviors to "establish" the desired visual effects. Thus, even though models share similarities with emotional labor in service industries, the success of models highly depends on the methods that models use to manage their bodies and appearances. Therefore, as investment in corporality and appearance in a modeling job is high, research confirms the adequacy of using the term of *aesthetic labor*, as the term combines the two main prerequisites for a successful modeling career: emotional management and corporeal control (see Enstwistle & Wissinger, 2006; Mears, 2011; Holla, 2016).

The term aesthetic labor was initially used in various service-related literature where attractive appearance was seen as an important prerequisite for employment. Researchers have used the concept to analyze labor processes in the hotel and tourism industries (Warhurst & Nickson, 2007); in interactive upscale service settings (Witz et al., 2003; Pettinger, 2004), but also in the context of department stores, including for example, a study at a Home Depot-type store in the United Kingdom (Foster, 2004). In (2010), Williams & Connell published a study, *Looking Good and Sounding Right,* after interviewing upscale fashion retail store employers in America to explore appearance demands for a particular job. As the authors of the study discovered, both "looking good and sounding right" are seen as important determinants of success in a retail service job. They found that in upscale retail stores in America (e.g. Victoria's Secret, Macy's, Banana Republic), the ideal aesthetic of store employees is middle class, white, and conventionally gendered. As some job seekers embody these desired qualities more than others, employers subjectively select/or reject candidates based on physical appearance and values that bodies

do or do not have. Consequently, the term aesthetic labor entails differences that stem from social inequality, and justifies employment based on social segregation, where potential workers are sorted on the basis of age, gender, race, and attractiveness (Williams & Connell, 2010).

2.6. Appearance requirements for a professional modeling career

Depending on the type of job and type of market, models may face different appearance requirements. Primary fashion markets are found in the major fashion capitals of Paris, New York, London and Milan and these are historically recognized for the commercialization of the modern fashion industry through specialized retail, department stores, leisure places with promotional purposes (e.g., shopping centers), and through the launching of the first fashion weeks (Breward, 2003; Breward, & Evans, 2005). Even though other fashion capitals developed later in the 20^{th} century (e.g., Berlin, Madrid, Los Angeles, Miami, Tokyo, etc.), and the 21^{st} century (e.g., Istanbul, Dubai, Mumbai, Beijing) are continuously gaining international significance, the most desirable and prestigious places for designers to exhibit their collections remain the primary fashion markets of Paris, London, New York, and Milan (Breward, 2003; Mears, 2011).

Models have certain genetic advantages for modeling careers, and they may include adequate height, desirable bone structure, and appealing facial features. However, genetic predispositions are not enough, as there are different physical requirements that models need to maintain to manage a successful modeling career. They may include, but are not limited to, having adequate weight, body shape, beautiful skin, hair etc. Based on

their aesthetic categorization, which defines the type of jobs models can do, modeling agencies around the world classify female and male models in two stratified groups: commercial models and high-fashion models. Such classification is solely determined by the aesthetic attributes of the model, as the majority of models have almost no influence in choosing which end of the market in which their look resonates the most (Mears, 2010; Mears & Finlay, 2005).

Commercial models are hired to do commercial jobs, which are the most frequent, and well paid. They include advertisements and catalogs, and basically all jobs that target the massive consumer base. In order to appeal to broad consumer markets, commercial models are expected to fit into conventional norms of beauty. This means they need to be glamorous, with bigger breasts (in the female case), or a more muscular upper torso (in the male case), must have good quality hair, and must have symmetric facial features (Jones, 1970). For example, commercial female models would be the type of models typically hired to do jobs such as Target's, JC Penney's or Macy's print and digital advertisements (Mears, 2010). In commercial male modeling, these models would typically be hired for male underwear campaigns, perfumes or cosmetics (McNeil & Karaminas, 2009).

High-fashion models are hired to perform fashion shows (in primary modeling markets), luxury brand campaigns (e.g., Dior, Chanel) and fashion editorial jobs (e.g. Vogue cover). Those jobs are called high-fashion modeling jobs, as they carry higher social status in the modeling world. As these are the most prestigious types of jobs in the modeling industry, not many models can get them. As Mears (2010) displayed in **Table.1,**

high-fashion and commercial jobs define a model's appearance requirements, earnings, prestige and audience.

In contrast to the stereotypical or normative beauty appeal of the commercial models, high-fashion models are mainly hired to do runway fashion shows, big campaigns, magazine editorials and covers. High-fashion models have higher social recognition, but they often earn lower payments (except in the case of top models). The audience for such jobs is industry-based, including primarily celebrities, bloggers and fashion media representatives. To appeal to those particular groups of fashion creators and influencers, high-fashion models must have unique aesthetics, which, using industry language, is often categorized as ''edgy'' looking (Mears, 2010).

Table 1. Editorial and Commercial Worlds in the Fashion Field **(**A. Mears / Poetics 38 (2010) 21–46)

High-Fashion	**Commercial**
Jobs: Magazines, Campaigns, Print, Catwalk	Jobs: Catalogue, Showrooms, Fittings, Advertisements
Earning: Low, Sporadic	Earning: High, Consistent
Prestige: High	Prestige: Low
Audience: Field Insiders	Audience: Mass consumers
Looks: Edgy, Strange, Skinny, Teenage	Looks: Classic, Thin, Young, "Safe"

As the entire model's physicality or corporality determines the success of his or her modeling career, having and maintaining this preferred type of physicality was further explored.

2.7. Qualifying a model's appearance aesthetics

Models sell a distinct type of aesthetic capital to agencies, and to various clients (designers, advertisers, brand etc.). Just like John Powers, the first modeling agent confessed in 1923, models are commodities which must meet certain requirements (Jones, 1970; Evans, 2008). The requirements for a professional model are rigidly specific and yet indefinable (Mears & Finlay, 2005). At a minimum, models need to conform to general norms of conventional attractiveness that is elaborated upon here. Beyond these conventional standards, however, what makes a model's appearance right for a particular job becomes somewhat variable. Sometimes, desirable appearance qualities depend on current fashion, the market that the advertiser has targeted, and the client's individual taste and preferences. In the modeling world, small and subtle differences in a model's physical appearance lead to a more-or-less successful modeling career. All those particularities in visual appearance can be explored as a part of facial and body aesthetic attributes.

2.7.1. Facial appearance

As the face is the first source of social information available to a perceiver, facial appearance occupies a significant space in the academic literature. As the cultural preferences for facial attractiveness that apply to the general population are in certain aspects similar to those required for professional models, general preferences for facial attractiveness are examined first (Quick, 1997).

Human faces convey important social information, as they almost automatically denote someone's age, skin color, hair texture, and gender. There are various studies on facial attractiveness that explore specific facial stimuli (eyes, nose, lips) that may generate positive, negative or neutral aesthetic judgments. The most common arguments that previous literature have made suggests that: symmetric faces are judged to be more attractive than less symmetric faces (Rhodes, Proffitt, Grady & Sumich, 1998); meaning that symmetrical facial features may have advantages over faces that have asymmetrical characteristics (e.g. eyes, nose, eyebrows etc.).

Facial symmetry is also an important marker of a model's facial desirability, as models with symmetrical facial features are easier to transform for different advertising purposes. The American top model Candy Jones (1925-1990) explored some of these aesthetic qualifications for models in the monograph, "Modeling and Other Glamourous Careers" (1970). She argued that the "camera eye" simply prefers models with slender facial features and symmetrical bone structures, as cameras tend to additionally exaggerate possible facial flaws ("double chin, backward sloping foreheads, receding or protruding chins, lantern jaws, moon shape faces, low hairlines, close-together eyes, narrow foreheads, heavy jowls, rectangular and squared faces", Jones, 1970, p.65).

In the meta-analysis on gender attractiveness which apply to general population, Rhodes (2006) found that the sexual dimorphism that distinguishes men from women, which is mostly apparent after puberty, significantly contributes to perceptions of attractive femininity and attractive masculinity. Thus, femininity is seen as the strongest component of facial attractiveness for women and masculinity is the strongest indicator of facial

attractiveness for men (Rhodes, 2006; Grammer, & Thornhill, 1994). Women with larger eyes, a smaller nose, smaller ears, higher cheekbones, and a small chin are perceived to be more attractive. Consistently, men with masculine features, a square jaw, larger cheekbones, and brow ridges are perceived as more attractive (Rhodes, 2006).

Previous findings that apply to models partly confirm, and partly disconfirm that sexual dimorphism is the strongest indicator of facial attractiveness for female and male models (e.g. Jones, 1970; Soley-Betran, 2006). Industry preference for conventional forms of facial attractiveness that are linked to femininity and masculinity are found to be particularly important in the commercial modeling sphere. In order to appeal to broad consumer markets, commercial models are expected to fit into conventional norms of gendered beauty. This means that models need to be glamorous, but their gender has to clearly fit into one of the two binary gender groups, female or male.

In the high fashion modeling realm, however, conventional gender features (such as smaller nose, and ears, and higher cheekbones for females, or a square jaw, larger cheekbones, and brow ridges for males) are found to be less salient, as high fashion models preferably have to appear as unconventional, or edgy (Mears, 2010). In that respect, the high fashion industry is recognized as especially demanding when scouting and selecting new talents for the most prestigious modeling jobs that satisfy the aesthetic appetites of famous designers, brands and fashion media editors.

To appeal to these particular groups of fashion creators and influencers, high fashion models must have unique aesthetic appeal, which is often described as disruptive, and unconventional (Mears, 2008; Entwistle, 2004). For example, to promote unisex, and

genderless clothing lines, designers frequently hire models with ambiguous facial aesthetics (Stonewall & Dorneich, 2016; Brownie, 2017). Those female and male individuals often visually display non-binary gender, meaning they have ambiguous gender, and have both masculine and feminine traits (e.g. Case, 1995; Ravinder, 1987). Such facial particularities that are unconventional qualify those type of models to perform jobs (or advertise the products, design etc.) that blur boundaries between male and female fashion (Kacen, 2000; Sandhu, 2016; Sandhu, 2017; Stonewall & Dorneich, 2016; Brownie, 2017).

Unlike conventional or unconventional gender attributes, that, depending on the type of job, may be more or less preferable, youthfulness is consistently defined as a salient contributor to attractiveness. This rule applies to both models and general population. Previous studies found that visual signs of aging such as wrinkles, hair grayness and facial sagginess are perceived being less attractive, and therefore aging is negatively correlated with attractiveness (see Lennon, Johnson & Rudd, 2017). As women are culturally more valued for their looks, aging represents a common negative threat for appearance satisfaction for females. For men, however, aging represents a less salient contributor to attractiveness as men are often culturally valued more for their social status and occupation and less for their looks (Grogan, 2016). Furthermore, studies found that female facial neoteny including full lips, small noses, small chin, high cheekbones (commonly associated with neonates and infant facial features), are commonly perceived as attractive (Jones et al. 1995). Interestingly, studies haven't found a correlation between male neonatal facial features and attractiveness, suggesting that youthful facial appearance is more valued

for women than for men (Jones et al. 1995). Those findings, are consistent with preferences found in the modeling literature, where female models are sometimes as young as fourteen (Soley-Beltran, 2006), while male models may work even in their late thirties and forties (Grogan, 2016)

Other important facial attributes that might apply to both general population, and models include: fresh and smooth skin, with no evident birthmarks, dark freckles, or scars; beautiful, and white teeth, and large eyes (Quick, 1997). Interestingly, there are also some facial or head characteristics that may be less significant to the general population, but can be desirable for a modeling career (Quick, 1997). They include neck length, hair texture, hair color and smile. For example, neck length may be a potential threat to a modeling career. As Jones argues, no matter how pretty the model is, if the neck is short, the career is doubtful (Jones, 1970, p.52). Length of the neck is important for both male and female models. “The longer the neck, (…) lower the shoulders are held through posture practice, and the more fashionable garments will appear” (Jones, 1970, p.52).

Hair is another significant contributor to model desirability. Thick, healthy and shining hair is what all models are expected to have (Quick, 1997). Straight hair is the most demanded in modeling, only because straight hair can be easily restyled at the request of the client or the modeling agency. Female models, particularly, are selected for jobs based on their hair qualifications, and there was a practice for a long period of a time that only girls with straight hair would find work. Hence, girls with naturally curly hair had professional hair straightening treatments regularly, which enabled them to wear the hair styles that required straight looks (Jones, 1970).

As far as hair color is concerned, there are trends to certain color shades. Deep brunettes are favored for fashion show jobs. However, there is always high demand for natural blondes, and other appealing colors like red shades, for example. Hair colors that are seldom acceptable are silver blonde or any promotional color like pink, blue, or green. Another determinant of a model's desirability is a beautiful smile. According to Jones (1970), too high a smile may make the eyes squint, because the cheek muscles move them upward. If the upper lip is lifted too high, too much of the upper gum line may be displayed. All those unattractive habits may be corrected and controlled with practice and modeling instruction books provide interesting insights as to how models might equip themselves for a successful modeling career (Jones, 1970, p. 61).

Interestingly, the most salient facial appearance attributes (facial symmetry, beautiful eyes, flawless skin, smile and hair) that Jones elaborated as required for modeling industry, as in the 1970s, were reconfirmed as still present, in more recent studies of professional modeling aesthetics. For example, sociologist and ex professional model and actress, Patrícia Soley-Beltran reflected on the normative and idealized aesthetic of fashion models (Soley-Beltran, 2006) as well as another sociologist and previously professional fashion model Ashely Mears in her multiple explorations of the phenomenon (for example: Mears, 2011; Mears 2008).

2.7.2. Body appearance

There is a range of conventional body appearance requirements that models are expected to fulfill. The main requirement for any model is to fit into predetermined, and industry standard dress sizes (e.g. S, M, L) that are created for commercial purposes. In the

modeling world, a model's body size represents a summary of bust (for female models), chest (for male models), waist and hip measurements, and maintaining those (dress specific) measurements is crucial for both female, and male modeling careers. To create garment (dress) sizing, national surveys are taken across general populations, where body size is assessed via mentioned body dimensions. Furthermore, garment sizing is created based on the average bust measurements for female models, and average chest measurements are used to create male model garment sizing.

The publicly available National Clothing Sizing Survey, used for clothing pattern development in Great Britain, indicates that key measurements (bust/chest, waist, hips) for the general female population significantly increased from 1951 to 2002 (**Table 2**). Specifically, an average female wearing a size Medium increased around 2 inches in the bust and hips, and around 6 inches in the waist area.

Table 2. UK National Sizing Surveys – Key Dimensions of Average Female
(Apeagyei, 2010, pp. 59)

Female	Bust	Waist	Hips
1951 statistics	37 inches	28 inches	40 inches
2002 statistics	39 inches	34 inches	41 inches
Difference	+ 2 inches	+ 6 inches	+ 2 inches

These same trends can be applied to other countries as well, since according to the World Health Organization, the world's population is getting taller and bigger. For example,

according to the US Department of Health and Human Services, Center for Disease Control and Prevention (CDC, 2016), between 2011–2014, Anthropometric Reference Data for Children and Adults increased in comparison to years before 2011, indicating that average 16 year-old females, and males have a waist circumference of 33 inches, a weight of 143 pounds for females, and 164 pounds for males, and an approximate height of 5'4''for females, and 5'7''for males. Similarly, average 19 year-old females, and males have a waist circumference of 34 inches, a weight of 150 pounds for females, and 174 pounds for males, and an approximate height of 5'4'', and 5'8''(**Table 3**).

Table 3. Anthropometric Reference Data for Minors and Adults, United States

Gender (N)	Age	Waist /inches	Weight /pounds	Height /inches	BMI
Female N=187	16	33	143.3	63.9	24.6
Male N=178	16	33	164.1	68.5	24.5
Female N=152	19	34	150.9	64.2	25.8
Male N=144	19	34	174.0	69.4	25.4

*US Department of Health and Human Services, Center for Disease Control and Prevention, 2011-2014 (published, August 2016)

Despite the increase of all key body dimensions (height, weight, body measurements) for the general population, dress samples for promotional purposes are becoming significantly smaller. Especially for fashion show purposes, designers seemingly

prefer skinny bodies, and smaller dress sizes as they believe that on a thinner body, these clothes display better for the final consumer (Entwistle, 2009; Mears, 2010; 2013). Similar to the example known from dress history, where Jean Patou travelled to America to find slim, tall and athletic models that would be able to optimally display his collection, the preference for a straight, and tubular body shape that would serve as a clothing hanger remained in fashion (Record & Austin, 2015).

For example, in the U.S. fashion industry, over the last 2 decades, the body standards for runway female models have ranged from between dress size zero and dress size 6. Measurement wise, those sizes indicate that a female model's figure is required to range between 30 and 34 inches in bust, between 22 and 25 inches in waist, and between 32 and 36 inches in hips (Mears, 2010). Interestingly, the preferred bust measurements, according to Mears, are similar to what Jones found to be true for bust sizes in the 1970s, as she describes that having 32 to 34 inches in the bust is the most common among female models, whereas a more voluptuous, old-time Hollywood starlet type of model (bust size 38, for example) had difficulty finding work (Jones, 1970). Morris, Cooper and Cooper also confirmed those values, when they investigated a trend of model bust change across the span of a 20-year period, starting from 1967 to 1987. According to those authors, bust measurements slightly changed over the time period they explored, and the values they found fluctuated between 33.4 and 34 inches. Similarly, according to the same authors, waist and hips fluctuated between 23.4-24.2 inches, and 34.6 and 34.8 inches respectively (Morris, Cooper and Cooper, 1998).

Modeling literature, provide even more specific description for preferable female body representations. For example, skinny and elegant knees should have a circumference (around) measurement of the knee: 13-15 inches, while calves should not be too muscular, with a circumference measurement: 12-14 inches (Jones, 1970; Nicholas, et al., 1976). As various sources emphasized the importance of thinness and provided a similar range of female body size values, literature-wise, there is an important evidence that a tubular body shape for female models existed within the industry for a long time.

Unlike for female models, whose measurements are more often explored, the body appearance prerequisites for male models are still underexplored. Nevertheless, a few important findings should be mentioned. While interviewing the male model population, Entwistle (2004) revealed that a more than a decade ago, the standard male model measurements were 38 to 42 inches in the chests, and between 30 to 32 inches in waist. Furthermore, the same author, found that minimum height requirements in the male modeling industry increased from 5 feet 11 inches in the late 1980s, to 6 feet 3 inches at the beginning of the 21st century (Entwistle, 2004). An increase in model height was also anticipated in the female model's case. In regard to female model height, the guide for a successful modeling career acknowledged that the most desirable height for female models in the 1970s was 5 feet and 9 inches, and models who were close to that height were selected for fashion shows, trade shows, and conventions (Jones, 1970). In those days, extremely tall female models were taller than 5 feet and 10 inches (Jones, 1970). In modeling studies that were published more recently, preferable model height slightly increased due to the fact that the general population is growing taller (Apeagyei, 2010).

For example, in ethnographic studies, Mears (2011, 2010) confirmed that the minimal height in the recent female modeling industry was 5 feet and 9 inches, while most of the women that model in runway shows were (as in 2010) between 5 feet 10 inches, or 5 feet 11 inches tall.

2.8. Body image and self-commodification

Facial and body appearance attributes represent an important vehicle of personal self-presentation. The way people picture their own bodies (mentally) significantly influences individual perceptions, emotions and appearance related behaviors. In the domain of dress and social psychology, it was long ago acknowledged that the human body as a material aspect of self and social experiences of the human body (known as embodiment) constitute salient and integral components of an individual's self-concept (James, 1890). Thus, the further analysis examines two things: at first it explores why in the modeling case, the workers physicality is salient factor of a model's self-hood while simultaneously being an aesthetic product; and secondly how self-commodification process, stimulated by occupational aesthetic requirements translate into actual appearance management behaviors that jeopardize models health (Rudd & Lennon, 1994; Rudd & Lennon, 2000).

In 1890, psychologist William James introduced "self" theory, suggesting that three main components of the self are: (1) the material self, or bodily self, (2) the social self (who we are in relation to others in our social interaction circles), and (3) the spiritual self (who we think we are in relation to the universe or larger metaphysical ideas). While applying

social psychological theory to the production of specific appearance aesthetic in modeling, *both having* and *being a body* is an integral part of a model's self-concept. Consequently, the material self might be a more salient (compared to the social or spiritual self) contributor to a model's self-esteem and their own body image.

Body image has been defined by many scholars in psychology over the past 70 years (i.e., Cash & Pruzinsky, 2004; Cash, 2004) and in psychiatry (Schilder, 1950) as a mental construct that includes perceptions of the bodies, the attitudes towards the body (and individual appearance), and motivations to engage in appearance management behaviors based on these perceptions and attitudes. Memories of one's body are tied to one's earliest childhood memories. These cognitions are often specific (hair, eye color, body size and shape), and they represent perceptual components of the basic body knowledge an individual has (Lennon, Johnson & Rudd, 2017). For example, according to authors Lennon, Johnson & Rudd (2017) personal perception of body features, include different appearance specifics such as: size (big, small, short, tall, thick, thin), shape (round, flat, defined muscles or not), weight (underweight, average weight, overweight, obese), features (hair, skin, smile, eyes, and nails), movement (quick, slow, gestures, carriage), performance (strength, agility, endurance, speed, and health).

The attitudinal component of body image includes the personal affective, emotional responses that are closely related to thoughts about the body. Feelings can be both positive (e.g. pride) and negative (e.g. shame). Two universal feelings that people have about their bodies are recognized as *body satisfaction* and *body dissatisfaction* (Grogan, 2016). As people tend to be satisfied with some body aspects and dissatisfied with others, body image

can be best conceptualized as a continuum, ranging from extreme satisfaction to extreme dissatisfaction (Lennon, Johnson & Rudd, 2017). Lastly, but not less importantly, the behavioral component of body image includes the behavioral responses people have based on the perceptual and attitudinal components of their body image. In the literature, they are described as appearance management behaviors (Rudd & Lennon, 1994).

