The fusion of technology and creativity

A qualitative study on the gender balance in the fashion trend forecasting industry

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Abstract:

Fashion trend forecasting is an essential part of the global fashion system. This study is an investigation into the gender balance in the fashion trend forecasting industry. The part provides an historical overview of the fashion trend forecasting industry and discusses the methodologies used by fashion trend forecasters. Moreover, it establishes that the fashion trend forecasting industry is female-dominated. The second part focuses on several technological advancements in the last four decades that influenced fashion trend forecasting. The latest development in the field is the gradual adoption of Artificial Intelligence systems, as the existence of large streams of fashion-related data impact the already labour-intensive and time-consuming practice of fashion trend forecasting. The novel data-led trend forecasting agencies are often led by anonymous parent companies, big data streams and tech competencies. AI is applicable in the industry mainly to observe emerging trends faster, to reduce overproduction and to meet consumer needs more precisely. On the other hand, the results also indicated perceptions of AI as unfitted for some qualities of fashion, such as garment tactility, intricate design details and emotional values. Therefore, a balance between minds and machines needs to be found. Fashion and technology have been historically gendered, as they are respectively seen as feminine and masculine industries. Combining these worlds in fashion trend forecasting can shine a light on how gender continues to dominate life at work. This study is grounded within a qualitative research paradigm. A comprehensive analysis of existing literature was conducted to provide a theoretical grounding to the study. This was followed by 13 semi-structured interviews to obtain primary data from fashion trend forecasting industry professionals. The research findings narrate the participants' experience in the field of fashion trend forecasting when it comes to doing research, technological advancements and the gender balance in their trend agencies. The findings of the study indicate that the fashion trend forecasting industry, under the influence of technological advancements, remains female-dominated. The various teams within trend agencies show a traditional division of labour along gender lines. Enhancing communication and collaboration between teams is key. Achieving a more gender-balanced workforce in trend agencies can lead to positive outcomes such as boosting financial performance and bringing more innovative ideas to the table. The findings and recommendations of this study will hopefully provide meaningful guidance in this regard, as well as contribute constructively to the current body of literature on fashion trend forecasting in the unexplored area of gender balance.

Keywords: fashion trend forecasting, trends, big data, artificial intelligence, gender balance, gender blindness.

ACKNOWLEDGEMENTS

First and foremost, I am extremely grateful to take part in the GLOCAL programme, which has allowed me to acquire knowledge on a range of different topics while studying at three universities. Moreover, I have had the honour to get to know a lot new people and learn a lot from different cultures. Second, I would like to thank Professor Ben Wubs for providing me guidance throughout the process of writing my master thesis. Ben helped me to develop this thesis from an idea into a complete research project and has devoted his time to offer continued support for my academic and mental well-being during the past couple of months. Third, I would especially like to thank my friends, roommates, and family for their moral and physical support during the tough times of writing a thesis in the COVID-19 pandemic. Thank you for always encouraging me to get the best out of myself and cheering me up during difficult periods. Lastly, I would like to thank all the interviewees for being willing to participate and providing me with their incredible personal views on the fashion trend forecasting industry. I have thoroughly enjoyed talking to everyone and I am amazed at all the knowledge I was able to get on this highly interesting industry.

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Chapter 1: Introduction

Jason Grech, a fashion designer from Melbourne developed the first Cognitive Collection in collaboration with IBM Watson during Melbourne Spring Fashion Week (MFSW) in 2016. Grech and his team used Watson Visual Recognition and cognitive tools to get insights into fashion trends, consumers and design possibilities to back up his creative process. Ten years' worth of fashion data and real-time social information helped him to further develop his design, colour treatments, fabric textures and a colour palette of pastels. IBM Watson used cognitive computing techniques to emulate human intelligence. The question answering computing system collected over 600,000 images from Instagram, fashion archives, Pinterest and Twitter. Moreover, the metadata and the number of likes on these platforms were scanned to see which styles generated the most buzz among influencers, while showcasing the overall consumer sentiment. Another source of inspiration for Jason were architectural images which were utilized to fabricate structured patterns and silhouettes that matched historical runway images. This data-driven approach speeded up the fabric and silhouette picking phase by 600%, as the average of 28 days was reduced to only 4. Understanding key customer trends in the past and present proved to be crucial for Jason's success during MFSW. Cognitive tools can understand unstructured and structured data through training led by humans. The couture label JASONGRECH is specialized in bridal and red-carpet gowns, which makes finding the ideal combination between being avant-garde and easy-to-market key. Jason wanted to set the trend but also appeal to a broad audience. Watson provided Grech with a way to make time-efficient decisions based on a large data stream, while also mapping out other designers' work in an easily understandable matter. The end product was the creation of a successful 12-piece couture dresses collection through a fusion of technology and creativity, based on a colour palette that Grech would not have considered before.[1]