Appearance management behaviors can be categorized as the routine and non-routine practices people use to maintain and alter their natural bodies. Routine behaviors include all frequent practices people do to maintain their bodies, such as bathing, using cosmetics, washing and styling hair, shaving, and clothing etc. These behaviors typically carry no risk. Non-routine behaviors include less frequent practices with similar purposes, but these behaviors may carry some degree of risk, some more than others. These behaviors may include, but are not limited to, tattooing, tanning, hair coloring, tooth whitening, cosmetic procedures, food restriction, binging and purging, exercise obsession, etc.

As the entire model's physicality or corporeality determines the success of his or her modeling career, having and maintaining this preferred type of physicality represents the constant challenge that all models, despite their gender are facing. Consequently, the material self might be a more salient (compared to the social or spiritual self) contributor to a model's self-esteem and their own body image. For a model's aesthetic market labor, self-display is an integral part of their job. Therefore, models significantly invest in grooming practices and appearance management behaviors to improve their looks. Knowing that successful appearance management and reproduction of industry standards

will increase their chances for employment, models devote meticulous attention to their physicality, as their faces and bodies represent the only tangible capital in a model's hands (Entwistle & Wissinger, 2006; Mears, 2011; Holla, 2016).

The concept of having and maintaining body as type of material of body capital was previously explored in the context of professional athletes. For example, Wacquant (1995) examined how professional boxers use their bodies as raw materials, and how they invest in them through excessive training. Depending on the amount of time spent on "body work", once in the ring, boxers may produce values higher than they initially invested (Wacquant, 1995, p. 67). Hence, boxers build a rational and almost entrepreneurial relationship with themselves, knowing that future financial gains will be based on previous body investments (Wacquant, 2004).

While the importance of body functionality and aesthetics, for the specific kind of laboring is explored from various standpoints (Williams & Connell, 2010; Foster, 2004; Witz et al., 2003), body "work" (known as investment) and appearance management behaviors are particularly attractive for body, dress and social psychology researchers (e.g. Kaiser, 1990; Rudd & Lennon, 2001; Lennon, Johnson & Rudd, 2017). Hence from that standpoint, exploring models is particularly important to comprehend how self-commodification process translates into actual appearance-oriented behaviors.

Models are interesting as they represent very specific type of aesthetic labor. All models are fully aware of the physical demands of their jobs, and they frame those aesthetic demands as *job requirements*. Consequently, like professional athletes and other aesthetic

labor representatives, models internalize industry norms, and embed them in their own material self-hood. Hence, instead of *having a body* as a matter of instrumentality that fulfills professional duties (e.g. bodies that drive, work, write, carry), *being a body* for professional models means consciously doing and experiencing self-objectification and self-commodification. From that standpoint, a model's body is an object that is worked upon (Mears, 2011), and it becomes a commodity that the model trades for employment and recognition. While a model "owns" his or her own body, he or she is also the agent who defines the course of their body's action. This paradoxical notion where a person might experience a body as both an integral and external part of the self is elaborated upon further using a social psychological theory of self.

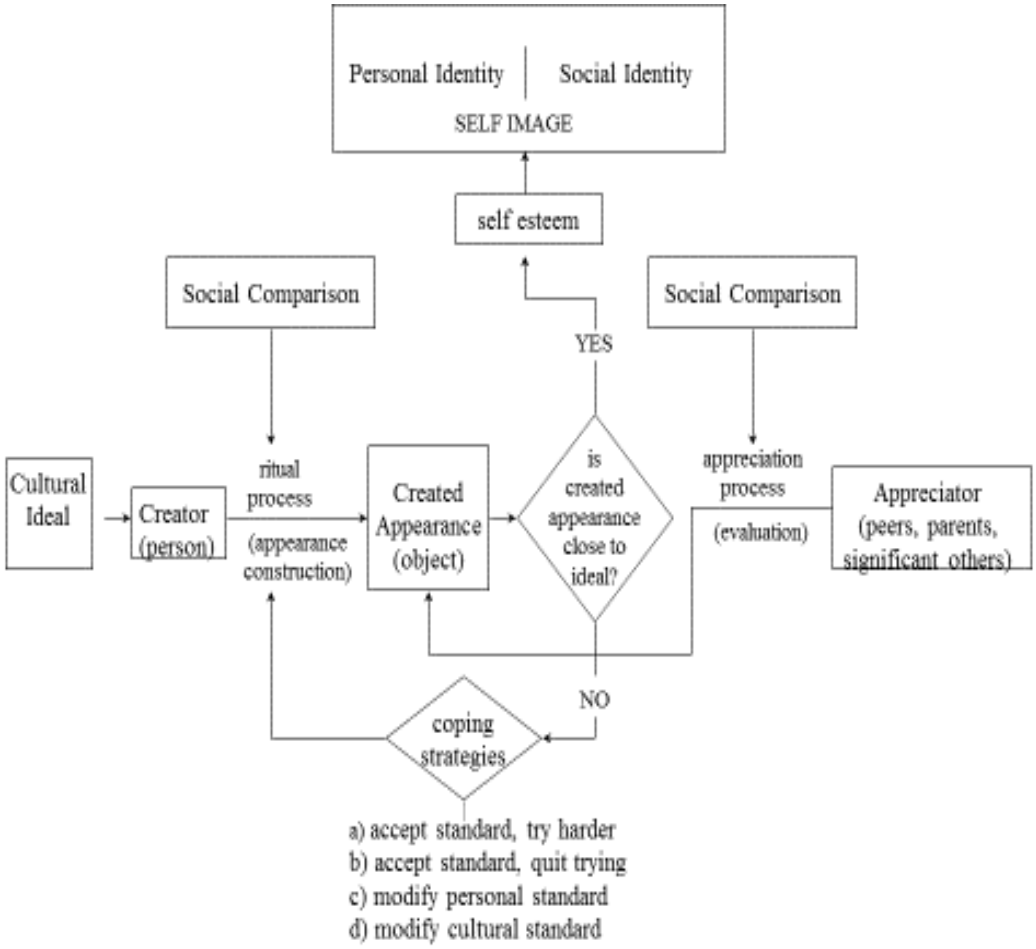
2.8.1. Rudd and Lennon -model of body aesthetics

The Rudd and Lennon model of body aesthetics (1994) recognized that body is an important contributor to personal appearance and judgment of overall attractiveness (**Figure 1**). This model describes the construction of physical (bodily) appearance as a function of cultural aesthetic ideal (cultural ideal of beauty). The model suggests that people within culture internalize the cultural aesthetic appearance standard and create and compare their appearance (using that standard) through the process of social comparison (Lennon, Johnson & Rudd, 2017; Festinger, 1954). Hence, through the comparison process, if a person estimates that their created appearance is close to the cultural appearance ideal, it significantly contributes to their self-esteem and a positive self-image. Similarly, if the person estimates that their created appearance is not close to the ideal,

there are four copying strategies that they may use to lead to new appearance behavior. They include: standard acceptance, where a person tries harder to achieve ideal standard, standard acceptance where a person give up trying to achieve an unattainable, modification of the personal ideal, and modification of cultural ideal (refer to Rudd & Lennon, 1994 or Lennon, Johnson & Rudd, 2017).

Figure 1. Rudd and Lennon (1994) Model of Body Aesthetics

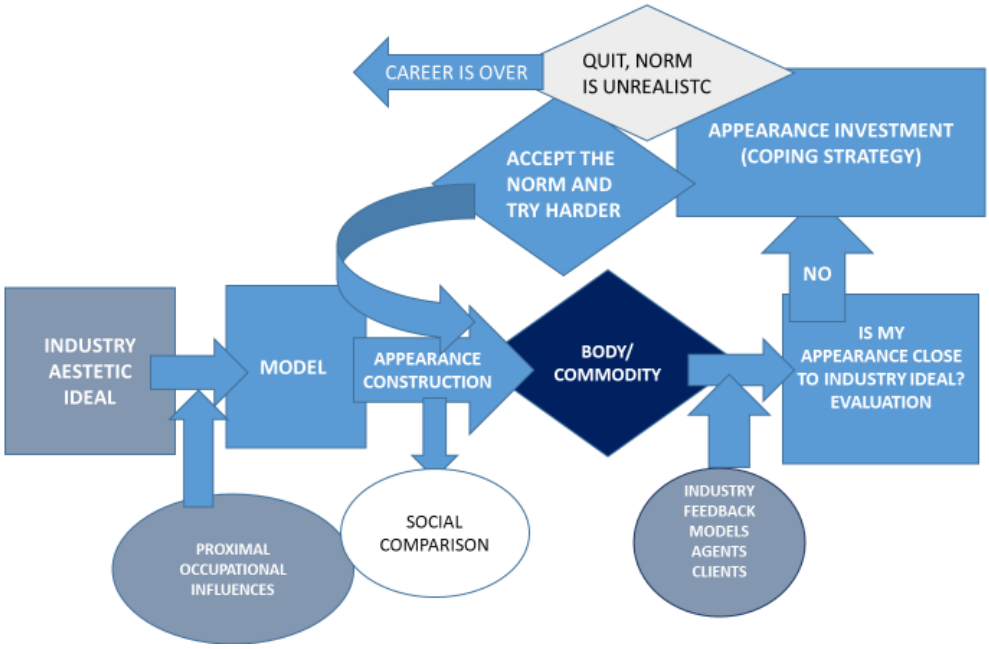
("reprinted by permission of the International Textile and Apparel Association")



Rudd and Lennon (1994) recognized that in US culture the cultural beauty ideal is represented by fashion models in the media, and young women report comparing to fashion models, as this was replicated in other studies (Adomaitis & Johnson, 2008). Therefore the "Model of body aesthetics", explains how models' appearance (even on the representational level) have tremendous impact on general public.

From the individual model standpoint, the complexity of body image perceptions, attitudes, and behaviors can be as well successfully conceptualized using Rudd and Lennon "Model of body aesthetics". However, in such case, minor modifications are applied to adequately resonate with target population. This Model of Body Aesthetics can be adapted to modeling population as represented in **Figure 2.**

Figure 2. Model of Body Aesthetics, proposed by Rudd and Lennon's (1994) adapted to Modeling Population.



The visual model shown above is proposed to explain that in the case of models, the active construction of physical appearance is influenced by industry aesthetic requirement (aesthetic ideal), and proximal occupational requirements that might begin with their modeling career. Those proximal influences are job specific body requirements that might slightly differ between high fashion and commercial modeling jobs. Whatever is the case, models are highly aware of body requirements for a specific job. As competition in the modeling world is fierce, once models start working, they construct their appearance through constant comparisons with other models. Thus, intentionally, models self-

commodify their looks to emulate desirable industry aesthetics. During this process, they monitor their bodies' size and shape, as well as other physical characteristics that give them a certain "appearance", and receive feedback from their agents, clients and peers. Furthermore, models use this feedback to evaluate their looks, and if their appearance still don't correspond to industry standards, they work harder to achieve the aesthetic ideal. In that way, through higher investment in appearance, a model's likelihood for gainful employment increases. Likewise, if the model is not capable of managing their appearance to fit into narrow industry standards, they are either disqualified by the agency or they voluntarily quit working.

2.8.2. Appearance investment and risky behaviors

Studies have recognized that investment in appearance is high among the modeling population due to its importance to their job (Mears, 2013; Entwistle, 2009; Entwistle & Wissinger, 2006). Body size and measurement differences between commercial and high fashion models have also been explored (Mears, 2013). Compared to editorial and catalogue commercial models' bodies and looks, which can be re-touched and polished in the post-editing photo process, imperfect fit in clothes cannot be shown on the runway fashion shows; therefore, high fashion models are found to be particularly vulnerable to low body measurement requirements (Mears, 2013). Extreme thinness among professional female models have been discussed in previous academic literature, and the that phenomenon have acquired corresponding term. Katherine Records and Bryn Austin introduced the term "Paris thin" to label the aesthetic eligibility for models to display high-

fashion (haute couture) design (2015, p.206). The term itself was used by former *Australian Vogue* Editor, Clements Kirstie, who used the term to criticize the fashion industry for using unrealistic body parameters for displaying fashion on live models (Clement, 2013). Hence, the term *Paris thin* refers to the idealization of skeletal women that are desired for fashion display on the French fashion scene that is particularly known for rigid body standards.

Previous research has acknowledged that appearance pressures experienced by high fashion models are harmful to their health (Rodgers et al., 2017, Record & Austin, 2015) Those models are more inclined to exercise excessively while dieting, and taking supplements and drugs to decrease calorie intake (Preti et al., 2008; Santonastaso, Mondini & Favaro, 2002).

Industry examples also indicate that professional models engage in restricted eating to achieve and maintain an extremely thin look (Record & Austin, 2015). The previous editor of *Australian Vogue* publicly declared that the models she had on editorial shoots frequently starved and ate tissues and other non-food items to satiate their hunger (Clements, 2013). Also, models found alternative solutions to reduce food intake and maintain low weight. For example, some models use a Tongue Patch Diet, where a hard mesh patch is surgically attached to the top of the tongue which prevents them from eating solid food because the patch makes eating uncomfortable and even painful (Chugay & Chugay, 2014). Clinics that provide tongue patch surgery treatment additionally market a liquid food supplement that clients can drink while using the patch, and they claim that clients lose 20 pounds in a month with the patch. Miss Venezuela, Wi May Nava for Miss

Universe 2013, beauty pageant publicly admits using tongue patch diet, and liquid food supplements to regulate her weight, and the same was done by some other working models (Briquelet, 2015).

With the continued demand for thin models in the fashion industry, apart from risky surgeries, the occurrence of self-reported and diagnosed eating disorders became frequently discussed topic in the academic literature (Rodgers et al., 2017, Record & Austin, 2015; Mears, 2010; Preti et al, 2008; Santonastaso, Mondini & Favaro, 2002). International recognition of the problem of eating disorders was not raised before 2006, when Uruguayan model Luisel Ramos (age 22) died of heart failure immediately after stepping off the runway in South America. Her sister Eliana (age 18), also model, also died from a heart attack a few months later (Lennon, Johnson & Rudd, 2017). It was estimated that at the time of death, the sisters had a BMI of 14.5 (Gladstone, 2016). Later that year, Brazilian fashion model Ana Carolina Reston passed away with a BMI of just 13.4 (Gladstone, 2016). In response to the deaths of the models, some fashion industries took steps towards incremental change. Participation in Fashion Week in both Madrid and Milan began requiring a healthy BMI of 18.5, which is the lowest BMI in the average weight category according to World Health Organization (WHO) standards. Other fashion associations, such as the Council for the Fashion Designers of America (CFDA), took initiatives to encourage healthier lifestyles among models but imposed no such BMI requirements. Most notable among the CFDA's initiatives was setting sixteen years of age as the minimal working age in the fashion industry (Mears, 2011).

In Israel, the 2007 anorexia-induced death of model Hila Elmalich influenced the government to create the first Law on Restricting Weight in the Modeling Industry, which was officially passed on March 19, 2012. The first portion of the law requests BMI based hiring requirements, where models are required to show employers medical authorization with BMI classification obtained three months prior to the performance date (Gladstone, 2016). Only models with healthy BMI of 18.5 may be hired for a job. The second part of the Weight Restriction Law focuses on digitally enhanced images, where any photograph that was digitally edited or enhanced needs to be accompanied with a label stating that the photo content was digitally altered (Gladstone, 2016). Israeli officials called for legal changes to be implemented from runways to commercials. At this time, an Israeli government announcement also claimed that ten percent of young women suffer from clinically diagnosed or self-reported eating disorders, while anorexia related deaths were recorded as mostly affecting the female population aged 15-24 (Gladstone, 2016).

On April 3, 2015, The French National Assembly passed legislation that prohibits modeling agencies from hiring models that are underweight. Dr. Olivier Vran, the legislator and neurologist who proposed the law, asserted that this is the only way to "fight malnutrition" (Bildfell, 2018, p. 50). The principal objectives of the new legislation are: "(1) to protect models from being coerced or feeling compelled into losing unhealthy amounts of weight and (2) to reduce the images of extremely thin women popularized by the fashion industry, which French lawmakers assert lead adolescents to become anorexic" (Bildfell, 2018, p. 50). As a result of that legislation, all working models are required to

present an official medical health record before an employer can confirm them for a job (Friedman, 2017).

Israel and France are not the only countries that are moving on the issue of banning extreme thinness in the modeling industry. California state assembly member Marc Levine in early 2018, framed eating disorders as an occupational hazard, and he approached the issue from the perspective of workplace safety. The core rationale of the legislation he proposes is expressed as follows: “Improving working conditions to reduce excessive thinness among professional models is likely to lead to healthier images of model’s weight. This change in media portrayals of model’s weight may help to achieve a larger societal value in making media images more healthful and less damaging to girls and young women's body image, ultimately reducing their risk for eating disorders” (Bildfell, 2018, p. 53). If the proposed law is passed in the future, modeling agencies in California would be required to operate under a license from the California Labor Commissioner, and modeling agencies that are found to hire models not classified as healthy by a certified doctor would be fined (Bildfell, 2018). Despite legislation efforts that are trying to secure occupational well-being, the recent studies in America (Rodgers et al, 2017; Record & Austin, 2015), replicated findings from Europe (Preti et al., 2008) that runway models, due to professional necessity, are still starving to death. They also confirmed that female models’ BMI is typically lower than 18.5 (Rodgers et al, 2017).

2.8.3. Research Questions

Academic literature has recognized that investment in appearance is high among the modeling population due to its importance to their jobs (Mears, 2013; Entwistle, 2009; Entwistle & Wissinger, 2006). As previously elaborated, models, as aesthetic labor representatives, internalize industry norms, and embed them in their own material self-hood. Hence, instead of *having a body* as a matter of instrumentality that fulfills professional duties (e.g. bodies that drive, work, write, carry), *being a body* for professional models means consciously doing and experiencing self-objectification and self-commodification.

Even though all models use their bodies as an object that is worked upon, not all the models are equally affected with strictness of occupational requirements. Body size and measurement differences between commercial and high fashion models have been previously explored, with the conclusion that high fashion models are found to be particularly vulnerable to low body measurement requirements as they need to fit perfectly into extremely small garment sizes that are created (and preferred) for promotional purposes (Mears, 2013; Records & Austin, 2015). After the clothing is promoted on the runway, garment sizes are adjusted for commercial purposes using average body measurements for the general population. Data is generated via national surveys which collect information of the consumer's body in four different areas: including height, bust measurements for females, and chest measurements for the male population, and waist and hips for both. Paradoxically, despite the increase of all those key body dimensions for the

general population, dress samples for promotional purposes are becoming significantly smaller. More specifically, a model's measurements are so small to fit into dress size zero, which, measurement wise, correspond to a body that has 30 inches in the bust, 22 inches in the waist, and 32 inches in the hips (Mears, 2011).

Researchers Records and Austin introduced the term "Paris thin" to label the idealization of skeletal women as the aesthetic eligibility requirement for models to display high fashion design (Records & Austin, 2015, p.206). Those researchers reconfirmed that body measurements are unrealistic for high fashion female models, as they are expected to maintain a weight of 122 pounds, while being at least 5 feet 9 inches tall (Records & Austin, 2015). Knowing that competition in the modeling world is fierce, in order to work, and keep working, models monitor, and correct their bodies' size and shape to emulate desirable industry aesthetics.

Even though previous research has recognized the probability that male models might be as well affected with unrealistic body requirements to display high fashion design, there is no clear evidence for those assumptions. Academic research on the male modeling population is still scarce. One significant study that can be found is a qualitative study from Joanne Entwistle (2004), where the researcher revealed the standard male model measurements (as before 2004) were 38 to 42 inches in the chest, and between 30 to 32 inches in the waist, while on average, male models were found to be 6 feet 3 inches tall (Entwistle, 2004).

To support, and extend previously generated literature on the topic, and to provide the quantifiable assessment for thinness among the female and male modeling populations, the following research questions were proposed:

RQ1. Is there a stable rise in the height of the runway models?

RQ2. Is there a stable decrease in the circumference of models' hips?

RQ3. Is there a stable decrease in the circumference of the models' waists?

RQ4. Is there a stable decrease in the circumference of the models' bust/chests?

Furthermore, the study aimed to assess how occupational aesthetic requirements affect models' health. For this purpose, health was assessed indirectly, using anthropometric health parameters waist-to-hip ratio, and BMI values. The World Health Organization recommends a combined usage of those parameters as a way to estimate the nutritional statuses and other health-related indicators across the World's nations. Previous research on the modeling population that relied on these health predictors has estimated that appearance pressures experienced by high fashion models are so high that they are harmful to their health (Rodgers et al., 2017; Bogár & Túry, 2017; Record & Austin, 2015).

After an anorexia related deaths of models Luisel, and Eliana Ramos, Ana Carolina Reston, and Hila Elmalich female high fashion models were particularly scrutinized for malnutrition associated risks. Unsurprisingly, research studies often reached the same conclusion that female models were starving themselves in order to maintain an extremely thin look desired by the occupation (Rodgers et al, 2017; Bogár & Túry, 2017; Record & Austin, 2015; Preti et al., 2008). While starving, models were found to exhibit other risky

appearance behaviors, such as exercising excessively, or taking supplements and drugs to decrease caloric intake (Preti et al., 2008; Santonastaso, Mondini & Favaro, 2002). Consequently, their BMI values were often lower than BMI 18.5, which is determined by WHO as the minimal value for a healthy body mass index (Rodgers et al., 2017).

Even though previous research acknowledged the probability that male models might experience similar pressures to remain thin, there is no clear evidence for those assumptions (Rodgers et al, 2017; Bogár & Túry, 2017). Therefore, to assess the effect that occupational body aesthetics might have on individual female and male model health parameters, the following research questions were proposed:

RQ5. Is there a stable decrease in the models' waist-to-hip ratio?

RQ6. Is there a trend toward lower BMI classification for runway models?

After the quantifiable appearance outcomes were gathered for high fashion models of both genders, a detailed analysis of the model's visual aesthetics was conducted. Previous academic literature has identified the aesthetic requirements for high fashion models as normative (Soley-Betran, 2006), unstable (Mears, 2011), and perhaps more demanding for female models (Entwistle, 2004). However, the most recent occupational preferences for female and male models are underexplored. To establish a benchmark in the literature on appearance requirements for professional modeling as an occupation, a comprehensive approach to appearance aesthetics was undertaken, and the salient

appearance attributes under investigation included *gender, age, facial and body appearance cues*.