Forecasting fashion trends is a hidden practice of the fashion industry, but it nonetheless is a business service that is essential to the global fashion system. The fashion trend forecasting industry has its origin in the 19th century and has undergone several changes since then. While starting as one-man operations, they organically developed to small and medium-sized style agencies which are often female-led. Gender stereotypes of the modern era benefitted the role of women in the industry, who had 'the eye' for spotting trends and had the better sensibility to

[1] "JASONGRECH," IBM, accessed May 22, 2021, https://www.ibm.com/case-studies/jason-grech

determine what is 'good taste'.[2] The fashion industry is known for providing women with the opportunity to develop great careers and get leadership positions that were not possible in many other fields.[3] Over the past decades, the nature of the fashion trend forecasting industry has changed significantly due to the influx of capital and technology. Moreover, gender stereotypes in the workplace are addressed more often as they influence the gender balance in companies. As there is only limited qualitative evidence available concerning the development of the gender balance in the fashion trend forecasting industry after the 1980s, this thesis aims to answer the following research question: did the technological advancements of the last four decades have an influence on the gender balance in the fashion trend forecasting industry in Europe?

Fashion trend forecasters gather and share intelligence about colours, silhouettes and fabrics. This is done through fabricating trend books, seminars, trend talks or online reports on a subscription basis.[4] Fashion trend forecasters are part of trend agencies or consultancy bureaus that provide business-to-business services (B2B). Trend forecasters function as the 'insurance companies' for retailers and designers. They aim to solve the problem of imperfect information about trends and help during the initial development stages development of garments.[5] The fashion forecasting sector was established to capitalize on reducing uncertainty and gaining clients' confidence is a vital business practice.[6] Fashion trend forecasters demonstrate that the business of fashion not only entails selling clothes but also selling ideas. These ideas are derived from their practice in the fashion field, as there is no formal methodology for conducting fashion trend forecasting. Nonetheless, it is not just a matter of 'gazing at a crystal ball', it is a creative process that can be understood and applied by people who possess the required tools and knowledge. Some forecasters believe in a quasi-scientific mathematical approach when it comes to fashion trend forecasting. Others, however, believe in employing their intuition when it comes to spotting trends. Trends are then developed into concepts and presented in a visually attractive way that is easily understandable for retailers and designers.[7] As a result, the first chapter of this thesis aims to answer the following question:

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[2] Regina Lee Blaszczyk and Ben Wubs, *The Fashion Forecasters: A Hidden History of Color and Trend Prediction* (London: Bloomsbury, 2018), 27.
[3] Ibid, 79.
[4] Blaszcyck and Wubs, *The Fashion Forecasters*, 5.
[5] Kara Tucholke and Pauline Frohm, "The trend forecasting paradox? An exploratory study of the compatibility of trend forecasting and sustainability," (PhD diss., Swedish School of Textiles, 2020), 3.
[6] Jenny Lantz, *The trendmakers: behind the scenes of the global fashion* industry (New York: Bloomsbury Academic, 2016), 9.
[7] A.J.C De Wet, "Investigating Fashion Forecasting Approaches in South Africa: Proposed Way Forward," (MSc diss., University of Johannesburg, 2008), 1.

what is fashion trend forecasting? The chapter provides an overview of the historical trajectory of the fashion trend forecasting industry, the importance of trend mechanisms and the characteristics of a fashion trend forecaster.