Hence, the following research question was proposed:

RQ7: What kind of appearance aesthetic is in demand (as in 2018) for professional runway models of both genders?

Knowing that designers frequently hire unconventionally gendered models with ambiguous facial aesthetics to promote unisex, and genderless clothing lines (Kacen, 2000; Sandhu, 2017; Stonewall & Dorneich, 2016; Brownie, 2017), the following sub-question was proposed:

RQ7a: Is there a greater demand for models with non-binary gender appearance?

Chapter 3. Method

3.1. Objectives, specific goals and research questions

This dissertation research had two main objectives. The first key objective of this research was to quantify appearance manifestations of female and male models through the exploration of their body measurements, waist-to-hip ratios, and BMI values. The second key objective of the research was to qualify the visual aesthetics of female and male high models by exploring their salient appearance attributes including *gender, age, and facial and body appearance cues*. By integrating quantitative evidence, and comprehensive details of model's visual appearance attributes this research aimed to establish a benchmark in the literature on body aesthetics for professional modeling as an occupation. The first objective of this dissertation was to quantify appearance manifestations through secondary data exploration. For that purpose, an industrial data set was used.

The secondary data set contained anonymous information on 609 international models of both genders. The data set was acquired from casting directors with whom researcher has collaborated throughout her industry career. Secondary data set contained information of international runway models of both genders who participated in at least one fashion show during the official fashion weeks in New York, Paris, London and/or Milan, between January 2012 and January 2018.

All models included in the dataset represent different individuals whose names are unknown to the researcher. Identified information included the model's gender, age, body

measurements (height, weight, hips, waist, measurements for both genders, chest measurements for male models, and bust measurements for female models). Waist-to-hip ratio and BMI values were inserted in the data set by using waist-to-hip ratio (further marked as WHR) formula (waist measurements divided by hips measurements) and the Body Mass Index Formula (weight in kilograms divided by height in meters squared).

As the model's body measurements, WHR, and BMI are quantitative variables, they were assessed in the first phase of the research using a quantitative analytical approach. There were three specific goals of the quantitative study, including following:

1. To explore the body measurement (height, chest, waist, hips) for female and male models, annually, and across six years (2012-2018).
2. To assign, and explore WHR values for female and male models annually, and across six years (2012-2018)
3. To assign and explore BMI values for female and male models annually, and across six years (2012-2018)

To achieve the first goal, which was to explore the body measurement for female and male models, annually, and across six years (2012-2018) following research questions were proposed:

RQ1. Is there a stable rise in the height of the runway models?

RQ2. Is there a stable decrease in the circumference of models' hips?

RQ3. Is there a stable decrease in the circumference of the models' waists?

RQ4. Is there a stable decrease in the circumference of the models' bust/chests?

To achieve the second research goal which was to explore WHR values for female and male models annually, and across six years (2012-2018) following research question was proposed:

RQ5. *Is there a stable decrease in the models' waist-to-hip ratio?*

In order to achieve the third research goal which was to explore BMI values for female and male models annually, and across six years (2012-2018) following research questions was proposed:

RQ6. Is there a trend toward lower BMI classification for runway models?

The second key objective of the dissertation was to qualify the visual aesthetics of female and male models by exploring their salient appearance attributes including *gender, age, and facial and body appearance cues*. When qualifying the visual aesthetics of professional models, the purpose was to describe, explore, and provide a detailed analysis of the model's visual aesthetics, therefore the second study included qualitative analytical approach.

There were two specific goals of the qualitative part of this study, including following:

1. To explore salient appearance attributes including *gender, age, and facial and body appearance cues* for female and male models.
2. To assess whether there is a greater demand for models with non-binary gender appearance.

In order to achieve the first research goal of the qualitative study which was to explore salient appearance attributes for female and male models following research question was proposed:

RQ7: What kind of appearance aesthetic is in demand (as in 2018) for professional runway models of both genders?

To achieve the second research goal, and to assess whether there was a greater demand for models with non-binary gender appearance following sub-question complemented the previous one:

R7a: Is there a greater demand for models with non-binary gender appearance?

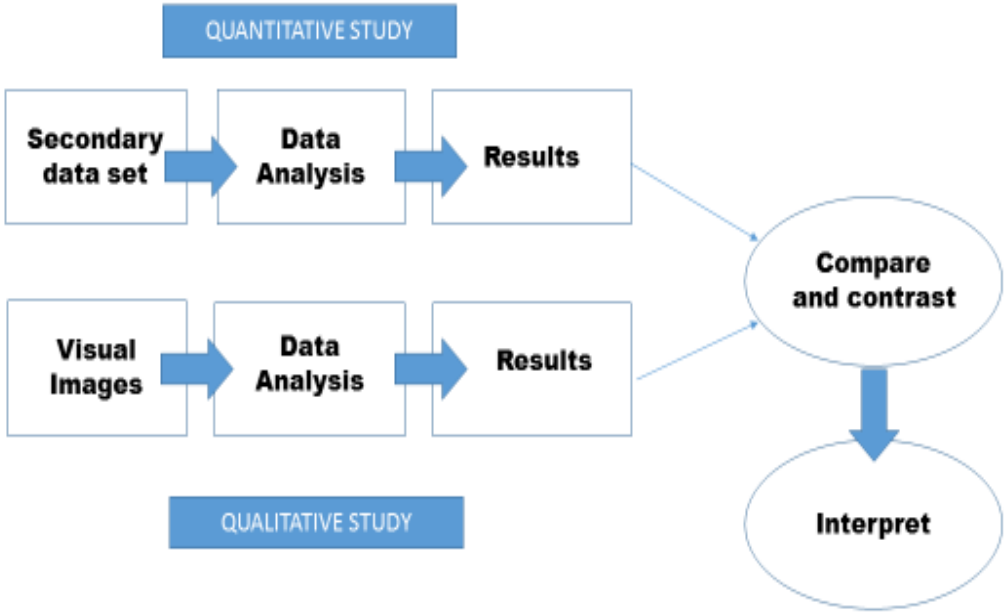
3.2.Mixed method research design

This study implemented a mixed method research design. By definition, mixed method is a procedure for collecting, analyzing and "mixing" or integrating both quantitative and qualitative data within a research study for the purpose of gaining a better understanding of the problem (Creswell & Clark, 2017; Tashakkori & Teddlie, 2003). The rationale for mixing both quantitative and qualitative data in this dissertation was grounded in the fact that a combination of both methods complement each other, while creating a robust study and more reliable results (Tashakkori & Teddlie, 2003).

The mixed method research design in this study relied on *Convergent Parallel Design* as proposed by **Figure 3.** Convergent Parallel Mixed Method Design means that two independent strands of quantitative and qualitative data were collected and analyzed at the same time, and in a single (parallel) phase where both methods are prioritized equally

(Creswell & Plano-Clark, 2018; Demir & Pismek, 2018). Data analysis and variables in each study were kept independent. The results of each study were integrated during overall interpretation, while trying to look for convergence, divergence, contradictions, or relationships of two sources of data (Creswell & Plano-Clark, 2018; Demir & Pismek, 2018).

Figure 3. Convergent Mixed Method Design



3.2.1. Quantitative approach – Secondary data analysis

To quantify appearance manifestations through the exploration of body measurements, waist-to-hip ratios, and BMI values, a secondary data set was utilized. In a time where vast amounts of data are collected and archived, the practicality of utilizing existing data for research is becoming more prevalent (Johnston, 2017; Vartanian, 2010). Secondary data analysis is analysis of data that was collected by someone else for another primary purpose. Therefore, the use of those data sets is optimal when a researcher has limited time and limited research resources (Johnston, 2017).

The secondary data set used came from the modeling industry, and contained information on 609 international models of both genders (N=609). All models included represent different individuals whose names are anonymous to the researcher. The data set was acquired from casting directors with whom the researcher has collaborated throughout her industry career. Casting directors represent people that chose models for major runway shows during the official fashion week seasons in New York, Paris, London and Milan. Each of the mentioned cities have two fashion seasons annually; Fall/Winter, and Spring/Summer. In addition, male and female fashion weeks are separately organized, meaning that each of them has its own week, when either only female, or only male collections are represented to the public.

Thus, the secondary data set acquired from the industry representatives contained anonymous information of 609 international runway models of both genders who

participated in at least one fashion show during the official fashion weeks in New York, Paris, London and/or Milan, between January 2012 and January 2018 (displaying fashion designs for seasons 2013-2019). Traditionally, fashion weeks are held several months in advance of the season they promote. Thus, fashion week calendar allows the press and buyers to preview fashion designs for the following season. The secondary data set covered the following seasons throughout the six year period: female and male fashion weeks in 2012 for the season Fall/Winter 2013; female and male fashion weeks in 2013 for the seasons Spring/Summer and Fall/Winter 2014; female and male fashion weeks in 2014 for seasons Spring/Summer and Fall/Winter 2015; female and male fashion weeks in 2015 for seasons Spring/Summer and Fall/Winter 2016; female and male fashion weeks in 2016 for seasons Spring/Summer and Fall/Winter 2017; female and male fashion weeks in 2017 for seasons Spring/Summer and Fall/Winter 2018; and female and male fashion weeks in 2018 for seasons Spring/Summer 2019.

Identified information included the following: model's gender, reported age, and information concerning whether female and male models had either conventional (cis-gender) or non-binary gender appearance. The last-mentioned information informed casting directors if the model had the aesthetic prerequisite (less obvious gender-specific characteristics, and more gender-neutral facial features) to do both female, and male fashion jobs. While models' gender and age were analyzed in this quantitative study, information concerning the model's gender appearance was omitted, and it was separately explored in the qualitative study.

Furthermore, identified information included body measurements for every model including: height, weight, hips, and waist measurements for both genders, chest measurements for male models, and bust measurements for female models. Because these measurements are universally required for runway clothes fitting, models are routinely measured for every job. Waist-to-hip ratios, and BMI values were not included in the data set, and they were additionally inserted by using adequate formulas.

The data set has been checked by the Institutional Review Board (IRB) at The Ohio State University, confirming that due to the industry-shared nature of the data, and model anonymity (in terms of names, race and ethnicity), IRB approval for the secondary data analysis was not required. Moreover, similar information on models' measurements can be accessed anytime, and by anyone through the *Models.com* website which represents the biggest industrial source that combines and regularly updates information on modeling agencies, as well as internationally known models. Some previously published qualitative studies use the *Models.com* website for sourcing secondary models' data (please refer to Mears, 2009).

The sample was estimated as representative of the runway modeling population, as according to the industry rankings every year around 100 female models, and 100 male models participate in most runway shows in New York, Milan, Paris and London (models.com). Thus, the sample in this study was big enough to include at minimum 26% of female models, and 24% of male models that performed shows across these four markets, each year, and across six-years period of time. Data including body measurements, waist-to-hip ratios and body mass index values were analyzed using

descriptive statistics. Graphs depicted summarized annual data, and compared outcomes across the six-year period. Frequency of distribution was represented using percentages, including visuals in the forms of the table. Values for the female and the male parts of the sample were analyzed separately. *Mean* values were used to described central tendency. Dispersion of variability was represented using *range* (highest value minus the lowest value), and *standard deviation* which supplemented range as a more accurate estimate of dispersion.

3.2.2. Independent variables

Gender: Gender represented the focal independent variable in the study. The majority of modeling jobs, and fashion shows, are gender specific. Gender, in the quantitative study, relied on binary categories of gender: male and female, as those were provided in the dataset. Broader manifestations of the gender spectrum were explored in the qualitative study.

Time: Time represented another independent variable in this study. Due to the fact that fashion changes over time, and that both visual aesthetics of models and appearance requirements for modeling are time specific (Evans & Edwards, 2003), time represented another variable of interest. As the dataset included information for models across the six-years period of time, this study assessed both annual changes, and changes across a six-years. The goal was to determine, and describe the aesthetic trend, by assessing annual changes in body measurements and BMI values.

Even though information in the secondary dataset segregated models according to their age, age was omitted as potential independent variable. Since models report their own age to the clients (designers, casting directors), oftentimes their reported age is not entirely accurate, as there is typically no age verification of models. Unlike the other measurements that were taken for each model before fashion week shows, and were therefore considered accurate, exact model age was omitted in the study because accuracy could not be verified.

Nevertheless, age (as reported by dataset) was described only to provide an overview of the dataset. As the literature indicates, the modeling career for a professional model starts during the teenage years, and some female models, with parental consent, begin work at the age of fourteen and fifteen. For most male models, their careers start a bit later, and they reach their career peak in between ages 20 and 25 (Mears, 2011).

3.2.3. Dependent variables

Dependent variables in the quantitative study contained anthropometric appearance outcomes including: body measurements (BM), Waist-to-hip ratio (WHR), and Body Mass Index (BMI). Body measurements included four different measurements that are critical for creation of different garment sizes, and a model's body qualification: height, bust for female and chest for male models, and waist and hip measurements. Waist-to-hip ratio represents waist measurements divided by hip measurements, and Body Mass index (BMI) represents weight in kilograms divided by height in meters squared.

Body measurements (BM): To assess the visual appearance of female and male models' bodies, this study relied on anthropometric body measurements of height, chest/bust, waist, and hips.

Anthropometry is the study of the measurement of the human body in terms of the dimensions of bone, muscle, and adipose (fat) tissue (Kuczmarski, et al., 1994; De Onis & Habicht, 1996). Anthropometric body measurements are used in a wide range of disciplines, ranging from medicine, nutrition, and public health, to garment sizing and production. The purpose of an anthropometric body analysis approach is essential in various disciplines where critical similarities or differences among human body measurements are used to describe certain patterns applicable to human growth (e.g., children growth scales), weight (e.g., weight charts), health (e.g., BMI scales); and size (e.g., standardized clothing sizes charts). Some health-related studies suggest changes in the ideal female body shape reflected in body measurements may indicate a significant risk of eating disorders or other health- related issues (Garner & Garfinkel, 1982; Agras, 1987).

As previously elaborated, models are routinely measured before each job. All anthropometric measures are not self-reported but taken by casting professionals, consistently and accurately. Because designers require perfectly fitted clothing for their shows, model measurements have to be accurate and reliable.

Models *weight* is measured to the nearest quarter of the pound using an electronic scale. Model's *height* is measured using stadiometer. The procedure is to have the model stand barefoot and look forward with shoulders, buttocks, and heels touching the vertical surface of either a wall or the stadiometer ensuring the head is not tilted incorrectly (Nelms

& Sucher, 2015). Stadiometer records body height to the nearest of 0.197inches (Nelms & Sucher, 2015).

Bust circumference for female models, and chest circumference for male models is measured with the measuring tape while the models stand up. In both cases circumference should be measured around the fullest part of the bust or chest area to get the most accurate measurement.

Hip circumference is measured with the measuring tape while the models stand up. The zero end of the tape is held under the measurement value and the examiner takes the measurement from the right side (Nelms & Sucher, 2015). The hip measurements for both male and female models refer to the area around the buttocks, rather than the measurement around the hip-bone area. "The correct way to get that measurement is to wrap the tape, (…) not so tightly (…) around the fullest part of the buttocks" (Jones, 1970, p. 49). Due to the fact that models need to wear clothes that hang off the body, a model's hips are always measured in the widest part of their bodies.

In the general population *waist circumference* is a practical way of quantifying abdominal fat. In the modeling population, waist circumference is measured with the measuring tape while the models stand up. The correct way to get that measurement is to place a tape around the abdomen at the level of the iliac crest (Nelms & Sucher, 2015).

Waist-to-hip ratio (WHR): WHR stands for waist measurements divided by hip measurements, which represents one approach to evaluating body fat distribution. WHR is

typically used to identify a patient's risk for disease in relation to his or her weight. In 2008, the World Health Organization discussed how waist-to-hip ratio can be related to BMI and can represent risk for various diseases. Typically, measurements that are over the threshold are considered to be at risk for diseases such as hypertension, dyslipidemia, cardiovascular disease and more. According to WHO, values lower than 0.90 for adult men and lower than 0.85 for adult women are considered to be within a healthy range (WHO report, 2008). In the modeling industry waist-to-hip ratio can be used to indicate the body proportion, and potential evidence of fat distribution between waist and hips.

Body Mass Index (BMI): Body Mass Index (BMI) is another anthropometric body measurement that was used in this study. Body Mass Index represents weight in kilograms divided by height in meters squared. The World Health Organization (WHO) uses BMI index to determine the nutritional statuses and other health related indicators across the World's nations. BMI index was formerly called the Quetelet index, as it was created by Adolphe Quetelet in 19th century. From the 1970s, it was used for weight related problems. The limitation of the Index is that it only depends on height and weight values, and it does not include consideration of other important factors (genetics, health conditions, physical activity, and muscle mass, etc.)

According to the WHO (2018), classifications for adults are as follows: BMI values below 18.5 belong to the underweight category; BMI values between 18.5-24.9 belong to the normal weight category; BMI values in excess of 25.0 belong to the pre-obesity, with obesity values ranging between 30-40+. For the purposes of this study, the lower categories

of BMI classification were used to examine the BMI values of professional runway models (**Table 4**).

Table 4. Partial BMI Classification, World Health Organization.

BMI classification
(00.00 - 16.00) Severe thinness
(16.00 - 16.99) Moderate thinness
(17.00 - 18.49) Mild thinness
(18.50 - 24.99) Normal range

According to WHO standards, for adults (18+), a BMI value from 16-18 belongs to the underweight category causing hormonal irregularities, infertility, poor bone density, digestive tract problems, hearing problems and other serious health dysfunctions, and sudden cardiac deaths (Hudson & Court, 2012).

A BMI of 16 is referred to as the *starvation line*. The literature argues that there are sex differences in the limits of survival when BMI decreases below the 16. In male populations, a BMI of 13 is found to have lethal consequences. For female populations, survival is possible in BMI values above 12, and that level is the absolute lowest level compatible with life (James et al., 1988). BMI in clinical eating disorder conditions confirms that a loss of 50% of weight is fatal for human life, suggesting that if an adult person had a BMI of 24, death will likely occur if the person drops to a BMI of 12. Most clinical observations for anorexia nervosa confirmed that female patients have BMI values between 14 and 15 (Forbes et al.,1984). Medical and public health studies have confirmed

that this BMI category in female adult cases often indicates amenorrhea (absence of menstruation), and other critical health problems. Studies on female labor in third world, less-developed countries with the females having a BMI of 16 concluded that these females were the least capable of earning money for a living. The studies on male workers who face malnutrition indicate that BMI values close to 18 cause impairment in work capacity (Spurr, 1983). In starvation experiments (Keys et al., 1950), participants had a BMI of 16.5 after 24 weeks and were incapable of any activity; their mental state was also affected.

The need to develop an appropriate reference point for the screening, and monitoring of school-aged children and adolescents has been stirred by an increasing concern over childhood obesity in the 2006 WHO released Child Growth Standards on a continuous age scale from five to eighteen years. Because the ratio between weight and height varies with sex and age during childhood and adolescence, the cut-off values to determine the nutritional status of groups between five to eighteen years old are gender and age specific. The cut-off points of the 2006 BMI-for-age reference for those aged five to eighteen are calculated in the same way as those for adults, but are then compared to standard deviations (e.g. +1 SD, + 2SD) or percentiles (Onis et al., 2007).

Studying all anthropometric measurements jointly, enabled comprehensive understanding of models' actual stature, body shape, and type. Likewise, assessing those values across a six-year period of time (2012-2018), created the quantifiable evidence for thinness among female and male modeling population. Even though no primary data collection was utilized in this phase, intensive exploration of anthropometric measurements

were used to estimate the way in which occupational aesthetic requirements affected the general health of the models.

3.2.4. Qualitative approach - Visual Content Analysis

To determine aesthetic requirements for high fashion models of both genders, and establish a benchmark in the literature on appearance requirements for professional modeling as an occupation, this qualitative approach was undertaken parallel to secondary data analysis. The majority of the research studies generated over time, used different qualitative approaches to explore fashion models, and the modeling industry. An ethnographic approach has been typically used to examine modeling in terms of both aesthetic and emotional labor, as well as the organizational structure of the modeling industry (e.g. Mears 2010; Godart & Mears, 2009; Entwistle, 2002, 2004, 2010).

Autobiography, observations and field work had been used to examine the personal experiences of working models (Mears, 2011; Soley-Beltran, 2006). Phenomenology was used in the conceptualization of aesthetic labor (Wissinger, 2007a), and model aesthetics (Wissinger, 2007b). All those studies acknowledged the importance of a qualitative research approach to provide a baseline theoretical foundation that includes concepts, thicker descriptions, and a greater understanding of the modeling industry as a specific occupational phenomenon that shapes a model's visual and social identities (Entwistle & Wissinger, 2013).

To qualify the visual aesthetic of professional runway models, the second research study relied on visual content analysis as a way to systematically analyze runway models. The major purpose of the visual content analysis was to provide observational analysis of

the visual categories that lack a quantifiable nature. Visual content analysis is a useful method to interpret and describe meanings inscribed in visual data (Kumar & Phrommathed, 2005). Visual data refers to data in the form of images that circulate in the public media space. Visual images of models carry culturally relevant meanings. At minimum, they carry social identity information.

To explore racial stratification of runway models across international markets, Mears (2010) explored the visual images of models that appear in *Vogue Magazine's* online fashion forum, *Style.com*. The forum contained images of the latest designers' collections taken from the latest runway season. For the spring/summer 2007 collections, Mears found that *Style.com* recorded the runway shows of 172 fashion designers, yielding a total of 677 models. From 677 models, 27 were non-white models, of which 15 models were dark-skinned and 12 were models with Asian features. Thus, Mears concluded that racial minorities included only 4% of overall model representations. To support her results, she used another visual data set, "Top 50 women", a tally of models that worked the most in the 2007 season, as represented on the popular industry website *Models.com.* Among 60 featured models, there were two dark- skinned models, and two Asian models, confirming initial results that models of minorities were underrepresented (Mears, 2010).

3.2.4. Source, access and sample

For the purpose of this research, visual images were extracted from the popular industry website, *Models.com*. The website keeps track of the models that appear on the runway in four major fashion capitals in each season: New York, Milan, Paris and London. For models to be selected as a top newcomer, the model opens and closes numerous shows during that runway season, performs in walk-in shows that are marked as "exclusives," and has been featured in some major campaigns, magazine covers and editorials (as listed on models.com). In this study, only models included in *Newcomers season Fall/Winter 2018* were examined. Every top new talent list contained the model's composite cards (promotional tool in the form of photo portfolio) that included natural and not retouched photographs of the model's face and model's body. Models were commonly featured in underwear or a swimming suit, with a natural hair style and with no make-up.