The 1980s were a dream decade for fashion trend forecasters since the business environment in the fashion industry became more competitive and companies started to actively look for trends. Heightened consumer expectations were formed under the process of globalization, changes in the supply chain and the advent of the Internet. Technological advancements changed how trends were analysed and communicated. The rise of new and influential trend forecasting agencies in the early 2000s such as Worth Global Style Network (WGSN) coincided with the digital transformation of society.[8] Traditional fashion trend forecasting agencies are facing a backlash as their work is branded as 'opinionated guesswork'. The limitations of traditional fashion trend forecasting along with the emergence of big data have inspired newer trend agencies to explore novel ways of trend forecasting.[9] Big data refers to large data sets that require artificial intelligence (AI) to analyse them. The use of AI makes it possible to produce fashion trend forecasts based on real-time data while using a more consumer-focused point of orientation. Moreover, it allows fashion retailers to get insights on which colours or patterns will be market-popular, as well as accurate descriptions of the duration of these trends. With the pace of the current fast-fashion market, trend forecasts need to be detailed and tailored to the client.[10] The conversation is not only about clothes anymore. Clients want to see the bigger picture as they are asking for additional information on sustainability, technological developments and innovative business models. Nevertheless, the core responsibility of a fashion trend forecaster remains to recognize shifts in contemporary society, while identifying its drivers and estimating their relevance.[11] Chapter three analyses the fairly recent influx of technology and capital in the fashion trend forecasting field, by answering the question: what is the role of technological advancements in the development of the fashion trend forecasting industry? The chapter tackles the most significant changes in both fashion trend forecasting itself and the agencies that are present in the field. Accordingly, it aims to find out if AI can serve as a creative tool in fashion trend forecasting and what the role of the forecaster will be.

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[8] Blaszcyck and Wubs, *The Fashion Forecasters*, 24- 25.
[9] Mikayla DuBreuil, "Traditional vs. Big-Data Fashion Trend Forecasting: an examination using WGSN and EDITED," (MSc diss., University of Delaware, 2020), 1-2.
[10] Leanne Luce, *Artificial Intelligence for Fashion: How AI is Revolutionizing the Fashion Industry* (New York: Apress, 2018), 141.
[11] Tucholke and Frohm, "The trend forecasting paradox?" 8.

The opportunities, resources and career paths available to men and women, as well as the types of barriers constraining them, are impacted by their gender.[12] Cultural conceptions based on gender stereotypes are continuously perpetuated and internalized within society.[13] Traditional fashion trend forecasting agencies face competition from data-led agencies that capitalize on the growing importance of the industry. These data-led agencies are controlled by anonymous parent companies, big data streams and tech competencies. Analysing the contribution that women have made in the development of AI systems from a historical perspective shows how women became gradually pushed out as the industry became more socially, culturally and economically important. The rise in prestige and the increase in capital involved in the tech sector led to changing social norms on its subsequent professions.[14] Chapter four aims to answer the question: how has the gender balance in fashion trend forecasting evolved since the 1980s? This chapter analyses the impact of gender stereotypes on working in the fashion trend forecasting industry. It aims to highlight the gender roles in traditional and data-led fashion trend forecasting agencies. Moreover, it discusses the value that achieving a more gender-balanced workforce in fashion trend agencies can bring.

Chapter 5 presents the analysis and findings of 13 qualitative semi-structured interviews that were conducted with various fashion trend forecasters. The empirical data is divided into three main categories that built on a variety of sub-themes. Furthermore, the analysis is conducted based on excerpts taken from the interviews. Chapter 6 discusses the conclusion and limitations of this study. This thesis will close by making suggestions for future research. Fashion trend forecasters, educational institutions and fashion retailers can benefit from this study by gaining a greater understanding of how technological advancements are changing the nature of the industry. This research provides critical insights on the opportunities that incorporating AI systems can bring to the table, as well as some of the pitfalls that should be considered. Furthermore, the findings of this study provide valuable empirical results that can inform fashion trend forecasting agencies on the importance of achieving a gender-balanced workforce. As gender continues to dominate life at work in many sectors, it is important to contextualize these issues and address the deeper layers behind them.