The systematic sample of forty models was analyzed in the qualitative study (N=40). Twenty models (as listed on the website ratings) were extracted separately for female and male model categories from the "Newcomers season Fall/Winter 2018" section. Models were extracted in the same order as the industry ranked them according to their most recent job performance (meaning the number, and the industry importance of jobs they completed in the most recent past). According to the 2018 industry runway rankings (found on the website models.com), top newcomer female models appeared in approximately 35 runway exclusive shows (including the most prestigious shows such as Chanel, Gucci, Armani, Louis Vuitton, Dior, Fendi). Similarly, top newcomers in the male category appeared in

approximately 20 runway exclusive shows including the most prestigious shows such as Louis Vuitton, Kenzo, Hugo Boss, Michael Kors, Givenchy. Due to the fact that these models represent the most utilized newcomers, this sample was considered to be highly representative of the professional modeling population.

3.2.5. Categorical Variables

The major purpose of the visual content analysis was to provide observational analysis of the visual categories that lack quantifiable characteristics. Salient appearance attributes and visual aesthetics of the models under investigation included *gender, age, facial and body appearance cues*.

The qualitative variable *gender* usually consists of two values or attributes: female and male. However, this visual analysis explored how a model's gender appearance can be ranked on a continuum. Specifically, the idea was based on the assumption that in the female and male modeling population, gender can be distinguished using subtle visual cues (e.g. dominance of feminine or masculine traits), by the following levels: -3 extremely feminine (gender appearance with obvious female features); -2 somewhat feminine (gender appearance with moderately obvious female features); -1 ambiguous feminine (evident genderless appearance features but leaning toward female features); 0 androgynous (gender-neutral appearance features or genderless features, where gender cannot be determined); 1 ambiguous masculine (evident genderless appearance features but leaning toward male features); 2 somewhat masculine (gender appearance with moderately obvious

male features); 3 extremely masculine (gender appearance with very obvious male features).

In this qualitative study, *age* was treated as categorical variable with two values or attributes: adult and minor. All models that appeared to be eighteen or above were classified as adults, and all models that appeared to be younger than eighteen years old were classified as minors under the age of eighteen. Slight visual cues (such as skin, wrinkles, eye bags, etc.) were considered to represent important differences in a model's appearance which supported age categorization.

The qualitative variable *facial appearance* included two values that were further sub-categorized. Two general values included: *facial* (e.g. nose, ears, eyes, teeth, skin color), and *hair* features (hair color and hair style). All those features included a *basic description* of facial and hair attributes (e.g. long, short, big, small) and *additional descriptive information* (facial, or hair particularities).

The qualitative variable *body appearance* included two values: *body size* and *body weight* that were further sub-categorized. Body size for models was further sub-categorized in these categories: average or medium body, small or extra small body. Body weight for models was further sub-categorized in the following categories: average weight, somewhat below average weight, and underweight.

3.2.7. Qualitative Analysis

The qualitative analysis included these steps. First, twenty female and twenty male models were extracted using composite cards from Newcomers in the season Fall/Winter 2018, on the public website Models.com. Composite cards of 40 models in total were included in the analysis. Composite cards represented publicly available, promotional photo portfolios that includes natural and not retouched photographs of the model's face and body. These models were commonly featured in underwear or a swimming suit, with a natural hair style and with no make-up. Secondly, the model's visual gender was ranked on a 7-point continuum from strongly feminine to strongly masculine.

3.2.8. Q sort to establish a baseline of visual gender

Q sort is qualitative ranking technique which can be used to sort images, statements, or ideas in emerging levels, and avoid making only one, definite choice for the problem that is explored (Peter, Visser & de Jong, 2008). Participants or judges are required to participate in the sorting process, in which everyone is sorting the same images, or statement cards. First, participants select cards which are believed to correspond with values at the end of a prearranged array or spectrum, and after that they fill in the rest of piles between the two end points of the spectrum (Tate, 1982). To rank the variable gender appearance in an emerging order, this *q sort ranking technique* was used to sort and rank images of forty runway models. Images of all models were evaluated by ten participants, or judges with expertise in the topic under study, who were expected to use the same criteria to distinguish the model's conventional or non-conventional gender appearance.

The criteria referred to common understanding of gender as being displayed in the form of two binary gender groups, female and male. More specifically, feminine appearance meant having an appearance traditionally associated with women, while masculine appearance meant having an appearance traditionally associated with men. If the gender appearances did not visually fit to any of two conventional poles, it was classified using other non-binary descriptors.

Specifically, the idea was based on the assumption that gender can be distinguished by the following levels: -3 extremely feminine (gender appearance with obvious female features); -2 somewhat feminine (gender appearance with moderately obvious female features); -1 ambiguous feminine (evident genderless appearance features but leaning toward female features); 0- androgynous (gender-neutral appearance features or genderless features, where gender cannot be determined); 1- ambiguous masculine (evident genderless appearance features but leaning toward male features); 2 somewhat masculine (gender appearance with moderately obvious male features); 3 extremely masculine (gender appearance with very obvious male features). Participants were asked to sort each model's image in one of seven levels, or piles, starting from two extreme (or conventional) values, extremely feminine, or masculine. The rest of the model's images were then sorted in the remaining five piles. When the sorting process was finalized, it was determined that all seven categories of gender were distinguishable and useful for the final coding process. Under the condition that every pile contained an approximately equal number of images, all proposed levels were kept when assessing the selected variable of visual gender.

3.2.9. Coding

A coding scheme for all variables being examined was developed for the use of two coders, the researcher and one additional coder. The additional coder was trained to understand coding instructions and to clarify each value in the coding scheme to achieve agreement between the two coders on the meaning. The choice of having and using a coding scheme (**Table 5)** was important because it served as a data management tool for organizing variables and values and it assisted in interpretation of the data (Crabtree & Miller, 1992). As the objective of the qualitative study was to describe the appearance aesthetics for models of both genders, the coding scheme for the variables (e.g. age, gender, body size) were applied to the images (visual data) with the intent of identifying meaningful characteristics within the images and framing data into a coherent construct (King, 1998).

Percentage of agreement was used to calculate intercoder reliability coefficients for each of four categorical variables (gender, age, facial and body appearance) and the level of .90 was established for this study as the minimum reliability coefficient, as opposed to the typical level of .70. This higher acceptable level of reliability was selected intentionally to secure that intercoder agreement did not happen by chance (Tinsley & Weiss 1975; Lombard et al., 2004; Galdas, 2017).

Table 5. Coding Scheme

Category	Value	Description of Value
Gender	Extremely feminine	Very obvious female features
	Somewhat feminine	In small degree evident female features
	Ambiguous feminine	Evident genderless features but leaning toward female features
	Androgynous	Gender-neutral features, genderless features, gender cannot be determined
	Ambiguous masculine	Evident genderless features but leaning toward male features
	Somewhat masculine	In small degree, evident male features
	Extremely masculine	Very obvious male features
Age	Minor (Under the age of 18)	The model is 17 years old or younger
	Adult (Eighteen or older)	The model is at least 18 years old
Body appearance	Body Size	Average or medium body size corresponds to dress size M
		Small body size corresponds to dress size S
		Extra small body size corresponds to dress size XS or XXS
	Body Weight	Average body weight
		Somewhat below average weight
		Underweight
Facial appearance	Facial Features	*Eyes* (big, small) *Nose* (Greek- straight & long nose line; Roman- hooked nose and slightly aquiline nose line; *Button-rounded-up nose* - small and rounded-up; *Nubian nose*- long nose shape with a wide nose base *Ears* (Pointed - pointed at the tip of the upper ear ridge; Protruding ears - stick out from the side of the head; Asymmetrical - misaligned or uneven; Symmetrical- well aligned) Other: ……

		(Specify any additional features: skin color; moles/scars/freckles; neck length; eyebrows, eye descent; teeth, piercings, etc.)
	Hair Features	Hair style (Short, Long, Medium or Other)
		Hair color (Brown, Black, Blonde, Red or Other)

3.3.0. Results cross-checking

As special attention in the qualitative study was given to exploration of non-binary gender after the interpretation of results for each category, an additional step was taken to cross-check and validate the results. The secondary data set explored in the quantitative study contained one categorical variable that was omitted in the first (quantitative) research phase. All female and male models included in the secondary data set were classified by a casting director, or by a model agency (before data was given to the researcher) to have either conventional (cis-gender) or non-binary gender appearance. Such information was crucial for designers that select models with specific appearance qualities to promote genderless, and unisex clothing lines.

Thus, to provide a better understanding of how rapidly the number of non-binary models increased across the six- year period of time, the number of non-binary models was explored annually. In that way, for the sub-question in the qualitative study where non-binary gender was explored, results were cross-checked and reported for both models included in the secondary data set (N=609), and models in the sample included in the qualitative analysis (N=40).

Chapter 4. Results

4.1. Quantitative Results

A secondary data set was utilized to quantify appearance manifestations through the exploration of body measurements, Waist-to-hip-ratios, and BMI values, and to describe and qualify trends in the physical changes of models over the period of six years (2012-2018). Descriptive statistics were used to describe the quantitative data. The secondary data set used came from the modeling industry, and included information on international models of both genders *(N=609).* The data set was acquired from casting directors with whom the researcher has collaborated throughout her industry career. Casting directors represent people who choose models for major runway shows during the official fashion week seasons in New York, Paris, London and Milan. Each of the mentioned cities has two fashion week seasons annually; Fashion week Fall/Winter, and Fashion week Spring/Summer.

In addition, male and female fashion weeks are separately organized, meaning that each of them has its own fashion week, when either only female, or only male collections are represented to the public. Thus, the secondary data set contained anonymous information of international runway models of both genders who participated in at least one fashion show during the official fashion weeks in New York, Paris, London and/or Milan, between January 2012 and January 2018, displaying fashion designs for seasons 2013-2019.

The total number of female models in the sample was 312; and the total number of male models was 297. **Table 6.** shows how gender was distributed for each year. The Fall/Winter 2012 fashion week season contained information on 26 female, and 24 male models; the seasons of Spring/Summer and Fall/Winter 2013 contained information on 51 female, and 49 male models; the seasons Spring/Summer and Fall/Winter 2014 contained information on 59 female, and 45 male models; the seasons Spring/Summer and Fall/Winter for 2015 contained information on 51 female, and 51 male models; the seasons Spring/Summer and Fall/Winter for 2016 contained information on 48 female, and 52 male models; the seasons Spring/Summer and Fall/Winter for 2017 contained information on 51 female, and 51 male models; the season Spring/Summer for 2018 contained information on 26 female, and 25 male models.

Table 6. Gender by Year

Gender/year	*Female*	*Male*
2012	N=26	N=24
2013	N=51	N=49
2014	N=59	N=45
2015	N=51	N=51
2016	N=48	N=52
2017	N=51	N=51
2018	N=26	N=25

*N (female)=312
*N (male)= 297

Models information provided in the secondary data set was further divided according to age classification. Since models report their own age to the clients (designers, casting directors), oftentimes their reported age is not entirely accurate, but they are eligible for job specific hiring because there is typically no age verification of models (please refer to Mears, 2011). Hence, unlike the other measurements that are taken by casting professionals for each model before fashion week shows, and hence were considered accurate, exact model age was omitted in the study because accuracy could not be verified. Nevertheless, age was reported as binary, with classification as either adult (age eighteen or above) or minor (below age eighteen). Models that are eighteen years old or older were classified as adults, while models that are below that age were classified as minors. There were 134 adult female models and 178 minor female models in the sample. Among male models, there were 259 adult, and 38 minor models (**Table 7**).

Table 7. Age by Gender

*Age cumulative/binary *split by gender*	*Number of models*
Female Adult	N=134
Female Minor	N=178
Male Adult	N=259
Male Minor	N=38

*Adult =18 years old or above; *Minor= under 18 years old

When the sample was divided by year (2012-2018), and gender (female or male), according to the two categories of age (adult and minor) (**Table 8**), it became evident that overall there was increasing demand for young models. Considering just female model ages, in 2012 (one season Fall/Winter), 38.5% of female models were minors; in 2013, 56.9% of female models were minors; in 2014, 42.4% of female models were minors; in 2015, 43.1% of female models were minors; in 2016, 66.7% of female models were minors; in 2017, 72.5% of female models were minors; and in 2018, 88.5% of female models were minors. Even though the percentage of minor female models was the lowest in 2012 (at 38.5% of the total), data revealed that the number of minor female models increased each year thereafter. For example, after the 2016 runway season, minor models accounted for at least 66.7% of the total sample. Such findings are consistent with previous literature (e.g. Soley-Beltran, 2006), as they show that the glorification of youthfulness is still ubiquitous in contemporary culture. Consequently, there is high demand for female models that are, or appear to be, minors.

Table 8. Age (Binary) divided by Year and Gender

*Age/binary *by year and gender*	*2012 (N, %)*	*2013 (N, %)*	*2014 (N, %)*	*2015 (N, %)*	*2016 (N, %)*	*2017 (N, %)*	*2018 (N, %)*
Female Adult	16 = 61.5%	22 = 43.1%	34 = 57.6%	29 = 56.9%	16 = 33.3%	14 = 27.5%	3 = 11.5%
Female Minor	10 = 38.5%	29 = 56.9%	25 = 42.4%	22 = 43.1%	32 = 66.7%	37 = 72.5%	23 = 88.5%
Male Adult	24 = 100%	49 = 100%	45 = 100%	51 = 100%	49 = 94.2 %	32 = 62.7%	9 = 36%
Male Minor	0 = 0%	0 = 0%	0 = 0%	0 = 0%	3 = 5.8%	19 = 37.2%	16 = 64%

*__Adult__ =18 years old or above; __*Minor=__ under 18 years old

Considering male model age, there was an evident drop in age starting in 2016 and going through 2018. In 2016 and 2017, 5.8% and 37.2% of the male models were minors, respectively; while in 2018, 64% of the male models were minors. Such results indicate that most male models hired for the 2018 runway season were under the age of eighteen. Unlike female models where the quest for young working models became evident as early as 2012, the demand for youthfulness in the male modeling market became a powerful trend more recently in 2016 to 2018, when the number of minor male models jumped by 58%. Prior to this, all working male models belonged to the adult category.

Using descriptive statistics, height of female and male models was analyzed to provide an answer to the first research question*: Is there a stable rise in the height of the runway models?*

The data on female model height is shown in **Table 9.** Considering the female model sample, there was a fluctuating increase in height across the period of six years. In 2012, the average model's height was 69.6548 inches, and in 2018, the average model's height increased to 70.7753 inches. Thus, average female models' height increased 1.1205 inches. When average male model's height was calculated to feet and inches, it can be concluded that models in the sample were on average (and approximately) between 5'9'' and 5'11'' tall. Furthermore, when average height values are compared over the six-year period, it can be concluded that female model height ranged between 68.90 inches, and 72.05 inches, reaching higher values from 2014 and onwards.

Table 9. Female Models' Height

*Female Height *by year*	*Mean (inches & feet and inches)*	*Min-Max/ Range*	*Standard Deviation*
2012 (N=26)	69.6548 = 5'9.6"	68.90-70.47/1.57	.52139
2013 (N=51)	69.9321 = 5'9.9"	68.90-71.26/2.36	.70849
2014 (N=59)	70.0521= 5'10"	68.90-71.26/2.36	.56566
2015 (N=51)	70.1328= 5'10.1"	68.90-71.65/2.76	.67744
2016 (N=48)	70.517 = 5'10.5"	68.90-72.05/3.15	.68251
2017 (N=51)	70.6423 = 5'10.6"	69.29-72.05/2.76	.72704
2018 (N=26)	70.7753 = 5'10.7"	70.08-71.26/1.18	.35751

*Height was measured using stadiometer. Stadiometer records body height to the nearest of 0.197inches. (Nelms & Sucher, 2015).

The data on male model height is shown in **Table 10.** Considering the male model sample, height over time fluctuated in another direction. In 2012, the average male model's height was 74.4095 inches, and in 2018, the average male model's height decreased to 73.4646 inches. Hence, average male model's height decreased by 0.9 inches. When average male model's height measurements were calculated to feet and inches, it can be

concluded that models in the sample were on average (and approximately) between 6'1" and 6'2" tall. Furthermore, when average height values are compared over the six-year period, it can be concluded that male model height ranged between 72. 44 inches, and 75.20 inches, reaching lower values from 2015 and onwards.

Table 10. Male Models' Height

*Male Height *by year*	*Mean (inches & feet and inches)*	*Min-Max/ Range*	*Standard Deviation*
2012 (N=24)	74.4095 = 6'2.4"	73.62-74.80/1.18	.36713
2013 (N=49)	74.2890 = 6'2.2"	73.23-75.20/1.97	.51586
2014 (N=45)	74.0770 = 6'2.0"	72.83-75.20/2.36	.56902
2015 (N=51)	73.2996 = 6'1.2"	73.23-74.80/1.57	.40466
2016 (N=52)	73.8795 = 6'1.8"	72.83-75.20/2.36	.61826
2017 (N=51)	73.7147= 6'1.7"	72.44-74.80/2.36	.57101
2018 (N=25)	73.4646 = 6'1.4"	72.83-74.41/1.57	.42525

*Height was measured using stadiometer. Stadiometer records body height to the nearest of 0.197inches. (Nelms & Sucher, 2015).

Using descriptive statistics, body measurements, including hips, waist and bust/chest were explored for both female, and male models. Measurements of model hips were analyzed to provide answers to the second research question*: Is there a stable decrease in the circumference of model's hips?*

The data on female models' hips is shown in **Table 11.** Considering the female model sample, there was a fluctuating decrease in the circumference of the models' hips across the period of six years. In 2012, the average model's hip circumference was 34.5851 inches, and in 2018, the average model's hip circumference decreased to 34.3580 inches. Furthermore, when average hip values were compared over the six-year period, it can be

concluded that female model hips ranged between 33.07 inches and 35.04 inches, reaching the lowest minimum value in 2018 (but the lowest average value was in 2017).

Table 11. Female Models' Hips

Female Hips by year	*Mean (inches)*	*Min-Max/ Range*	*Standard Deviation*
2012 (N=26)	34.5851	34.25-35.04/0.79	.36412
2013 (N=51)	34.5685	33.86-35.04/1.18	.36949
2014 (N=59)	34.7324	33.86-35.04/1.18	.35866
2015 (N=51)	34.4913	33.46-35.04/1.57	.36998
2016 (N=48)	34.5145	33.86-35.04/1.18	.35710
2017 (N=51)	34.3292	33.46-35.04/1.57	.34340
2018 (N=26)	34.3580	33.07-35.04/1.97	.50489

*****Hip circumference is measured with the model standing up, the measuring tape is placed at the maximum extension of the buttocks (Nelms & Sucher, 2015).

The data on male model hips is shown in **Table 12.** Considering the male model sample, there was a stable decrease in the circumference of the models' hips across the period of six years. In 2012, the average model's hip circumference was 37.5984 inches, and in 2018, the average model's hip circumference decreased to 35.1339 inches. Furthermore, when average hip values are compared over the six-year period, it can be concluded that male model hips ranged between 33.46 inches and 37.80 inches, reaching the lowest values from 2016 onwards.

Table 12. Male Models' Hips

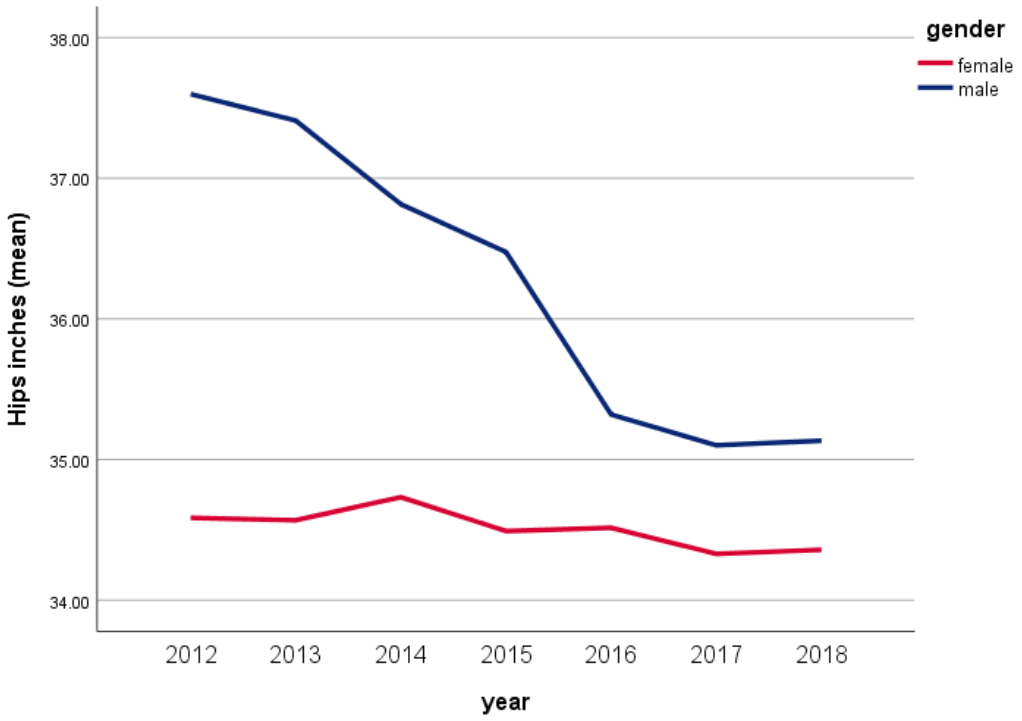
Male Hips by year	*Mean (inches)*	*Min-Max/ Range*	*Standard Deviation*
2012 (N=24)	37.5984	37.40-37.80/0.39	.20108
2013 (N=49)	37.4096	37.01-37.80/0.79	.20473
2014 (N=45)	36.8154	36.22-37.01/0.79	.33176
2015 (N=51)	36.4752	36.22-37.01/0.79	.27075
2016 (N=52)	35.3195	34.25-36.22/1.97	.44335
2017 (N=51)	35.1011	33.46-36.22/2.76	.61686
2018 (N=25)	35.1339	34.65-36.22/1.57	.42948

*****Hip circumference is measured with the model standing up, the measuring tape is placed at the maximum extension of the buttocks (Nelms & Sucher, 2015).