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[12] Mandy Wheadon and Nathalie Duval-Couetil, "Token entrepreneurs: a review of gender, capital, and context in technology entrepreneurship," *Entrepreneurship & Regional Development*, 31, No. 3 (2019): 310-311.
[13] Maureen Molloy and Wendy Larne, "Who needs cultural intermediaries indeed?" *Journal of Cultural Economy* 3, No.3 (2010): 372-373.
[14] "AI and Gender: Four Proposals for Future Research," University of Cambridge, accessed May 4, 2021, https://www.repository.cam.ac.uk/handle/1810/294360

Innovative aspect

The academic world has produced many publications on the history of fashion. Only a few have looked at the history of fashion as a topic that combines broader historical trends, economic culture, technological advancements and gender stereotypes.[15] Inspiration for this thesis comes from Christine Ruane's chapter on the redevelopment of the Russian fashion press in the book *Producing Fashion: Commerce, Culture, and Consumers* published in 2008. In this chapter, Ruane highlights the role of women in the development of the Russian fashion press in the nineteenth century. Women and their remarkable entrepreneurial skills created a dynamic market for fashion magazines in Russia. The fashion press offered them a rare opportunity to have a meaningful professional life while learning more about business culture. They capitalized on the cultural conceptions that were tied to their gender role. The cult around male intelligence helped reinforce women's entitlement to the domestic sphere. Gendered language within societal discourse helped to keep the male and female sphere separated from each other. Language perpetuated the idea that women had skills that were compatible with the world of fashion and society became forced to believe this. As a result, women established themselves as influential tastemakers.[16] The second half of the nineteenth century witnessed the birth of 'new journalism' in Europe. The Russian fashion press utilized their European counterpart as an example for their development. Technological advancements, such as steam-powered multi-cylindered presses and mechanized formatting, allowed publishers to produce in big quantities. Huge publishing houses became to dominate the industry and large amounts of capital were needed to purchase the necessary expensive machinery. Some firms mechanized, while others continued to rely on traditional publishing technologies, leaving them with limited opportunities to develop.[17] The mass-circulation of the fashion magazines also meant that the visual appearance became more important. The magazines started to incorporate intricate needlework patterns and well-designed advertisements, which necessitated greater technical skills. To streamline all these processes, a new generation of entrepreneurs focused on developing the organizational and administrative talents inside the publishing houses. It soon became apparent that men were the ones who could bring the technological know-how and financial resources to the table. Even though they had a lack of interest in the actual content of

[15] Regina Lee Blaszczyk. "Rethinking Fashion," in *Producing Fashion: Commerce, Culture, and Consumers*, ed. Regina Lee Blaszczyk (Philadelphia: University of Pennsylvania Press, 2008), 10.
[16] Christiane Ruane, "Spreading the Word: The Development of the Russian Fashion Press," in *Producing Fashion: Commerce, Culture, and Consumers*, ed. Regina Lee Blaszczyk (Philadelphia: University of Pennsylvania Press, 2008), 26-30.
[17] Ruane, "Spreading the Word," 32.

the fashion magazines, these men proved to have great influence in shaping and maintain gender roles in Russia through the magazines' content. What became apparent in this story is that females were not allowed to acquire the necessary technical skills, at the same time they did not have the means to provide for large capital investments. The cultural conceptions in society thus greatly benefited men, while women had difficulties competing with them.[18] This resulted in an overhaul of the gender balance in the Russian fashion press. The chapter sparked an interest if the same holds for the fashion trend forecasting industry as it has been subject to significant technological advancements over the last four decades. The traditional fashion trend forecasting agencies face competition from data-led trend forecasting agencies, which are led by large capital groups. The incorporation of AI can come with significant barriers for women to develop themselves within fashion trend agencies, as it still perceived as a masculine profession. Therefore, this thesis aims to fill a knowledge gap in researching if technological advancements in the fashion trend forecasting industry have influenced the composition of its gender balance.

Literature review

The body of literature focusing on fashion trend forecasting is slim. To provide an overview of what has been written on the topic of fashion trend forecasting, both non-academic and academic literature is reviewed. Non-academic literature is aimed at fashion professionals and students interested in the fashion trend forecasting field. It is used to get profound knowledge on the workings of being a fashion trend forecaster, as well as shining a light on the business side of the fashion industry. Fashion trend forecasting has been described by various authors as entailing a 'mystical' approach. This is because many consumers are not aware of the fact that fashion trend forecasting exists, let alone the significant impact it has on fashion retailers and designers. Qualities such as developing 'the eye' or having some kind of aesthetic sensibility seem to be a reoccurring pattern. The practice of fashion trend forecasting entails both scientific and creative methods. Fashion forecasters need to have a profound understanding of trends and possess a certain level of experience in the fashion industry.[19] Rita Perna is an important actor within the trend forecasting field after enjoying a long career in fashion coordination. In her book *Fashion Forecasting: A mystery or a method?* Perna attempts to highlight the importance of 'seeing' and using intuition in developing forecasts. Published

[18] Ruane, "Spreading the Word," 36.
[19] Tucholke and Frohm, "The trend forecasting paradox?" 8.

in 1987, the book targeted students and trade professionals and was one of the first practical works on the subject.[20] By describing the various actors in the fashion industry and their interrelationships, the book aims to describe who is behind the formulation of trends in the industry and what the consequences are. The appendix found in the book translated important jargon used in the fashion forecasting field. Although an academic theoretical framework is missing, the book provides an insight into the fashion industry from an insider's perspective.[21] As a follow-up to the book written by Perna, media researcher Evelyn L. Brannon combines traditional and digital forecasting approaches to showcase how 'seeing' is a constitutive part of fashion trend forecasting. Her book *Fashion Forecasting*, published in 2005, is written for students in fashion and retail practitioners.[22] Drawing on her experience of working as a forecaster for Butterick Fashion Marketing in New York, she provides an insider perspective. Brannon sees forecasting as a process of negotiation between the fashion industry and the consumer. She also points to the occurrence of megatrends, which cross industry lines and mirror economic cycles. These megatrends involve shifts in lifestyles and lead to fast fashion firms capitalizing on delivering new styles within a short period.[23] Brannon applies various theories and places importance on the *Zeitgeist* as an expression of modernity and culture. To look forward, a forecaster must have a clear view of the past and get a grip of how styles respond to and are shaped by the spirit of the times. Intuition is necessary to determine what is important and 'cool'.[24] Where Perna is missing a theoretical framework in her book, Brannon is adding to the evolution of research in this field. Both works are important in getting to know the importance of intuition in the fashion trend forecasting industry and its relation to the scientific approach in fashion trend forecasting.

The book *Fashion Trends: Analysis and Forecasting* by Endeok Kim, Ann Marie Fiore and Hyejeong Kim published in 2013 is written for undergraduate students enrolled in fashion trend forecasting classes.[25] It provides an overview of the central concepts in fashion trend forecasting and how they are employed by various professionals in the fashion industry to improve a firm's competitiveness in the marketplace.[26] Eundeok Kim is a professor of

[20] Rita Perna, *Forecasting: A mystery or a method?* (New York: Fairchild Publications, 1987).
[21] Jerome Greenberg, "Book Review of Fashion Forecasting by Rita Perna," *International Journal of Forecasting* 5, no.1 (1989): 144-145.
[22] Evelyn L. Brannon, *Fashion Forecasting* (New York: Fairchild Publications, 2000).
[23] Brannon, *Fashion Forecasting*, 9-13.
[24] Smith, Donna R.A. "Book Review of Fashion Forecasting," review of *Fashion Forecasting*, by Evelyn L. Brannon, *Journal of Retailing and Consumer Services* 9, No.6 2002.
[25] Eundeok Kim, Ann Marie Fiore and Hyejeong Kim. *Fashion trends: analysis and forecasting* (London: Bloomsbury, 2013).
[26] Eundeok, Fiore and Kim, *Fashion trends: analysis and forecasting*, xiii.