Over the course of six years, both female and male models experienced a decrease in circumference of the hips. With this trend, male models were affected at a higher rate as the hip circumference reached 37.80 inches at maximum and decreased to 33.46 inches at minimum, creating a difference of 4.34 inches. Female models experienced a stable but smaller decrease in circumference of the hips, whose values ranged from 35.04 inches at maximum, to 33.07 inches at minimum, creating a difference of 1.97 inches (**Figure 4**).

Figure 4. Hips Circumference Change (2012-2018)

Female (N=312); Hips Mean=34.5; SD .39360;
Male (N=297); Hips Mean=36.2; SD 1.03102



Measurement of model waists, furthermore analyzed, provide the answer to the third research question*: Is there a stable decrease in the circumference of models' waists?*

The data on female models' waists is shown in **Table 13.** Considering the female model sample, there was a stable decrease in the circumference of models' waists across the period of six years. In 2012, the average model's waist circumference was 23.8492 inches, and in 2018, the average model's hip circumference decreased to 23.6675 inches.

Furthermore, when average waist values are compared over the six-year period, it can be concluded that female model waists ranged between 22.83 inches and 24.80 inches, reaching the lowest values from 2016 onwards.

Table 13. Female Models' Waists

Female Waist	*Mean (inches)*	*Min-Max/ Range*	*Standard Deviation*
2012 (N=26)	23.8492	23.23-24.41/1.18	.29824
2013 (N=51)	23.7765	23.23-24.41/1.18	.36998
2014 (N=59)	23.8423	23.23-24.80/1.57	.39554
2015 (N=51)	23.8691	23.23-24.80/1.57	.45206
2016 (N=48)	23.7369	22.83-24.80/1.97	.33444
2017 (N=51)	23.5835	22.83-24.41/1.57	.31746
2018 (N=26)	23.6675	22.83-24.41/1.57	.42149

*Waist circumference is measured around the abdomen at the level of the iliac crest (Nelms & Sucher, 2015).

The data on male models' waists is shown in **Table 14.** Considering the male model sample, there was a steady decrease in the circumference of the models' waists across the period of six years. In 2012, the average model's waist circumference was 29.7080 inches, and in 2018, the average model's waist circumference decreased to 27.6328 inches. Furthermore, when average waist values are compared over the six-year period, it can be concluded that male model waists ranged between 29.92 inches at maximum, and 26.38 inches at minimum, reaching the lowest values from 2016 onwards.

Table 14. Male Models' Waists

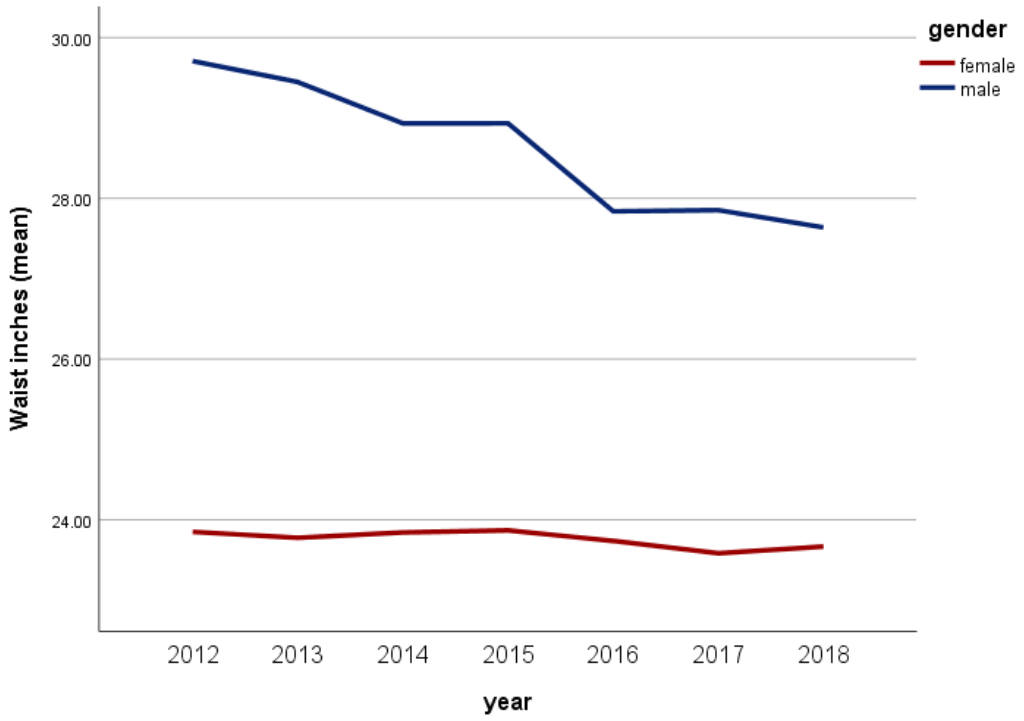
Male Waist	*Mean (inches)*	*Min-Max/Range*	*Standard Deviation*
2012 (N=24)	29.7080	29.53-29.92/0.39	.20038
2013 (N=49)	29.4472	28.74-29.92/1.18	.25387
2014 (N=45)	28.9326	28.35-29.53/1.18	.35236
2015 (N=51)	28.3932	27.95-29.53/1.57	.31861
2016 (N=52)	27.8392	26.77-29.13/2.36	.53641
2017 (N=51)	27.8524	26.38-29.53/3.15	.71234
2018 (N=25)	27.6328	26.77-29.13/2.36	.53307

*Waist circumference is measured around the abdomen at the level of the iliac crest (Nelms & Sucher, 2015).

Over the course of six years, both female and male models experienced a decrease in waist circumference. With this trend, male models were affected at a higher rate, as their waist circumference decreased from 29.92 inches at maximum, to 26.38 inches at minimum, creating a difference of 3.54 inches. Female models experienced a stable but smaller decrease in circumference of the waist, which ranged from 24.80 inches at maximum, to 22.83 inches at minimum, creating a difference of 1.97 inches (**Figure 5).**

Figure 5. Waists Circumference Change (2012-2018)

Female (N=312); Waists Mean=23.76; SD .38525;
Male (N=297); Waists Mean=28.59; SD .85905



Measurement of model's bust/chest was furthermore analyzed to provide the answer to the forth research question*: Is there a stable decrease in the circumference of models' busts/chests?*

The data on the female models' bust circumference is shown in **Table 15.** Considering the female model sample, there was a stable decrease in the circumference of the models' busts across the period of six years. In 2012, the average model's bust circumference was

32.5863 inches, and in 2018, the average model's bust circumference decreased to 32.3895 inches. Furthermore, when average bust values are compared over the six-year period, it can be concluded that female model bust circumference ranged between 33.46 inches at maximum, and 30.71 inches at minimum.

Table 15. Female Models' Busts

Female Chest	*Mean (inches)*	*Min-Max/ Range*	*Standard Deviation*
2012 (N=26)	32.5863	31.50-33.46/1.97	.62307
2013 (N=51)	32.4765	33.10-33.07/1.97	.55885
2014 (N=59)	32.4637	31.10-33.46/2.36	.66734
2015 (N=51)	31.8821	30.71-33.07/2.36	.62245
2016 (N=48)	31.5699	30.71-33.07/2.36	.53661
2017 (N=51)	31.7431	30.71-33.46/2.76	.64433
2018 (N=26)	32.3895	31.50-33.46/1.97	.51703

*Bust circumference is measured around the fullest part of the chest (Nelms & Sucher, 2015).

The data on the male models' chest circumference is shown in **Table 16.** Considering the male model sample, there was a fluctuating decrease in the circumference of the models' chests across the period of six years. In 2012, the average model's chest circumference was 38.5335 inches, and in 2018, the average model's chest circumference decreased to 35.1181 inches. Furthermore, when average chest values are compared over the six-year period, it can be concluded that male model chest circumference ranged between 38.59 inches at maximum, and 32.68 inches at minimum.

Table 16. Male Models' Chests

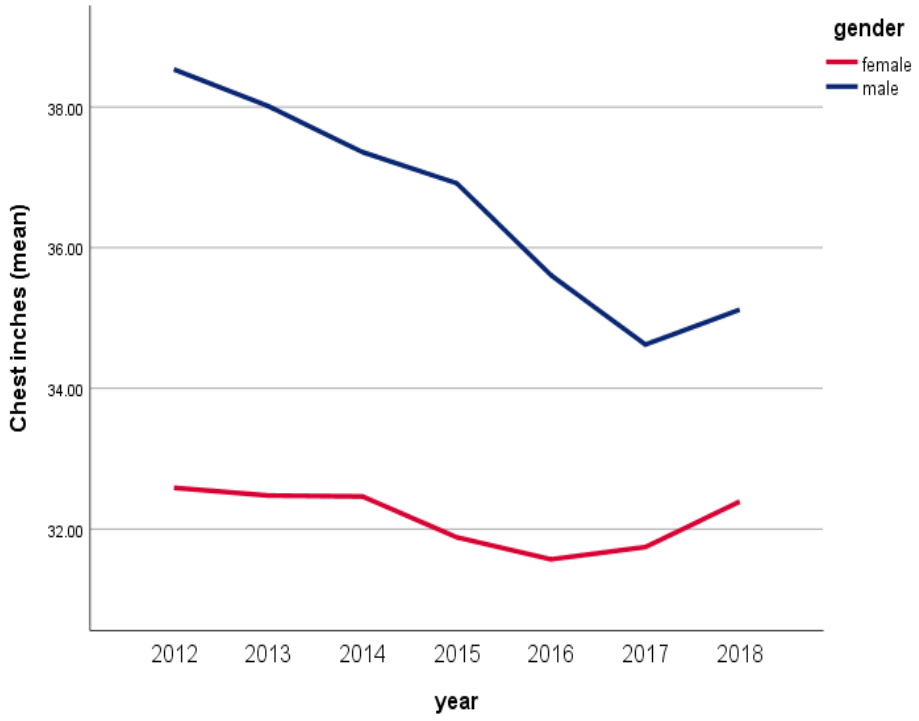
Male Chest	*Mean (inches)*	*Min-Max/ Range*	*Standard Deviation*
2012 (N=24)	38.5335	38.19-38.59/0.39	.13300
2013 (N=49)	38.0122	37.40-38.58/1.18	.52120
2014 (N=45)	37.3579	36.22-37.80/1.57	.38668
2015 (N=51)	36.9153	36.22-37.40/1.18	.33948
2016 (N=52)	35.6072	34.25-36.61/2.36	.56444
2017 (N=51)	34.6225	32.68-36.22/1.18	.83854
2018 (N=25)	35.1181	34.25-36.61/2.36	.67237

*Chest circumference is measured around the fullest part of the chest (Nelms & Sucher, 2015).

Over the course of six years, both female and male models experienced a decrease in circumference of the bust/chest. With this trend, male models were affected at a higher rate as their chest circumference ranged between 38.59 inches at maximum, and 32.68 inches at minimum, creating a difference of 5.91 inches. Female models experienced a stable but smaller decrease in circumference of the bust, which ranged from 33.46 inches at maximum, to 30.71 inches at minimum, creating a difference of 2.75 inches (**Figure 6**).

Figure 6. Chest Circumference Change (2012-2018)

Female (N=312); Bust Mean=32.12; SD .71084;
Male (N=297); Chest Mean=36.52; SD 1.43565



After body measurements were explored, for each model in the sample, WHR (waist-to-hip) ratio was calculated. Waist-to-hip ratio represents waist measurements divided by hip measurements, which is a ratio that is typically used in the modeling industry to indicate the body proportion, and potential fat distribution between waist and hips. According to WHO (The World Health Organization), values lower than 0.90 for adult men and lower than 0.85 for adult women are considered to be within a healthy range. The WHO

determined that waist-to-hip values should be used in combination with BMI to help determine the health of the person, as well as their potential risk for any cardiovascular diseases (WHO report, 2008).

Using descriptive statistics, WHR (waist-to-hip) ratio was further explored for all models in the sample, with the goal to provide an answer to the fifth research question*: Is there a stable decrease in the models' waist-to-hip ratio?*

The data on the female model waist-to-hip ratio is shown in **Table 17.** Considering the female sample, WHR was stable across the period of six years. In 2012, the average model's WHR was .6896, and in 2018, the average WHR decreased to .6823. Furthermore, when average WHR values were compared over the six-year period, it can be concluded that WHR ranged from .74 at maximum, and .65 at minimum. As the difference between the maximal and minimal values was 0.09, such findings suggest that WHR remained stable, or only slightly changed over time, as waist and hip measurements of female models simultaneously, and proportionally decreased.

Table 17. Female Models' Waist-to-Hip Ratio

Female WHR	*Mean*	*Min-Max/ Range*	*Standard Deviation*
2012 (N=26)	.6896	.67-.71/0.04	.01021
2013 (N=51)	.6878	.67-.70/0.03	.00833
2014 (N=59)	.6865	.66-.71/0.04	.00941
2015 (N=51)	.6920	.66-.72/0.05	.01158
2016 (N=48)	.6878	.67-.71/0.04	.00900
2017 (N=51)	.6870	.67-.70/0.03	.00776
2018 (N=26)	.6823	.65-.74/0.09	.01666

* WHR=Waist measurements/hips measurements
*Healthy WHR for adult female should be lower than 0.85.

The data on male model waist-to-hip ratio is shown in **Table 18.** Considering the male model sample, WHR was stable across the period of six years. In 2012, the average model's WHR was .7902, and in 2018, the average WHR decreased to .7866. Furthermore, when average WHR values were compared over the six-year period, it can be concluded that WHR ranged from .86 at maximum, to .75 at minimum. As the difference between maximal and minimal values was 0.11, such findings suggest that WHR remains stable, or only slightly changed over time, as waist and hip measurements of male models simultaneously, and proportionally decreased. Such a trend is represented on **Figure 7**.

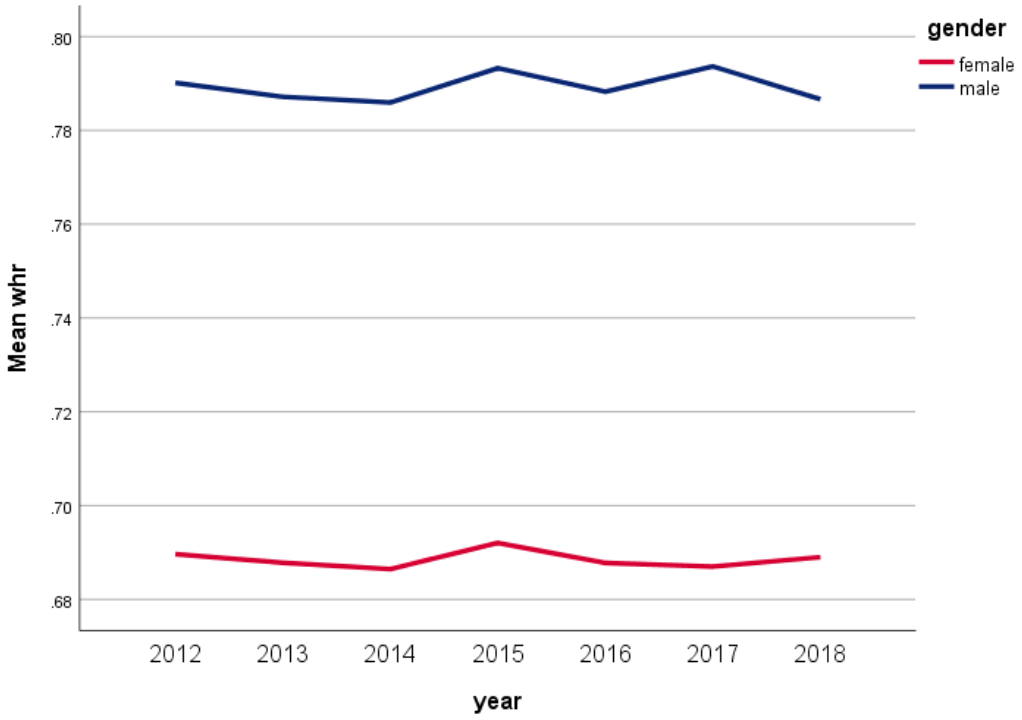
Table 18. Male Models' Waist-to-Hip Ratio

Male WHR	*Mean*	*Min-Max/ Range*	*Standard Deviation*
2012 (N=24)	.7902	.78-.80/0.02	.00652
2013 (N=49)	.7872	.77-.80/0.03	.00678
2014 (N=45)	.7859	.77-.82/0.05	.01183
2015 (N=51)	.7933	.77-.82/0.05	.01074
2016 (N=52)	.7883	.76-.82/0.06	.01473
2017 (N=51)	.7936	.75-.86/0.11	.02168
2018 (N=25)	.7866	.77-.82/0.06	.01194

* WHR=Waist measurements/hips measurements
*Healthy WHR for adult male should be lower than 0.90.

Figure 7. Waist-to-Hip Ratio Change (2012-2018)

Female (N=312); WHR Mean= .6884; SD .01026;
Male (N=297); WHR Mean=.7895; SD .01373



The World Health Organization (WHO) uses BMI index to determine nutritional status and other health related indicators across the World's nations. According to the WHO (2018), classifications for adults are as follows: BMI values below 18.5 belong to the underweight category, and BMI values between 18.5 and 24.9 belong to the normal weight category. For the purposes of this study, the underweight and normal weight categories of BMI classification were used to examine the BMI values of runway models,

with the goal of providing an answer to the sixth research question: *Is there a trend toward lower BMI classification for runway models?*

Body Mass Index represents weight in kilograms divided by height in meters squared. Thus, for each model in the sample, BMI index was calculated using provided weight and height parameters.

The data on the female model BMI is shown in **Table 19.** Considering the female sample, in 2012, the average model's BMI was 15.4935, and in 2018, the average BMI decreased to 15.3162. Female BMI averages over six years were consistently in the underweight or unhealthy category (less than BMI 18.5). Moreover, all BMI averages were under the cutoff for starvation, which is equal to or less than BMI 16, according to the World Health Organization. Furthermore, when average BMI values were compared over the six-year period, it can be concluded that BMI ranged from 15.96 at maximum, to 14.67 at minimum. The difference between maximal and minimal values was 1.29.

Table 19. Female Models' BMI

Female BMI	*Mean*	*Min-Max/Range*	*Standard Deviation*
2012 (N=26)	15.4935	14.67-15.96/1.29	.30697
2013 (N=51)	15.4470	15-15.96/0.96	.18230
2014 (N=59)	15.6106	15.17-15.96/0.79	.22768
2015 (N=51)	15.3531	14.98-15.78/0.80	.20267
2016 (N=48)	15.3681	14.98-15.74/0.76	.19308
2017 (N=51)	15.2605	14.81-15.78/0.97	.26206
2018 (N=26)	15.3162	14.67-15.74/1.07	.26551

*Healthy BMI should not be below 18.5 according to the World Health Organization.

The data on male model BMI is shown in **Table 20.** Considering the male model sample, in 2012, the average model's BMI was 19.3056, and in 2018, the average BMI decreased to 17.4134. Results indicate that Male BMI averages over six years moved from the healthy to the unhealthy category, as they dropped from the healthy BMI range of 18.5-24.9, to the unhealthy BMI below 18.5. Furthermore, when average BMI values were compared over the six-year period, it can be concluded that BMI ranged from 19.73 at maximum, to 16.95 at minimum. The difference between maximal and minimal values was 2.78.

Table 20. Male Models' BMI

Male	*BMI Mean*	*Min-Max/ Range*	*Standard Deviation*
2012 (N=24)	19.3056	19.04-19.73/0.70	.18282
2013 (N=49)	18.8583	18.48-19.24/0.76	.22021
2014 (N=45)	18.5229	18.09-18.84/0.74	.16988
2015 (N=51)	18.1845	17.73-18.67/0.94	.20379
2016 (N=52)	17.7178	17.24-18.28/1.04	.24027
2017 (N=51)	17.6711	16.95-18.48/1.53	.29234
2018 (N=25)	17.4134	17.05-17.82/0.77	.21898

*Healthy BMI should not be below 18.5 according to the World Health Organization.

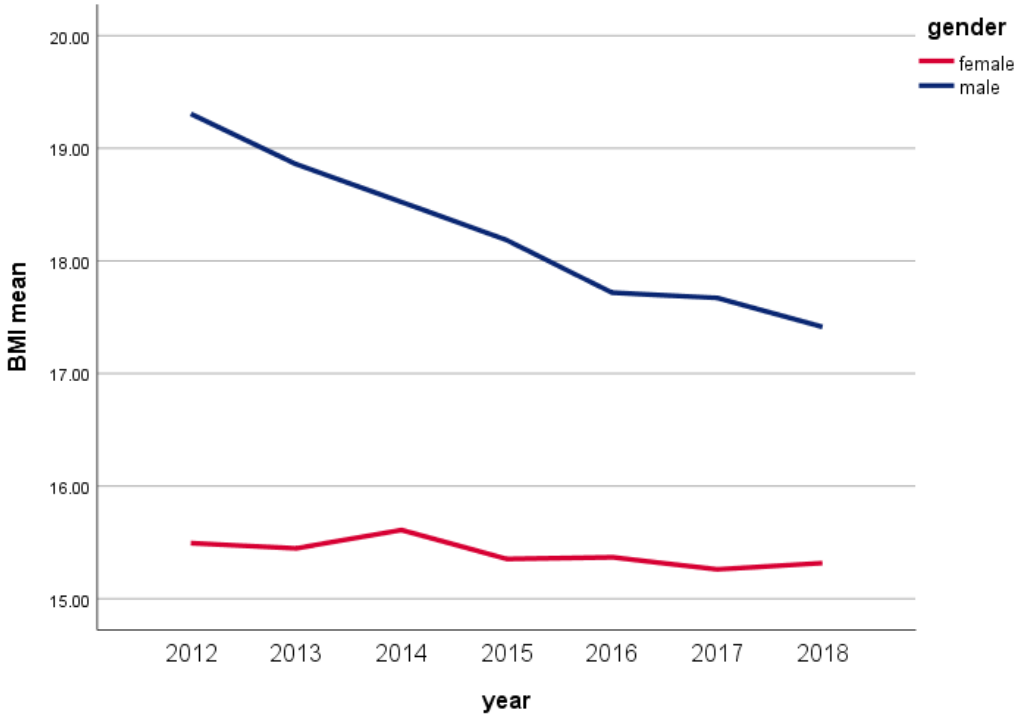
When comparing female and male model body mass index change over six years (**Figure 8**), the following conclusions can be made:

- Female models (N=312) on average had a BMI of **15.4** (Std. dev= .25527; Range: Min 14.6-Max- 15.9);
- Male models (N=297) on average had a BMI of **18.2** (Std. dev= .61487; Range: Min 16.9 -Max- 19.7);

- Drop in BMI index classifications was higher for male models, where BMI averages over six years moved from the healthy (18.5-24.9) to the unhealthy category (below 18.5).
- Female BMI averages over six years were without exception under the cut-off for starvation, which is equal to or less than the BMI 16, according to the World Health Organization.

Figure 8. Models' BMI Change (2012-2018)

Female (N=312); BMI Mean=15.41; SD .25527;
Male (N=297); BMI Mean=18.20; SD .61487



The need to develop an appropriate reference point for the screening and monitoring of adolescents' height, weight and health- related issues has been established by the World Health Organization in 2006. Hence, the WHO released the Child Growth Standards on a continuous age scale from five to eighteen years. Because the ratio between weight and height varies with sex and age during childhood and adolescence, the cut-off values used to determine the nutritional status of groups between 5-18 years old are gender and age-specific (Onis et al., 2007).

To provide a better understanding of BMI values and the way they are distributed depending on a model's age, the sample was divided according to age in two groups: adult (eighteen and above) and minors (less than eighteen years old). Considering the model's age and gender, BMI values were calculated again. For more accurate BMI calculations, the American Center for Disease Control and Prevention (CDC) provides an online BMI calculator that includes calculations for gender, age, height and weight. The online calculator was used to analyze BMI values and their classification. The data on female model BMI for underaged/minor models is shown in **Table 21.**

Table 21. BMI Charts for Female Models under the Age of Eighteen

BMI **by age and year*	*Female <18*	*BMI Range*	*BMI Mean*
2012	N=10	15.71-15.78	15.4059
2013	N=29	15.00-15.82	15.4182
2014	N=25	15.17-15.96	15.6157
2015	N=22	14.98-15.67	15.3093
2016	N=32	14.98-15.74	15.3395
2017	N=37	14.81-15.74	15.2218
2018	N=23	14.67-15.74	15.2998

*All BMI values in this table are classified as underweight (BMI<16) according to World Health Organization.

For female models under the age of eighteen, BMI values ranged from:

- 15.71 and 15.78, in 2012;
- 15.00 and 15.82, in 2013;
- 15.17 and 15.96, in 2014;
- 14.98 and 15.67, in 2015;
- 14.81 and 15.74, in 2016;
- 14.81 and 15.74, in 2017;
- 14.67 and 15.74, in 2018;

Considering female models under the age of eighteen, all models were classified as being underweight according to the World Health Organization. Moreover, minor female models who had BMI values below BMI 15, were classified as being “very far from healthy BMI”

(CDC online charts interpretation). Therefore, the same starvations line BMI equal to or less than 16 held for minors as well as for adults.

For further comparisons, BMI for adult female models were re-calculated using CDC's online calculator for gender, age, height and weight parameters. The data on adult female model BMI is shown in **Table 22.**

Table 22. BMI Charts for Adult Female Models

*BMI *by age and year*	*Female (=18;18>)*	*BMI Range*	*BMI Mean*
2012	N=16	14.67-15.96	15.5482
2013	N=22	15.00-15.96	15.4850
2014	N=34	15.26-15.96	15.6068
2015	N=29	15.00-15.78	15.3864
2016	N=16	15.26-15.67	15.4253
2017	N=14	14.81-15.78	15.3629
2018	N=3	15.29-15.59	15.4418

*All BMI values in this table are classified as severely underweight (BMI<16) according to World Health Organization.

For adult female models, BMI values ranged from:

- 14.67 and 15.96, in 2012;
- 15.00 and 15.96, in 2013;
- 15.26 and 15.96, in 2014;
- 15.00 and 15.78, in 2015;
- 15.26 and 15.67, in 2016;
- 14.81 and 15.78, in 2017;
- 15.29 and 15.59, in 2018;

Considering adult female models, all models were classified as being extremely underweight according to the World Health Organization, as all values were below the starvation line (BMI 16). When comparing results for adult and minor female models, it can be concluded that despite a model's age, an extremely thin body ideal was the apparent aesthetic prerequisite for female runway models, who had an overall skeleton-like body shape.

The male sample was also divided according to age into two groups: adult (eighteen and above) and minors (less than eighteen years old). Model BMI values were calculated using CDC's online calculator for gender, age, height and weight parameters. The data on the male model BMI for underaged/minor models is shown in **Table 23.**

Table 23. BMI Charts for Male Models under the Age of Eighteen

BMI **by age and year*	*Male <18*	*BMI Range*	*BMI Mean*
2012-2015	N=0	n/a	n/a
2016	N=3	17.24-17.54	17.3746
2017	N=19	17.24-18.48	17.7313
2018	N=16	17.05-17.64	17.3552

*2012-2015 there were no models under the age of eighteen, thus BMI values are not applicable (n/a)

For male models under the age of eighteen, BMI values ranged from:

- 17.24 and 17.54, in 2016;
- 17.24 and 18.48, in 2017;
- 17.05 and 17.64, in 2018;

Considering male models under the age of eighteen, all models in 2016 and 2018 were classified as being underweight according to World Health Organization. In 2017, male models that had BMI values higher than BMI 18 were classified in the healthy weight range. In that case, even though models had BMI values lower than BMI 18.5, 0.5 difference was tolerated due to the fact that the models were adolescents and their bodies were still developing (CDC online chart interpretation).

Table 24. BMI Charts for Adult Male Models

*BMI *by age and year*	*Male (=18;18>)*	*BMI Range*	*BMI Mean*
2012	N=24	19.04-19.73	19.3056
2013	N=49	18.48-19.24	18.8583
2014	N=45	18.09-18.42	18.5229
2015	N=51	17.73-18.67	18.1845
2016	N=49	17.24-18.28	17.7388
2017	N=32	16.95-18.20	17.6353
2018	N=9	17.05-17.82	17.5171

*2012 all BMI values are in the healthy weight category (18.5>) according to the World Health Organization

*2016-2018 all BMI values belong to underweight category (<18.5) according to the World Health Organization

For adult male models, BMI values ranged from:

- 19.04 and 19.73, in 2012;
- 18.48 and 19.24, in 2013;
- 18.09 and 18.40, in 2014;

- 17.73 and 18.67, in 2015;
- 17.24 and 18.28, in 2016;
- 16.95 and 18.20, in 2017;
- 17.05 and 17.82, in 2018;

Adult male models had BMI values that ranged between underweight and healthy weight (**Table 24).** To estimate how these values for adult male models were distributed throughout the years, **Table 25.** was used to showcase data.

Table 25. BMI Charts for Adult Male Models with Classifications

BMI	*Male (=18;18>)*	*BMI<18.5*	*BMI>18.5*	*BMI Range*	*BMI Mean*
2012	N=24	N=0	N=24	19.04-19.73	19.3056
2013	N=49	N=2	N=47	18.48-19.24	18.8583
2014	N=45	N=19	N=26	18.09-18.42	18.5229
2015	N=51	N=48	N=3	17.73-18.67	18.1845
2016	N=49	N=49	N=0	17.24-18.28	17.7388
2017	N=32	N=32	N=0	16.95-18.20	17.6353
2018	N=9	N=9	N=0	17.05-17.82	17.5171

In 2012, 100% of male models belonged to the healthy weight category (BMI>18.5). In 2013, 96% of male models belonged to the healthy weight category (BMI>18.5). In 2014, 58% of male models belonged to the healthy weight category (BMI>18.5). In 2015, only 6% of male models belonged to the healthy weight category

(BMI>18.5), while in the period between 2016-2018, there were no models that had healthy body mass indexes (BMI>18.5).

Such results **(Table 26)** indicate that from 2012-2015, BMI for adult male models steadily dropped (from 100% to 6% of the model sample). As the preference for very thin male models remained the apparent aesthetic ideal, between 2016 and 2018, all male models had lower body mass index values, and they were classified as being underweight according to WHO.

Table 26. BMI Classifications for Female and Male Models below Healthy Levels

BMI (2012-2018)	**Female BMI <16**	**Male BMI< 18.5**
2012	100%	0%
2013	100%	4%
2014	100%	42%
2015	100%	94%
2016	100%	100%
2017	100%	100%
2018	100%	100%

*0% models with BMI <18.5 in 2012 meant no model had an unhealthy BMI in that year.

Considering both adults and minor models, and both female and male sample (**Table 26**) results confirmed the following: for female models, 100% of the sample fell below the starvation line, or BMI of 16. Medical and public health studies confirmed that this BMI category for females often indicates amenorrhea (absence of menstruation), infertility, and other critical health problems such as poor bone density, digestive tract problems, hearing problems and other serious health dysfunctions such as shortness of breath, fatigue, heart arrythmia and sudden cardiac deaths (Hudson & Court, 2012). Most

clinical observations for anorexia nervosa confirmed that female patients have BMI values between 14 and 15 (Forbes et al.,1984), and that their mental state is often affected.

BMI values among male model were no less concerning. In 2015, 94% of models had unhealthy BMI values, while in 2016, 2017, and 2018, 100% of the male models were underweight, reaching BMI values closer to 17 (e.g. 16.95). Considering the fact that males have genetically heavier bones, and higher BMI values compared to females (Hudson & Court, 2012), a low BMI value in the male population serves as additional evidence that the same unhealthy body norms exist despite gender category. These results reconfirmed previous findings that professional models, due to occupational aesthetic requirements, are increasingly starving themselves (Record & Austin, 2015; Preti et al, 2008). There is evidence from public health research that workers who are exposed to malnutrition are incapable of working and earning money for a living, which puts them at an increased risk for work impairments (Spurr, 1983). Consequently, findings in this study proposed important questions, of which one is whether models that are starving to retain their thin bodies are in reality actually capable of working without jeopardizing their own life.

4.2. Qualitative results

The purpose of the qualitative study was to determine the aesthetic requirements for high-fashion models of both genders with the aim to establish a benchmark in the literature on appearance requirements for professional modeling as an occupation. Salient appearance attributes under investigation included *gender, age, and facial and body appearance cues*. Additionally, special attention was given to exploration of broader

manifestations of the gender spectrum. For the purpose of this study, visual images were extracted from the popular industry website, *Models.com*.

The website keeps track of the models that appear on the runway in four major fashion capitals in each season: New York, Milan, Paris and London. For models to be selected as a top new talent, the model opened and closed numerous shows during that runway season, performed in walk-in shows that are marked as "exclusives," and they featured in some major campaigns, magazine covers and editorials (as listed on models.com). Every top new talent list contained a model's composite cards (a promotional tool in the form of a photo portfolio) that included natural and unretouched photographs of the model's face and body. Models were commonly featured in underwear or a swimming suit, with a natural hair style and with no make-up (examples of composite cards can be found in the appendix). The top 20 new models (as listed on the website ratings) were extracted separately for female and male model categories from the "Newcomers season Fall/Winter 2018" section. Therefore, the final convenience sample contained composite card photos of 40 models in total.

To define appearance specifics that are in demand for both female and male models, the following research question guided this research phase: *What kind of appearance aesthetic is in demand (as in 2018) for professional runway models of both genders?*

Special attention in this study was given to exploration of non-binary gender appearance modes, which could be used to rank the value of the variable, gender, in a clear order. For that purpose, before qualitative analysis, a *q sort ranking technique* was used to sort and rank 40 images of fashion models. Images were evaluated by 10 participants.

Participants in the q sort technique had enrolled in graduate or undergraduate courses in social psychology of dress (or a similar course with a clear focus on gender identity) at The Ohio State University. Therefore, the participants had at least a basic understanding of gender identities and their manifestations. Participants were asked to use the same criteria to distinguish the model's (conventional or non-conventional) gender appearance. The criteria referred to the common understanding of gender as being displayed in the form of two binary gender groups, female and male. More specifically, feminine appearance meant having an appearance traditionally associated with women, while a masculine appearance meant having an appearance traditionally associated with men.

If the model's gender appearance did not visually fit into either of these two conventional poles, it was classified using other non-binary descriptors under investigations in this phase. Specifically, the idea was based on the assumption that gender can be distinguished by the following ranks or levels: -3 extremely feminine (gender appearance with obvious female features); -2 somewhat feminine (gender appearance with moderately obvious female features); -1 ambiguously feminine (evident genderless appearance features but leaning toward female features); 0- androgynous (gender-neutral appearance features or genderless features, where gender cannot be determined); 1- ambiguously masculine (evident genderless appearance features but leaning toward male features); 2 somewhat masculine (gender appearance with moderately obvious male features); 3 extremely masculine (gender appearance with very obvious male features). Therefore, the *gender appearance ranking scale* contained seven possible levels that rank variable gender in an emerging order, and these levels appear in **Table 27.**

Table 27. Gender Appearance Ranking Scale

Number	Rank	Description of the Rank
-3	Extremely feminine	Very obvious female features
-2	Somewhat feminine	In small degree, evident female features
-1	Ambiguous feminine	Evident genderless features but leaning toward female features
0	Androgynous	Gender-neutral features, genderless features, gender cannot be determined
1	Ambiguous masculine	Evident genderless features but leaning toward male features
2	Somewhat masculine	In small degree, evident male features
3	Extremely masculine	Very obvious male features

After the composite cards of model's were ranked, ten participants agreed that all proposed gender levels should be kept in the coding process, meaning that the models' images were distributed over the proposed non-binary gender spectrum in an approximately equal way, and exclusion of any of the ranks would lead to erroneous interpretation. After the *non-binary gender appearance ranking scale* was accepted, the models' images were coded by a researcher and one additional coder. The additional coder was trained to understand coding instructions, and a coding scheme (please refer to **Table 5**) was provided for the process of the analysis. The percentage of agreement was used to calculate intercoder reliability coefficients for each of the four categorical variables (gender, age, facial and body appearance) and the coefficient of .90 was accepted as the minimum reliability coefficient. The highest acceptable level of reliability was selected intentionally to ensure that the intercoder agreement did not occur by chance.

Gender appearance: Coders achieved 98.75% agreement when analyzing female and male models' gender using the *gender appearance ranking scale.* For female models (N=20), five models with clearly feminine features were classified as being *extremely feminine*; six models were classified as *somewhat feminine*, as they were perceived to have a small degree of evident female features. Four models were described as *ambiguously feminine*, as they had evident genderless features, but overall their appearance leaned toward the female category. Five models were classified as androgynous, as their perceived gender was evidently ambiguous. Hence, androgynous models could not be placed in either the female or the male gender category. For male models (N=20), three models with clearly masculine features were classified as being extremely masculine; five models were classified as somewhat masculine, as they were perceived to have a small degree of evident masculine features.

Six models were described to be ambiguously masculine, as they had evident genderless features, but overall their appearance leaned towards the male category. Six models were classified as androgynous, as their perceived gender was evidently ambiguous, and they could not be categorized as neither the female nor the male. Taking into account the gender appearance modes of the entire sample (**Table 28**), the results showed that 20% of the models had conventional or binary gender characteristics, while 80% of the models were categorized as having non-binary gender features, as 27.5% of the models were categorized as somewhat feminine or masculine, 25% of the models were perceived to be ambiguous, and 27.5% of the sample was clearly androgynous.

Age. Coders achieved 97.5% agreement when analyzing a model's age. For female models (N=20), twelve models (60%) were classified in the adult category, meaning they appeared to be eighteen years old or older. Eight models were classified as belonging to the underage category, meaning that those models appeared to be younger than eighteen years old. Those eight female models that were classified as being minor, were described as appearing to be as young as 14 years old. The oldest female model, in adult category was determined to be 21. For male models (N=20), age was equally distributed among the two age categories (adult and minor), as ten models were classified as being adults, and ten were categorized as being or appearing to be younger than eighteen years old. The youngest age in the male category was determined to be twelve, while the oldest male model age was perceived as being 25.

Body appearance. Coders achieved 100% agreement when analyzing model body features. Body category was categorized using description of corresponding dress size. Body size *small* was described as being equivalent to US dress size 2 (measurement wise it corresponds to these body measurements: bust 32.5 inches, waist 24 inches, hips 34.5 inches). Similarly, the *extra small* body category was described to fit an extra small size (equivalent to US size zero (0) and corresponds to these body measurements: bust 30/31 inches, waist 22/23 inches, hips 33 inches). Among all twenty female models, ten models (50%) were classified as belonging to the small body category, and ten models were classified as belonging in the extra small body category. Additionally, there was 100% agreement that all female models appeared to be underweight as their perceived weight appeared too low to be healthy.

For male models (N=20), fourteen models (70%) were classified as belonging to the small body category (equivalent to a US size small for a men's shirt, with a corresponding chest measurement of 36 to 38 inches), one model was classified as belonging to the average size body category (equivalent to a US size medium for a men's shirt, with a corresponding chest measurement of 40 to 42 inches), while five models appeared to have extra small bodies (equivalent to a US size for adult teens, with chest measurement smaller than 36 inches). In terms of weight classification, 50% of male models appeared to be underweight (their weight appeared too low to be healthy), while the other half was classified as "somewhat below average weight", as they were obviously thin, but were not judged to be unhealthy. As some models were described as "adolescents" their apparently thin look was considered as the sign of their puberty, and young age, rather than a visual indicator of their general health.

Facial appearance. Coders achieved 100% agreement when analyzing model hair and facial features. For a *basic description* of facial features and hair attributes (e.g. long, short, big, small) the coders achieved complete agreement (100%). Furthermore, hair color, hair style and facial features categories contained open coding options; therefore, *additional descriptive information* was collected from each coder. This information was analyzed for consistency between both coders and identified appearance specifics were used to provide in-depth understanding of facial appearance cues.

Hair. Among female models, a basic description of hair color, where identified ranged from dark (N=10), to blond (N=5), bleached (N=1) and red (N=2). Three models had a shaved hair style, an additional three models had very short hair, and two models had

a curly hair style. For male models, hair color ranged from dark (N=8), to blond (N=4), and red (N=2). Two male models had bleached hair, and one model had pink hair color. Three models had a shaved hair style, and two models had long and curly hair styles. Additional descriptive information revealed that in the male model sample, one male model was hairless (bald).

Eyes. Among both female (N=14) and male (N=12) models, their eyes were most commonly classified as being large (N=26), and eleven models in total had light color eyes, described as blue or green (N=11). In the male sample, two models were described as having small eyes. Additional descriptive information revealed that in the female model sample, three models were classified as having eyes indicating Asian descent. In the male sample, two models were classified as having eyes indicating clear Asian descent. Additional descriptive information revealed that eight female models had natural eyebrows. Similarly, male models were found to have no eyebrows (N=1), shaved eyebrows (N=1), and pierced eyebrows (N=1).

Noses. To navigate coding, types of noses were identified and described as follows: *Greek nose* was described as being straight and having a long nose line; *Roman or hooked nose* was described as having a slightly aquiline nose line, meaning with a slight bend toward the top of the nose bridge; *Button-rounded-up nose* was described as being small and slightly rounded, often tipping slightly upward. The *Nubian nose* was described as having a long nose shape with a wide nose base (Moorhouse, et al. 2009; Azim, et a., 1974). Results reflected a noticeable variation in models' noses. Among female models, four models were perceived as having a Greek, straight and long nose line; two models were

described as having a hooked and a slightly aquiline nose line: seven models had button-rounded-up and small noses, and four models had a Nubian nose. Among male models, three models were perceived having a Greek, straight and long nose line; four models were described as having a hooked and a slightly aquiline nose line, five models had button-rounded-up and small noses, and four models had a Nubian nose. Additional descriptive information collected revealed that one male model had a high nostril piercing.

Ears. To navigate coding, the most common ear types were identified and described as follows: *pointed* ears are pointed at the tip of the upper ear ridge; *protruding* ears stick out from the side of the head; *asymmetrical* ears are misaligned or uneven in placement from the crown of the head; and *symmetrical* ears are well aligned (Medlej, 2014). Among female models, symmetrical ears were the most common type (N=15), but a few models had other ear types, including pointed (N=1), protruding (N=2), or asymmetrical (N=2). Among male models, symmetrical ears were also the most common (N=12), but a few models had other ear types as well, including pointed (N=3), protruding (N=2), and asymmetrical (N=3). Additional descriptive information regarding ears revealed that two male models and eight female models had pierced ears.

Additional facial specifics. The additional descriptive information collected provided a better understanding of facial cues. Coders agreed that both female and male models had beautiful teeth (N=17), meaning that teeth were straight, white, and evenly spaced. Two male models and two female models had an evident gap between their front two teeth, while one female model had an obvious gold tooth implant. Similarly, coders agreed that ten female models and eight male models had high cheekbones; six female

models and four male models had full lips; fourteen female models and twelve male models had long necks, and one male model had a facial tattoo.

In the female sample, twelve models had white or pale skin color, one model had dark skin with the depigmenting skin condition of vitiligo, and seven models additionally were perceived to have yellow or dark skin color. In the male sample, thirteen models were classified as having white or pale skin color, while seven models were described as having yellow or dark skin tone. Additionally, four male and six female models were found to have light or heavy facial freckles, three male models had facial moles, while five female models had distinctive or numerous moles.