Entrepreneurship at Florida State University. Fiore is a Director of Graduate Education in the Department of Apparel Events and Hospitality Management and Hyejeong Kim is an Associate Professor of Fashion Merchandising.[27] The book analyses the mechanisms behind fashion trends and the drivers of change in the fashion industry. Past and future trends can be explained by looking at social, cultural, economic and technological factors in society. The internet and social media have led to new ways of disseminating trends, as well as to the birth of megatrends such as sustainability and social responsibility. Forecasting is defined as a creative and analytical process in which fashion trend forecasters have to employ their intuition. This process involves the observation of change, as well as synthesizing sources that are found within and outside the fashion industry. Fashion businesses use forecasts to develop their long-term or marketing strategies, which makes fashion trend forecasters an important link from a commercial point of view.[28] The book helps get insights on the processes and methods of fashion trend forecasting, its gatekeepers and the presentation of fashion trend forecasting data in different formats. It further builds on its predecessors by connecting the importance of intuition alongside the commercial role that fashion forecasters play. Moreover, it links the importance of cultural and social changes in the fashion industry to the process of digitalization.

Design futurist Bradley Quinn published his book *Fashion Futures* in 2012.[29] He is a writer and journalist who frequently contributes to trend-forecasting guides.[30] In this book, Quinn focuses on future developments in the fashion industry, whereby technological advancements play a big role. He investigates the growing attention towards emerging trends and the role that fashion trend forecasters play in shaping the future of fashion.[31] Similar to Brannon, Quinn argues that consumers are an important link in the development of the fashion industry. Today's definition of a trend might change in the future since the fashion industry is geared to a more collaborative approach between various industry professionals and consumers. The use of new platforms to disseminate trends and products will also change how fashion trend forecasters carry out their jobs. The significance of online sources to conduct market research and provide insights into the future is stressed. What distinguishes Quinn from other practical guides is that he describes the influence of ordinary people in shaping fashion

[27] "Fashion Trends: Analysis and Forecasting," Bloomsbury Collections, accessed December 4, 2020, https://www-bloomsbury-com.eur.idm.oclc.org/uk/fashion-trends-9781847882936/
[28] Eundeok, Fiore and Kim, *Fashion trends: analysis and forecasting*, xiv.
[29] Bradley Quinn, *Fashion Futures* (London: Merrell Publishers Limited, 2012).
[30] "Fashion Futures," Merrell Publishing, accessed December 4, 2020, http://www.merrellpublishers.com/9781858945637
[31] "Next: Bikinis That Stick to Skin And Jackets With a Jolt," The Wall Street Journal, accessed December 4, 2020, https://www.wsj.com/articles/SB10001424052702303404704577307723544924612

trends, alongside industry experts. As well as *Fashion Trends: Analysis and Forecasting*, sustainability is a hot topic in discussing the future of fashion. [32] The book thus proves to be insightful when talking about the future of fashion and how it is influenced by technological and societal developments. It distinguishes itself by using a future-oriented approach while working with a lot of graphic material and incorporating the role of the consumer further.

Over the last decade, various academic studies about fashion forecasting have been published. Different authors apply a range of approaches and perspectives to the field of fashion trend forecasting. This part of the literature review focuses mainly on publications in three different areas: fashion trend forecasting itself, the digital turn in fashion trend forecasting and the increased use of AI in the field.

Ingrid Giertz-Mårtenson wrote her master thesis on trend analysis in the fashion industry in 2006.[33] She describes the ability to spot trends and combining this with intuition as an important skill for fashion trend forecasters.[34] Trendspotting, as well as trend pitching, is necessary for fashion trend forecasters to build their representative capital. Ingrid Giertz-Mårtenson is the former CEO of the Swedish Fashion Council and initiator of the Centre for Fashion Studies at Stockholm University. At present-day she is working as a Senior Advisor at the Centre for Business History in Stockholm.[35] In her MA thesis, Giertz-Mårtenson, analyses trend agencies that disseminate trend information through seminars and consultancies. Giertz-Mårtenson views developments in the fashion forecasting field as part of the post-modern world, where new players keep entering the field and thrive on the risk element in fashion. She makes a distinction between the 'traditional forecasting agency' and the online forecasting agencies such as WGSN. She also cites well-known trend forecaster Lidewij Edelkoort. According to Edelkoort, objectivity has no place in the process of fashion forecasting. The industry is dependent on the intuition, gut feeling and reputation of individual forecasters. The trend pitch includes making aesthetical judgements as well as confirming the 'rightness' of fashion in terms of timing, competitors and market considerations. Fashion trend