After the gender, age, body and facial appearance were analyzed for both female, and male model categories, the description of non-binary gender aesthetics was more closely assessed. Hence, the following research sub-question was proposed: *Is there a greater demand for models with non-binary gender appearance?*

Taking into account the forty models (N=40) explored, five female, and three male models were described as having a conventional, or cis-gendered appearance. Therefore, eight models in total, which constitute 20% of the sample, was categorized as *extremely feminine or masculine.* Six female, and five male models were classified as *somewhat feminine or masculine,* as they were perceived to have a small degree of evident and conventional gender features. This means that eleven models in total, or 27.5% of the models sampled, were categorized as somewhat feminine or masculine. Furthermore, four female, and six male models were described as *ambiguously feminine* or masculine, as they had evident genderless features, but overall their appearance leaned toward the female or

male category. In another words, ten models, or 25% of the models sampled were perceived to be ambiguous.

Lastly, but not less important, five female and six male models were classified as androgynous, as their perceived gender was evidently ambiguous. Hence, eleven androgynous models, or 27.5% of the total models sampled could not be placed in neither the female nor the male category. Taking into account all models selected as top new talents for season 2018, there was a greater demand for models with non-binary gender appearance modes, as only 20% of models had conventional gender characteristics, while 80% had non-binary gender appearance. More specifically, non-binary gender appearance modes were categorized as *somewhat conventional* for 27.5% of the models that had a small degree of evident and conventional gender features; *ambiguous* for 25% of the models that had evident genderless features, but overall appearance leaned toward the one of the binary categories, and *androgynous* for 27.5% of the total models whose gender could not be determined (**Table 28**).

Table 28. Gender Appearance Ranking Modes

Gender Appearance	**N=models**	**Percentage**
Extremely feminine/masculine	8	20%
Somewhat feminine/masculine	11	27.5%
Ambiguous feminine/masculine	10	25%
Androgynous	11	27.5%

After the conclusion was determined for forty models in the qualitative study, the categorical variable *conventional* or *unconventional gender appearance* included in the secondary data set was explored. Using descriptive statistics, the number of female and male models categorized to have non-binary gender appearance was analyzed to provide the answer on the same research question*: Is there a greater demand for models with non-binary gender appearance?*

Considering the female model sample **(Table 29)** across the six-year period (2012-2018), 21.8% of total female models (N=312) were classified as *non-binary female*. In 2014, about 15% of runway models selected to display fashion week collections, had non-binary gender appearance. This trend continued to rise to over 50% of non-binary female models that did shows during Fall/Winter 2018 season.

Table 29. Female Models and Conventional versus Non-Binary Gender Appearance

Female/by year classification	*Total number (N)*	*Classified as Conventional Female (N, %)*	*Classified as Non-Binary Female (N, %)*
2012	26	24 = 92.3%	2 = 7.7%
2013	51	51 = 100 %	0 = 0%
2014	59	50 = 84.7%	9 = 15.3%
2015	51	41 = 80.4%	10 = 19.6%
2016	48	35 = 72.9%	13 = 27.1%
2017	51	31 = 60.8%	20 = 39.2%
2018	26	12 = 46.2%	14 = 53.8%
2012-2018	312	244 = 78.2%	68 = 21.8%

*Binary classification in the secondary data set refers to the following: All models with evident feminine or masculine appearance characteristics were labelled as either conventional female/male; otherwise, they were labelled *non-binary female/male*

Considering the male model sample **(Table 30)** across the six-year period (2012-2018), 24.6% of total male models (N=297) were classified as *non-binary males*.

Table 30. Male Models and conventional versus Non-Binary Gender Appearance

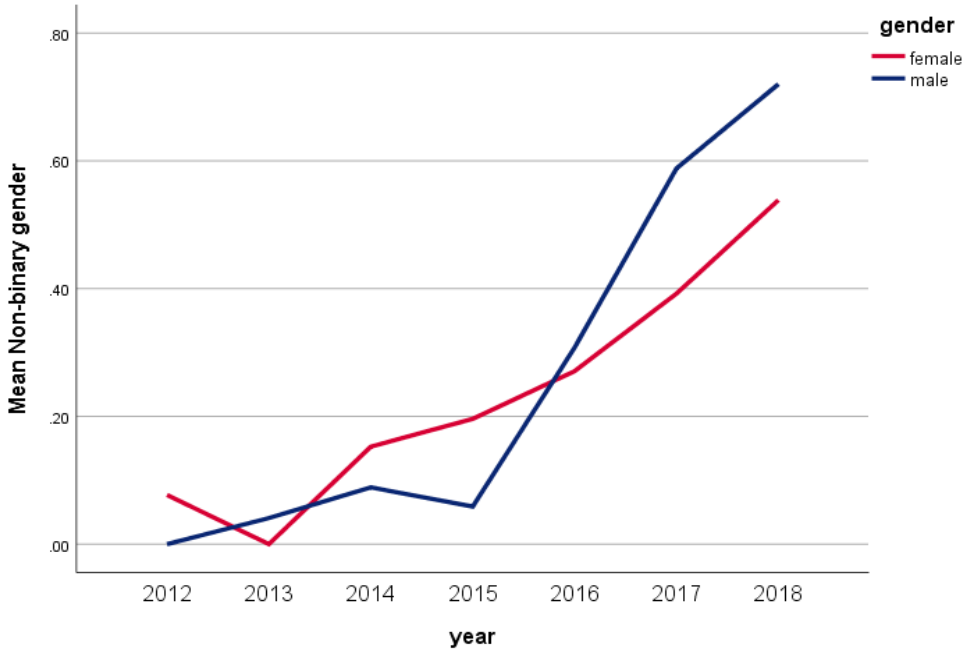
Male/by year classification	*Total number (N)*	*Classified as Conventional Male (N, %)*	*Classified as Non-Binary Male (N, %)*
2012	24	24 = 100 %	0 = 0%
2013	49	47 = 95.9%	2 = 4.1%
2014	45	41 = 91.1%	4 = 8.9%
2015	51	48 = 94.1%	3 = 5.9%
2016	52	36 = 69.2%	16 = 30.8%
2017	51	20 = 39.2%	30 = 58.8%
2018	25	7 = 28%	18 = 72%
Total Number 2012-2018	297	224= 75.4%	73 = 24.6%

* Binary classification in the secondary data set refers to the following: All models with evident feminine or masculine appearance characteristics were labelled as either conventional female/male; otherwise, they were labelled *non-binary female/male*

By 2016, there was a large increase in the percentage of non-binary male models. This trend continued to rise to over 70% non-binary male models that did shows during Fall/Winter 2018 season. Since both female and male categories increased in the number of non-binary models, further analysis (2012-2018) **Figure 9.** clearly indicates that the demand for non-binary gender appearance increased since 2014 for female models, and 2015 for male models. Furthermore, in 2018, 53.8% of female models, and 72% of male models with non-binary gender appearances did high fashion runway shows during fashion week season.

Figure 9. Non-Binary Gender (2012-2018)

Female (N=312); Non-Binary Gender Mean=.2179; SD .41352;
Male (N=297); Non-Binary Gender Mean=.2458; SD .43128



To answer the research question, and sub-question of the qualitative study (*what kind of appearance aesthetic is in demand (as in 2018) for professional runway models of both genders? Is there a greater demand for models with non-binary gender appearance?)* that initiated the analysis of appearance aesthetic requirements for professional runway models, the following conclusions can be drawn.

Regarding a model's gender appearance, results revealed that non-binary gender appearance modes were more prevalent than conventional ones (as in 2018). A majority, or 80% (N= 32) of the 40 models sampled, were categorized as having non-binary gender features. Furthermore, non-binary gender features had been classified as: a.) *somewhat feminine or masculine* for 27.5% of the models that had, in a small degree, evident gendered features; b.) *ambiguous feminine or masculine* for 25% of the models as they were perceived to have evident genderless features but still they could be thought of as leaning toward either the female or male pole on a gender continuum; c.) androgynous in the case of 27.5% of models that had genderless features, where gender could not be determined. Only 20% of the models sampled were perceived to have conventional binary gender characteristics.

Those results were cross-checked for greater validity using secondary data set. Considering the female model sample across the six-year period (2012-2018), 21.8% of total female models (N=312) were classified as *non-binary female*. Considering the male model sample across the six-year period (2012-2018), 24.6% of total male models (N=297) were classified as *non-binary males*. The demand for non-binary gender appearance increased since 2014, and 2015 respectively for female models, and male models in the sample. Furthermore, in 2018, 53.8% of female models, and 72% of male models with unconventional gender appearance worked high fashion shows during fashion week season.

In terms of the models' age, results revealed that the majority of female models (N=60%) appeared to be eighteen years old or a bit older (up to 21). The other 40% of

models were assessed as being younger than the age of eighteen, and, in some cases, models were perceived as being even as young as 14 years old. For male models (N=20), age was perceived as equally distributed among two age categories (adult and minor). Ten models were classified as being adults, up to 25 years old.

The remaining ten male models were categorized as being or appearing to be younger than eighteen years old. One male model was even described as looking so young as to resemble a twelve-year old boy. Such results suggest that the preference for a juvenile appearance ideal is present in both female and male categories as the hypothetical age categories among the two genders were described as ranging in age between 12 and 25.

In a terms of body appearance, results revealed that 97.5% of the 40 models sampled were perceived as having small and thin bodies, while only one male model was perceived as having an average body size. Ten female, and five male models were perceived as having an extra small body size, small enough to fit into a clothing size zero (corresponds to the female body measurements: bust 30/31 inches, waist 22/23 inches, hips 33 inches, or size extra small for adult male teens, with chest measurement smaller than 36 inches). Ten female models, and fourteen male models were categorized as having a small body size, small enough that they would fit into clothing size small (corresponds to the female body measurements: bust 32.5 inches, waist 24 inches hips 34.5 inches or male size small, with chest measurement of 36 to 38 inches). All female models, and 50% of male models were classified as appearing to be underweight as their weight were perceived as to low to be healthy. Some models were described as "adolescents" with apparently thin look, but their thinness was rather sign of their puberty, and young age, than visual indicator

of their malnutrition. In addition, female models were described as being thin, while male models' bodies were described as being thin, and not too muscular.

In terms of facial appearance, hair style and color, results were more diverse. Among models, where identified hair color ranged from dark, blond, red, to bleached, and pink. Diversity was also evident in the type of hairstyle, as one male model was bald, while nine models had either shaved or very short hair. Interestingly, six of those models were female, and their hair style was described as emulating a male models' look. Likewise, two male models had long and curly hair styles, while eight male models had hair of medium length that was described as emulating a female models' look.

There was apparent diversity in the ethnic descent of the models. From all models sampled, five models were classified as having eyes that indicated Asian descent; eight models were classified as having a Nubian or Afro-American nose line. Additionally, fifteen models were classified as having yellow or dark skin tones. Nevertheless, models had obvious forms of appearance particularities having a facial tattoo, having a gold tooth implant, having the vitiligo skin condition, having no facial hair, having heavy freckles, distinctive or numerous moles, having protruding or pointed ears, and having hooked, aquiline nose lines, and pierced nostrils. Therefore, findings related with facial specifics suggest that high fashion emerging models have very unique, and somewhat unconventional facial features, and their visual cues (at least in that area) are very individual, but are not perceived as normative. This is in apparent contrast to previous literature that defined facial beauty of models as ideal, and normative (Jones, 1970; Soley-Beltran, 2006).

Chapter 5. Discussion

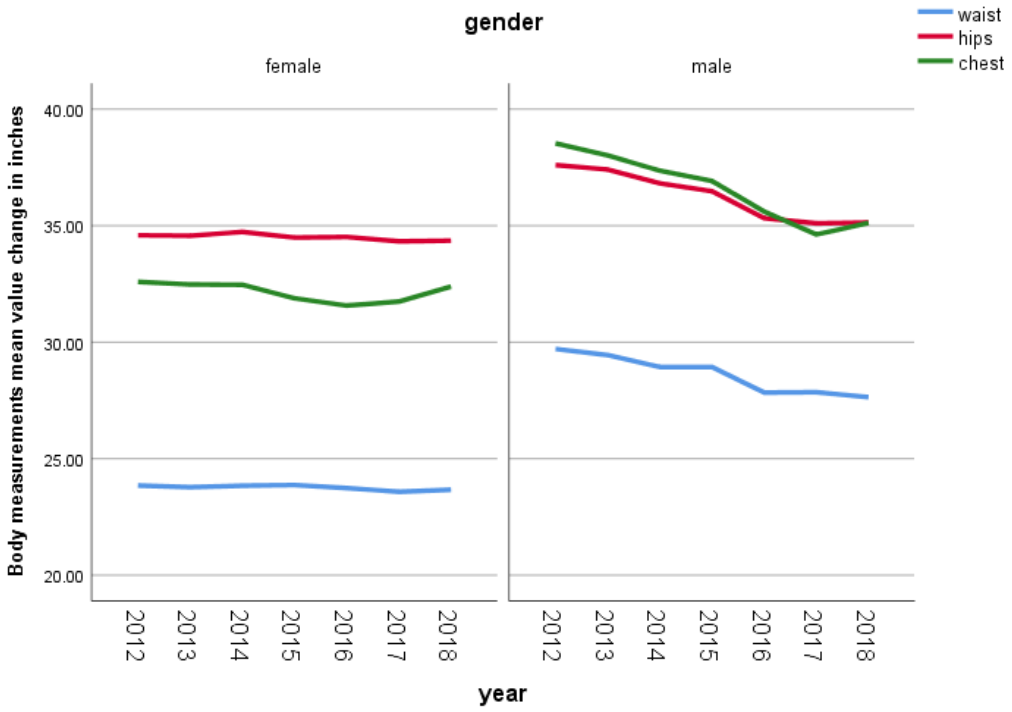
5.1. Quantitative findings key summary

When comparing female and male model body measurements waist, hips, bust/chest and observing their change over six years, the following conclusions were made: both female and male models experienced a decrease in circumference of the hips, waist, and bust/chest (**Figure 10**). With this trend, male models were affected at a higher rate than females as the average hip circumference reached 37.80 inches at maximum and decreased to 33.46 inches at minimum, creating a difference of 4.34 inches. Average waist circumference reached 29.92 inches at maximum, to 26.38 inches at minimum, creating a difference of 3.54 inches. Similarly, their average chest circumferences ranged from between 38.59 inches at maximum, to 32.68 inches at minimum, creating a difference of 5.91 inches. Therefore, the highest drop in male model body measurement was in the chest (-5.91 inches), followed by the hip measurement (- 4.34 inches), and waist measurement (-3.54).

Female models experienced a stable but smaller decrease in average circumference of the hips, which ranged from 35.04 inches at maximum, to 33.07 inches at minimum, creating a difference of 1.97 inches. Decrease in average circumference of the waist, ranged from 24.80 inches at maximum, to 22.83 inches at minimum, creating a difference of 1.97 inches. Similarly, decrease in average circumference of the bust, ranged from 33.46 inches at maximum, to 30.71 inches at minimum, creating a difference of 2.75 inches. Therefore, the highest drop in female model body measurement was in the bust (-2.75 inches),

followed by the similar decreases in hip, and waist measurement both of which were equal (-1.97).

Figure 10. Comparing Female and Male Models' Body Measurements Change over Six Years (2012-2018)



*Female (N=312); Waist Mean=23.76; SD .38525; Male (N=297); Waist Mean=28.59; SD .85905
*Female (N=312); Hip Mean=34.5; SD .39360; Male (N=297); Hip Mean=36.2; SD 1.03102
*Female (N=312); Bust Mean=32.12; SD .71084; Male (N=297); Chest Mean=36.52; SD 1.43565

As both female and male body measurements decreased over the time, and because the male population was more affected, female and male bodies thus became similarly tubular and flat. When averages of minimal and maximal measurements for females, were compared with averages of minimal and maximal measurements for male models, evidence of this trend became clear:

- In hips the difference between minimal female (33.07 inches) and minimal male (33.46 inches) body measurement was 0.39 inches; difference between maximal female (35.04 inches) and maximal male (37.80 inches) body measurement was 2.76 inches. Additionally, maximal female measurements in hips (35.04 inches) were higher than minimal male measurements in the same area (33.46 inches).
- In waist measurement the difference between minimal female (22.83 inches) and minimal male (26.38 inches) body measurement was 3.55 inches; difference between maximal female (24.80 inches) and maximal male (29.92 inches) body measurement was 5.12 inches
- In bust/chest the difference between minimal female (30.71 inches) and minimal male (32.68 inches) body measurement was 1.97 inches; difference between maximal female (33.46 inches) and maximal male (38.59 inches) body measurement was 5.13 inches. Additionally, maximal female measurements in the bust (33.46 inches) were higher than minimal male measurements in the same area (32.68 inches).

The given results confirmed that female and male body, especially in the hips, and bust/chest has become more similar in the size, and the shape over this six-year period. Since hips and waist for both female models and male models decreased proportionally, there was only slight change in the model's hip-to-waist ratio. Average WHR in the female sample over the six-year period ranged from .74 at maximum, and .65 at minimum (difference .11). Average WHR in the male sample over the six-year period ranged from

.86 at maximum, and .75 at minimum (difference .09). The fact that difference between maximal and minimal average WHR for female model's (.74) and male models (.75), was only 10% (equal to .01 difference) served as evidence that lower part of the body (including waist, and hips) for both genders was almost equally structured.

Results furthermore showed that female and male models height changed disproportionately. Over six-years' time, the average female models height increased by 1.1205 inches, ranging from 68.90 inches (5'11''), and 72.05 inches (six feet tall) on average. Likewise, average male model's height decreased by 0.9 inches, ranging from 75.20 inches (6'3''), and 72. 44 inches (just over six feet tall) on average. The difference between maximal and minimal average height for female model's (72.05) and male models (72.44), was only 0.39 inches, indicating that female and male models more often had the similar height.

When comparing female and male model body mass index over period of six-years the following conclusions were made: female models (N=312) on average had a BMI of 15.4 (Range: Min 14.6-Max- 15.9); male models (N=297) on average had a BMI of 18.2 (Range: Min 16.9 -Max- 19.7). Drop in BMI index classifications was higher for male models, where BMI averages over six years moved from the healthy (18.5-24.9) to the unhealthy category (below 18.5). In 2015, 94% of models had unhealthy BMI values, while in 2016, 2017, and 2018, 100% of the male models were underweight, reaching BMI values closer to 17 (e.g. 16.95). Considering both adults and minor female models, BMI averages over six years consistently were under the cut-off for starvation, which is equal to or less than the BMI 16, according to the World Health Organization (please refer to **Table 26**). Low,

or dropping BMI values in both female, and male models, serve as evidence that the same unhealthy body norms exist despite gender.

5.2. Qualitative findings key summary

Taking into account the female and male models who were selected as top new talent for the 2018 season, there was a greater demand for models with non-binary gender appearance modes, as only 20% of all models had conventional binary gender appearance characteristics, while 80% had unconventional or non-binary gender characteristics. More specifically, non-binary gender appearance modes were categorized as *somewhat conventional* for 27.5% of the models that had a small degree of conventional gender features; *ambiguous* for 25% of the models that had evident genderless features, but overall appearance leaned toward the one of the binary categories, and *androgynous* for 27.5% of the total models whose gender could not be determined. When those results were cross checked using the categorical variable conventional, or unconventional gender appearance from the secondary data-set, next trends were found.

Considering the female model sample across the six-year period (2012-2018), 21.8% of total female models were classified as *non-binary female*. In 2014, about 15% of runway models selected to display fashion week collections, had non-binary gender appearance. This trend continued to rise to over 50% of non-binary female models that did shows during Fall/Winter 2018 season. Considering the male model sample across the six-year period (2012-2018), 24.6% of total male models (N=297) were classified as *non-*

binary males. By 2016, there was a large increase in the percentage of non-binary male models.

This trend continued to rise to over 70% non-binary male models that did shows during Fall/Winter 2018 season. Demand for models with non-binary gender appearance modes increased since 2014, and 2015 respectively for female part, and male part.

Another trend revealed in the qualitative study was a high preference for model's with youthful appearance, and this trend was even more pronounced in the male sample. For male models age was equally distributed among the adult (eighteen or above) and minor (under eighteen) categories. The youngest age in the male category was determined to be twelve, while the oldest male model age was perceived as being 25. Similarly, 40% of female models that were classified as being minor, were described as appearing to be as young as 14 years old, while the oldest female model was determined to be 21.

In a terms of body appearance there was complete agreement among coders that all female models appeared to be underweight, half of the sample was described to have a small body size, while the other half was perceived to have extra small body size. For male models' 70% of the sample were described having the small body size, while five models appeared to have extra small bodies, and one model belonged to the average size category. In terms of weight classification, 50% of male models appeared to be underweight, while the other half was described as "somewhat below average weight".

Lastly, but not less important, facial features revealed range of differences among selected modeling population. Rich pool of different facial characteristics was captured in every aspect of facial, and hair features, including differences in shapes and sizes of eyes,

noses, and ears. Higher diversity among models was also seen through descriptors of skin color, as well as perceptions of ethnic diversity identified through the shapes of noses and eyes.

5.3. General discussion using integrated, mix method findings

When results from the qualitative and quantitative studies were integrated for better understanding of appearance aesthetics among professional runway models, convergence of conclusions occurred more often than divergence of conclusions. In other words, two sets of data supported each other, confirmed and cross-validated the occurrence of the most common visual trends among this sample of professional runway models. Therefore, this mixed method study concluded that three general trends were captured in this parallel analysis of occupational aesthetics in the modeling industry. Three trends were:

- *Prevalent and dangerous thinness*
- *Non-binary gender aesthetic*
- Growing *juvenilization*

Prevalent and dangerous thinness. The most salient trend captured in this study was prevalent and dangerous thinness, affecting both female models and male models. Results from both quantitative and qualitative studies confirmed that thinness was the most normative occupational characteristic of the high-fashion model labor force. Quantitative results showed that hips, waist, and breast/chest measurements, for both female and male models, dropped in circumference during the investigated time period (2012-2018). Average *hips* circumference for female, and male models was 34.52 inches, and 36.22

inches respectively. Average *waist* circumference for female, and male models was 23.76 inches, and 28.59 inches respectively. Average *breast* circumference for female models was 32.12 inches, and for male models, chest circumference was 36.52 inches.

Both female and male body measurements decreased over the time, but the male population was more affected. The highest drop in male model body measurements was respectively in the chest (-5.91 inches), hips (- 4.34 inches), and waist (-3.54) measurements. Among female models, the highest drop in body measurements was in the bust (-2.75 inches), while the decrease in hips, and waist measurements was equal (-1.97). Furthermore, male models' bodies were rapidly dropping in size, sometimes even becoming smaller and thinner compared to female model bodies. For comparison, maximal average female measurements in hips (35.04 inches) were higher than minimal average male measurements in the same area (33.46 inches). Likewise, maximal average female measurements in bust (33.46 inches) were higher than minimal average male measurements in the same area (32.68 inches).

Qualitative results extended these findings, providing more detailed descriptions of how models' bodies appeared. Among male models, only one model was found to have a body size that corresponded to an average body size (healthy looking, and able to fit into dress size medium). For all other male models' bodies, there was complete agreement that they were unhealthy thin with a small body frame. Bodies were described as being so small to fit dress sizes for male teens. In addition, all female models were described as being underweight, with bodies small enough to fit into dress size zero (dress size zero

corresponds to the following bust-waist-hips measurements: 30 inches-22 inches-32 inches.

The trend of model thinness is estimated as dangerous as it was characterized with very low, and even dropping body mass index values. Female models, (N=312) on average had a BMI of 15.4 (Std. dev= .255; Range: Min 14.6-Max- 15.9), while male models (N=297) on average had a BMI of 18.2 (Std. dev= .615; Range: Min 16.9 -Max- 19.7). The male model sample experienced a higher drop in BMI values, as between 2016 and 2018, male model BMI decreased reaching values closer to 17. Consequently, 100% of the male models sampled in 2016, 2017 and 2018 (adult and minors) were underweight, having BMI values less than 18.5, which is determined as the minimal healthy body mass value. Additionally, when minor male models had BMI values higher than 18, but lower than 18.5, they were classified (using the CDC chart) in the healthy weight range. In those cases, 0.5 difference was tolerated due to the fact that the models were adolescents and their bodies were still developing. However, considering the fact that males have genetically heavier bones, and higher BMI values compared to females (Hudson & Court, 2012), low, or dropping BMI values in the male model population is concerning.

In the female model sample, 100% of the sample fell below the starvation line, meaning they had a BMI lower than 16. In some cases, the minimal BMI values were lower than 15, reaching values of 14.6. Such results are dangerous and even life-threatening, as medical and public health studies confirm that this BMI category for females often indicates amenorrhea (absence of menstruation), infertility, and other critical health problems such as poor bone density, digestive tract problems, hearing problems and other

serious health dysfunctions such as shortness of breath, fatigue, heart arrythmia and sudden cardiac deaths (Hudson & Court, 2012). Most clinical observations for anorexia nervosa confirmed that female patients have BMI values between 14 and 15 (Forbes et al.,1984) and that their mental state is often affected (Garner & Garfinkel, 1982). Additionally, low and dropping BMI values underscore extreme difference between today's models and their peers in average population in America. Today's models have BMI values that are between 7.2 and 10.4 points lower (on BMI scale) than their average peers who are nineteen years old. Their average American peers have BMI values of 25.8 for females and 25.4 for males respectively (for average population statistics please refer to **Table. 3**).

Non-binary gender aesthetic. The second important trend captured in this study was the rising demand for models that present a non-binary gender appearance aesthetic. This trend was prevalent in both female models and male models, and this argument was cross-validated in both qualitative and quantitative study. Quantitative results from the secondary data set, using the categorical variable conventional and non-binary gender, showed that across the six-year period (2012-2018), 21.79% of female models and 24.6% of male models were classified as having a non-binary gender appearance. Increasing demand for non-conforming gender appearances became evident from 2014 (15.2% non-binary females) to 2018 (53.8% non-binary females), with an increase of 38.6%. A similar trend emerged in the male model market from 2015 (5.9% non-binary males) to 2018 (72% non-binary males), an increase of 66.1%.

Qualitative results both reconfirmed and expanded upon these findings. Results showed that in 2018, 80% of the models in the analysis had non-binary gender features

(such as morphing female and male features that makes gender ambiguous) while 20% of models appeared to have conventional ones (such as smaller nose, and ears, and higher cheekbones for females, or a square jaw, larger cheekbones, and brow ridges for males). Additionally, the qualitative study expanded further on statistical evidence, explaining how non-binary gender appearance manifests in the visual sense. Using a gender ranking scale, the agreement was accomplished in a pretest of 10 participants using a *q sort* method that the variable gender can be ranked in an emerging order. Hence, a gender appearance ranking scale consisted of seven different levels, starting from *extremely feminine, or masculine*, on each end, *somewhat feminine or masculine as the next level, ambiguous feminine or masculine as the next level, and androgynous as the midpoint of the 7- item scale.* Using this scale, qualitative results provided additional descriptions of the model sample.

More specifically, 20% of models were described as having conventional gender appearance attributes (or binary), 27.5 % of models were described as *somewhat feminine or masculine,* and these models had to a small degree, evident conventional gendered features; 25 % of models were described to be *ambiguous feminine or masculine* and those models had evident genderless features but still their appearance leaned toward either the female or male pole. Finally, 27.5% were characterized as androgynous at the midpoint of the scale, meaning that they were perceived to have genderless features, thereby making gender ambiguous and not possible to be determined (Huart, Corneille & Becquart, 2005).

Unconventional gender appearance might be explained with specific facial features that increased perceived similarities among female and male models. Comparison of

models' faces revealed the following aesthetic commonalities: heavy freckles, distinctive or numerous moles, protruding or pointed ears, and hooked, aquiline nose lines, and piercings. Furthermore, female and male models frequently emulated each other's hair styles. Male models often had very long, curly, hairstyles, sometimes having been bleached or even colored in a pink tone. Similarly, female models often had shaved, or very short hair. Such results serve as an additional evidence of previously elaborated findings that at least in the visual sense, conventional gender markers are becoming more blurred.

Alternatively, unconventional gender appearance might be explained by the higher presence than in previous years, of transgender models on the American fashion scene. According to the latest fashion week report, 53 trans and non-binary models participated in 20 runway shows at New York Fashion Week Fall/Winter 2018, during which they introduced collections for Spring 2019 (Tai, 2018). Likewise, visibility of trans and non-binary models clearly increased on the global fashion scene in other fashion markets such as Paris, London and Milan. Top models such as Andreja (Andrej) Pejic, Teddy Quinlivan, Gigi Hari, Nathan (Natalie) Westling, Fin Buchanan, had been featured in major advertising campaigns for global brands such as Michael Kors, Tory Burch, Jeremy Scott, Oscar de la Renta, etc.

Growing *juvenilization.* The third salient trend captured in this study was growing juvenilization of the models. Being or appearing young was another normative occupational characteristic of the high-fashion model labor force. Female and male models' comparison further revealed that growing juvenilization was more prominent among male models in the sample. Specifically, the drop in male model age was evident

starting in 2016 through 2018. In 2016 and 2017, 5.7% and 9.7% of the male models were minors respectively; while in 2018, 64% of the male models were minors. This jump from 2016 to 2018 was 58%. For female models in the sample, the percentage of minor female models was the lowest in 2012 (at 38.5% of the total), while the number of minor female models increased each year thereafter. For example, after the 2016 runway season, minor models accounted for at least 66.7% of the total sample.

Qualitative results confirmed these quantitative findings. In 2018, 50% of male models appeared to be younger than eighteen years old. The youngest age in the male category was determined to be twelve. Some male models were perceived as appearing childlike, or adolescent like, apparently young and in puberty. However, among female models in the sample, qualitative results slightly diverged from quantitative results for model age. Quantitative results for 2018 showed that 88.5% of female models were minors, yet the majority of female models in the visual analysis of 2018 appeared to be adults ages eighteen years old or a bit older. Specifically, female model age was perceived to range between 14 and 21 years.

The slight data divergence can be simply explained. First of all, age for adult models had a very small range (18 to 21 years old), meaning that even twenty years old models are young adults. Secondly, girls physically and physiologically mature earlier than boys. For example, gynecologists found that on average, the first menstrual period for young women typically occurs between the ages of thirteen and fifteen (Hillard, 2002). In addition, it is well documented that girls younger than age eight may enter into "precocious puberty" and begin to develop sexual characteristics (Carel & Leger, 2008). Therefore,

from this age on, girls develop salient sexual characteristics (e.g. breasts, hips), and experience body transformation, while boys develop their sexual characteristics a few years later (Hillard, 2002).

Consequently, physiological changes lead to certain appearance modifications. Girls are found to have higher investment in their appearance, compared to male counterparts, as they dye and style hair, pluck their eyebrows, and use various cosmetic treatments to manipulate their visual appearance (De Vries, et al., 2014). All those appearance changes support the fact that female models might look older than their male counterparts, even when they may be the same biological age. Despite slight differences among female and male models' physiques, the age range among all models in the sample was clearly very small and all models were classified either as teenagers or young adults. Such findings support the fact that being or appearing young is another normative occupational characteristic of the high-fashion model labor force.

5.4. Theoretical implications

This dissertation adds to the existing literature in three key areas.

First, it benchmarks the most prevalent trends in occupational aesthetics among the professional runway model population, that include becoming thinner, younger, and less conventionally gendered. These first two mention trends are particularly problematic from a labor standpoint as they are disproportionately associated with basic human physiology. Models age, and their bodies develop more adult characteristics as they age, so it is completely unrealistic to expect models to look younger, and thinner while their biological age increases. Therefore, instead of retaining the established models as they mature into

full adulthood, the industry typically seeks new talents, quickly replacing others that are maturing too fast, or developing too quickly.

Furthermore, the fact that models are becoming more unconventional in terms of the gender makes them even more atypical, from the general population and harder to find. The point is that unconventional gendered models are selected to promote genderless clothing lines which should embrace higher inclusivity in the fashion industry (Moore, 2018). However, the sudden rise in the inclusion of gender non-conforming models, should not obscure the principle that labor selection in the modeling industry entails differences that stem from social inequality. As some job seekers embody the desired qualities of their occupation more than others, employers subjectively select/or reject candidates based on physical appearance and characteristics that bodies do or do not have. It is a fact that by embracing unconventional gender, the modeling industry might seem more visually inclusive. However, in reality, the industry has kept the same discriminatory nature it has always had, as employment is still based on social segregation and models are sorted on the basis of their age, gender, race, and attractiveness.

Second, this dissertation research provides quantifiable evidence that unrealistic occupational aesthetics seriously affects runway modeling labor, transforming humans into walking skeletons. Idealization of the same skeletal body in both case of female, and male models has detrimental effects within modeling workplace. Already thin bodies of models since the 1990 have recently become even smaller in bust/chest, waist and hips over the six-year period of 2012-2018, which is a very disconcerting fact. This trend provides even more upsetting statistics, including the fact that average females between the ages of 18-

34 have only 1% chance of being as thin as a runway model (Gladstone, 2016). Similarly, runway female (N=312) and male (N=297) models investigated in this research weighed on average 108 pounds, and 141 pounds respectively, which represents 42 pounds, and 33 pounds lower weight respectively, than their female and male peers (for average population statistics please refer to **Table. 3**).

These statistics raise two major concerns for occupational and public health research.

(1). Skeletal body ideals basically symbolize that starvation is a beauty ideal. Models embody industry ideals, but to achieve such unrealistic and unhealthy ideals, models must engage in appearance management behaviors that are risky to both physical health (tongue patch surgery, starvation) and mental health (anxiety, depression, self-hatred, and extreme body dissatisfaction.)

(2). Models serve as authorities of beauty legitimization. They convey idealized aesthetic standards that direct customer norms of consumption and define public opinion about what is beautiful, attractive, and culturally valued. From that point of view, extreme thinness both endangers a model's health and simultaneously perpetuates unrealistic and dangerous expectations of what behaviors are necessary and valued in order to achieve the beauty ideal. Furthermore, they needlessly confirm in minors and young adults that such appearance management behaviors are good and realistic pursuits.

It is important to note that findings that apply to male model body measurements are especially significant, because male modeling is often neglected in the academic

literature, even though male fashion weeks have an equally important place, meaning, and a time in the official fashion industry calendar. Hence, to the knowledge of the researcher, this is the first research study that has explored male model aesthetics and body change over any certain period of time. Findings of this study suggest that male and female bodies are becoming more similar, as revealed by average circumference in the hip and bust/chest that are somewhat similar.

Even though occupational health researchers have recognized that the narrow appearance aesthetic in the modeling industry is dangerous for female models' health, male models' health has not been questioned to date. Meanwhile, all working models in this poorly regulated occupational category remain unprotected from potential workplace hazards. As independent contractors, models are not eligible for The US Occupational Safety and Health Administration (OSHA) plans, since OSHA workplace protection applies to employees only (Record & Austin, 2015).

Without OSHA protection, model agencies, fashion designers, and other clients such as magazine editors or advertising firms are not pressed to maintain any tangible standard when selecting models for jobs. Hence, even though current occupational standards expose models to significant harm, no one is responsible for risks of potential health impairment. Furthermore, without changes in the occupational aesthetic within the modeling industry, the same unhealthy standards circulate in the global media space and can thereby affect consumers' body dissatisfaction and motivate unhealthy appearance

behaviors. Therefore, unhealthy occupational aesthetics in the modeling realm is not only a modeling industry problem, but it represents a serious public health issue as well.

Third, this study provides alarming evidence to health, and work safety researchers, that body malnutrition is seriously affecting both female, and male model's health. Female models' lives are in serious jeopardy, as their body mass index is without exception lower than BMI 16. In some cases, the minimal BMI values were even lower than BMI of 15, reaching values of BMI 14.6. Such results are dangerous and even threatening, as medical and public health studies confirmed that this BMI category for females often indicates amenorrhea (absence of menstruation), infertility, and other critical health problems such as poor bone density, digestive tract problems, hearing problems and other serious health dysfunctions such as shortness of breath, fatigue, heart arrythmia and sudden cardiac deaths (Hudson & Court, 2012).

Most clinical observations for anorexia nervosa confirmed that female patients have BMI values between 14 and 15, and that their mental state is often affected (Forbes et al.,1984). Nevertheless, social work studies found that workers who are exposed to malnutrition are incapable of working and earning money for a living, which puts them at an increased risk for work impairments (Spurr, 1983; James, Ferro-Luzzi & Waterlow, 1988). Consequently, findings in this study propose important questions, of which one is whether models that are starving to retain their thin bodies are in reality actually capable of working without jeopardizing their own life.

5.5. Practical implication

For models and fashion community stakeholders: Using knowledge and findings from this study, all working models should feel encouraged to step-up and make the change. To change the fashion community, models should start changing themselves first. Extreme drive for thinness and preoccupation with physical perfection is characteristic to all models. Consequently, accompanying factors are body image disturbance, eating disorders and different risky behaviors (such as use of fat burners, and laxatives, smoking to reduce food cravings, eating non-food items, etc.). Most models, even knowing that they may have eating disorders, are uninterested in seeking treatment knowing that maintaining an unrealistically thin look, represents the only precondition to keep working. There are numerous medical treatment providers and associations worldwide that assist with eating disorder treatments, so no models should have to suffer from the complications of malnutrition that can endanger their lives or mental health. However, taking advantage of such services may be prevented by lack of acknowledging any disturbance or being told that such restrictive or risky behaviors are necessary for continued employment in the industry.

Additionally, being a part of an international, digital and increasingly transparent fashion community gives every model, and fashion community stakeholder (e.g. designer, blogger, casting director, photographer) an equal and powerful position to facilitate a change. There are various platforms that provide support, legal guidance, and helpful information. Model Alliance is certainly one of them (modelalliance.org). With support from famous fashion models, casting designers, and designers, researchers, and activists,

Modeling Alliance focuses on problematic areas in the modeling industry, while fostering policies, and new law implementations. For example, in 2013, members of Model Alliance were jointed by senators Jeffrey Klein and Diane Savino at a New York press conference to announce new legislation that apply to child workers in the modeling, and creative industries. Since then, New York Labor Law defines a child performer as anyone under the age of 18, who provide artistic, or creative services.

There are other meaningful non-governmental organizations that serve models, managers, and agents (e.g. m.a.m.a.org), or model labor (e.g. equity.org.uk). All these entities promote a common goal to regulate unregulated practices in the modeling industry and through implementation of new policies (e.g. sexual harassment, health and workplace safety, antidiscrimination etc.) to create healthier working environment for its increasingly international labor force.

For consumers. According to the latest World Health Organization reports, body measurements for the general population in America are steadily increasing, and for runway models, body measurements are decreasing. From that standpoint, promoting excessively thin models as aesthetic and cultural ideals is particularly problematic for consumers who are exposed to this normative media content on a daily level, and simultaneously via different media platforms. By stigmatizing the imperfect body through a constant barrage of beautiful and "perfect" bodies, this so-called war against actual bodies promotes nothing less than discrimination, and every consumer is some sort of victim.

Priming consumers with idealized model images is causing body dissatisfaction, high investment in physicality, and transforming the body through diet, exercise, and

product consumption. This results in preoccupation with body, food and weight. There are powerful sources of academic literature that show how discrepancy between actual bodies and ideal bodies directly affects consumers' mental and physical health. As many as 95% of women, and up to 75% of men are reported to be dissatisfied with their bodies (Rudd & Jestratijevic, 2019). The prevalence of anorexia nervosa is increasing among girls ages 15-19 (Smink, et al., 2012). Meta-analysis on the male population showed that, between 1999 and 2009, the number of males hospitalized for issues related to eating disorders increased by 53% (Zhao & Encinosa, 2011). Therefore, occupational aesthetics in the modeling industry is not only an internal problem affecting models, but it has a high external toll on the general public who view fashion media. Everyone is affected.

Considering the fact that the fashion industry is global, and powerful as it directly influences what billions of people visually and emotionally encounter, it will be extremely difficult to enforce laws against the media that manipulate beauty images endlessly. Therefore, it is increasingly important to increase awareness among consumers about the detrimental effects of these distorted media images. Perhaps raising acute consciousness in the minds of consumers that beauty standards in the modeling industry are unrealistic and even deadly, is a reasonable and active strategy that stakeholders can pursue. Once consciousness is acutely raised, only then can consumers become proactive in developing personal resilience to the pernicious effects of negative imagery.

5.6. Limitations and future research

It is important to highlight some of the limitations of this dissertation that should be addressed in future studies. First, this study was conducted using a secondary data set that was collected in the industry for primary purposes. Due to the fact that it was collected to facilitate model confirmation for runway show purposes, model measurements were taken prior to the show. Therefore, those measurements reflect only body circumferences at the given time. Furthermore, the description of trends, and main findings for body change, are applicable to models in the sample, and those models are high-fashion runway models exclusively. If any inferences to the general model population are to be made, formal statistical long-term trend analysis should be conducted across at least a ten-year period of time using primary data. Another solution for improvement would be if the same sample of models is explored over a certain period of time, combined with interviews and longitudinal health analytics.

An alternative solution to analyze body measurements can be big data analytics. As a reminder, all model composite cards (the primary descriptive information provided about models to designers and companies who might hire them), including names, height, bust/chest, waist, hips measurements, and often other values (weight, shoe size, pants size etc.) are public and available for analytical purposes. Hence, big sets of data can be systematically extracted from online settings, by collecting thousands of models' information from the most prominent model networks, or agencies websites. Such an approach would certainly provide more comprehensive findings, under the condition that

only runway models are sampled, and not mixed with models from other commercial departments that likely have higher body measurements.

Furthermore, for a clear understanding of a model's nutrition, interviewing models would provide more efficient understanding of their eating habits and related health concerns. Even though this study proved that unhealthy occupational aesthetics expose the modeling labor force to significant harm, industry representatives may disconfirm the importance of these findings arguing that body mass index is anthropometric (indirect health assessment focused on body measurements), and hence an imperfect measure of human health. Even though those arguments would be correct, body mass index is particularly unreliable for people with a high level of muscle mass, as their high body mass index values would be unrealistically higher than people with lower level of muscle mass. However, for extremely thin people, deficiencies associated with body mass index are lower, and the metric is frequently used as an accompaniment with medical tests to evaluate malnutrition related health risks.

Lastly, but not less important to mention that the primarily purpose of this study was to explore the occupational aesthetics focusing on body parameters of female and male models, hence, some tangential but possibly important findings (e.g. higher racial diversity) are intentionally omitted in the discussion. Therefore, the possibility that there is higher diversity among runway models in terms of ethnicity should be tested by applying visual analysis on large data samples.

5.7. Concluding statements

The physical appearance pressures that professional fashion models face seriously sacrifice their life and general health. Most models, even knowing that they may have eating disorders, are uninterested in seeking treatment because they understand that maintaining an unrealistically thin appearance represents the only precondition to keep working. Additionally, taking advantage of eating disorder treatments is disallowed, as modeling industry representatives have turned a "blind eye" and failed to acknowledge that unhealthy appearance behaviors are necessary for a continued employment in the industry. The pressure which the models encounter as a part of their job requirements is then translated in global consumer markets, where consumers come to understand that an imperfect body is stigmatized through a constant barrage of beautiful and "perfect" bodies in all media. This so-called war against actual body shapes promotes nothing less than discrimination, and every consumer is a victim of a sort. Studies linking thin-obsessed behaviors, and product and services consumption to poor health outcomes have permeated the academic literature for years. Therefore, this study intends to warn academic and general audiences that unhealthy occupational aesthetics in the modeling realm must be changed, as it is not only a modeling industry's problem, but it represents a serious public health issue to be addressed as well.

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Appendix A. Composite Card examples, Qualitative Study

Photo represents example of publicly available composite cards.

Photo represents example of publicly available composite cards.

Appendix B. Quantitative Study Population Tables

"Gender by year"

	female	male
2012	26	24
2013	51	49
2014	59	45
2015	51	51
2016	48	52
2017	51	51
2018	26	25

"Non-binary appearance by year"

	no/yes	
2012	48	2
2013	98	2
2014	91	13
2015	89	13
2016	71	29
2017	52	50
2018	19	32

"Age (binary) by year"

	18+	under 18
2012	40	10
2013	71	29
2014	79	25
2015	80	22
2016	65	35
2017	46	56
2018	12	39

"BMI classification by gender"

	female	male
(00.00 - 16.00) Severe thinness	312	0
(16.00 - 16.99) Moderate thinness	0	1
(17.00 - 18.49) Mild thinness	0	196
(18.50 - 24.99) Normal range	0	100