[32] Bradley Quinn, *Fashion Futures* (London: Merrell Publishers Limited, 2012), 200-204.
[33] I. Giertz-Mårtenson, "Looking into the Future: A Study of Trend Analysis in the Fashion Industry," (Master diss., Stockholm University, 2006).
[34] Giertz-Mårtenson, "Looking into the Future: A Study of Trend Analysis in the Fashion Industry," 5.
[35] "H&M – documenting the story of one of the world's largest fashion retailers," Taylor & Francis online, accessed November 28, 2020, https://www-tandfonline-com.eur.idm.oclc.org/doi/full/10.1080/00076791 .2011.617203?scroll=top&needAccess=true

forecasters are the ones who make 'sense' of the fast-paced ways in which the industry evolves. Giertz-Mårtenson cites Sharon Graubard, the creative director at *ESP Trendlab*, and shows how there is an infinite stream of information that needs to be turned into understandable actions.[36] Overall, this dissertation gives more insights into the creative part of fashion trend forecasting and refers to the democratization of the fashion industry. A case study with a designer shows the paradox between wanting to use one's creativity and the fear of losing sales. An important question brought forward is: is fashion trend forecasting actively shaping the fashion industry?[37] It is important to note that Giertz-Mårtenson is not explaining the importance of digitalization in fashion trend forecasting, which publications after her thesis do address. As well as the practical guides, she talks about the importance of intuition that fashion trend forecasters employ.

A more general overview of the significance of fashion trend forecasters in the global fashion industry can be found in *The trendmakers: behind the scenes of the global fashion industry* written by Jenny Lantz.[38] Lantz is a researcher at the Centre for Arts, Business and Culture and senior lecturer in Fashion Studies at Stockholm University.[39] The book is published in 2016 and shows how fashion, capitalism and culture all intersect within the global trend machine. Lantz gives some historical background but does not use archival material. The book starts with labelling trends as an organizing principle in the fashion world since it enables supply and demand to reach an equilibrium. Additionally, trends are defined as an important source of legitimacy in the fashion industry. Lantz also employs a wide geographical range from London to the BRIC countries. BRIC countries are often viewed as mere recipients of Western trends, but the changing digital environment can cause this to change. What makes this contribution so useful, is the vast amount of empirical material. Lantz interviewed 95 people that hold various positions in the global fashion industry.[40] One example is Neil Bradford, who was the CEO of leading trend agency WGSN. Bradford explains how the trend forecasting business can be viewed as an 'insurance policy' since it helps clients to avoid making mistakes by solving their problems of imperfect information. He addresses the rationalization of fashion and the rising importance of science. According to the book, it can

[36] Adegeest, "The Dynamics of Trend Forecasting," 27.
[37] Ibid, 35.
[38] Jenny Lantz, *The trendmakers: behind the scenes of the global fashion industry* (New York: Bloomsbury Academic, 2016)
[39] "Jenny Lantz," Bloomsbury Collections, accessed November 28, 2020, https://www-bloomsbury-com.eur.idm.oclc.org/author/jenny-lantz
[40] Frédéric Godart, "Reviews," review of The trendmakers: Behind the Scenes of the Global Fashion Industry, by Janny Lantz, *Contemporary Sociology* 46, no.6, 2017.

be argued that a company like WGSN is a driving force behind the creation of trends since its huge customer base is following its directions. Lantz, therefore, argues that trend forecasting can be a self-fulfilling prophecy at times.[41] The question of fashion trend forecasting being merely analytical or if it can also be used to actively shape the fashion industry remains unanswered. The book relates to other academic works mentioned that describe the role of fashion trend forecasters as active agents in the fashion industry. The historical approach makes this publication of great use. As well as Giertz-Mårtenson, Lantz touches upon the fact that big fashion trend forecasting agencies have the power to shape future trends in a certain way. However, she states that the consumer is acquiring more power in defining what the final trend will be and she pays more attention to digitalization.[42]

The book *The Fashion Forecasters: A Hidden History of Color and Trend Prediction* is edited by co-authors Regina Lee Blaszyck and Ben Wubs and published in 2018, making it one of the most recent works used throughout this thesis.[43] Similarly to Lantz's book, this work can be explored for the importance of trend forecasters in the current global fashion industry. Although both publications focus on recent developments, Blaszyck and Wubs are providing archival research which is imperative to analyse the historical development of fashion trend forecasting. Blaszczyk holds a Leadership Chair in the History of Business and Society and is Professor of Business History, Wubs is Professor of International Business History.[44] The academic background of the editors points towards the uniqueness of this publication, as it views fashion from a business history and economic perspective. It claims that forecasters are an important intermediary business in the global fashion industry. Moreover, the book is paying attention to the cultural aspects of the industry. By including a 'series of cultural biographies of influential forecasters and forecasting entities'[45], a rich oral history is collected that portrays the 'human element' in fashion trend forecasting.[46] An elaborate timeline is covered throughout the book, starting in the nineteenth century and ending in the twenty-first century. After consulting archival documents such as newspapers, magazines, forecasting reports and trade journals, the authors have identified fashion trend forecasting as a career embedded in the creative industries of the Western world. Notably, the book also provides a strong geographical

[41] Lantz, *The Trendmakers*, 154.
[42] Adegeest, "The Dynamics of Trend Forecasting," 35.
[43] Regina Lee Blaszczyk and Ben Wubs, *The Fashion Forecasters: A Hidden History of Color and Trend Prediction* (London: Bloomsbury, 2018)
[44] "The Fashion Forecasters," Bloomsbury Collections, accessed November 27, 2020, https://www-bloomsbury collections-com.eur.idm.oclc.org/book/the-fashion-forecasters-a-hidden-history-of-color-and-trend-prediction/
[45] Blaszcyck and Wubs, *The Fashion Forecasters*, 254.
[46] Ibid, 28.

overview, incorporating many different parts of the world. The book has achieved to bring in personal details from a variety of industry professionals, such as leading forecaster Nelly Rodi and head of fashion at WGSN Catriona Macnab. Lastly, the included bibliographies and indexes can be used for further research into this topic.[47]

Research on AI in fashion trend forecasting is still limited as key developments in the area of machine learning only occurred in 2016, which opened a whole new spectrum of opportunities.[48] Consequently, three journal articles are worth mentioning. The first publication to be discussed is "StreetStyle: Exploring world-wide clothing styles from millions of photos" by Kevin Matzen, Kavita Bala and Noah Snavely from Cornell University.[49] Matzen obtained his PhD in computer science from Cornell University, where he was advised by Bala and Snavely. His research focuses on building systems that analyse large amounts of pictures on the internet to comprehend trends that are difficult to recognize with the human eye.[50] The authors of the paper claim that fashion trend forecasters often use datasets that consist of fashion-conscious images, such as runway photos or leading magazine covers. Instead of focusing solely on fashion websites, they used Instagram to extrapolate pictures of streetstyle fashion. As a result, a dataset called StreetStyle-27K was developed. This dataset contains over 15 million annotated pictures. A list of several clothing attributes was created a priori, so they could be easily identifiable in the images. Machine learning techniques performed visual discovery on a large scale. To analyse the data, the paper uses Convolutional Neural Networks (CNN). CNN maps the input, the images, to produce the output, a label representing a fashion attribute. The CNN technology is firstly used in a supervised learning manner, through which the authors trained the CNN to predict fashion attributes in new images. The second step is employing an unsupervised clustering method that can automatically detect these fashion attributes in the dataset and establishes visual correlations in the form of style clusters. The outcome was a first-of-its-kind analysis of global and per-city fashion choices. The authors drew on previous academic work of analysing trends using machine learning, but these studies were not evaluated for their statistical significance.[51] The images from the dataset were combined with Google search data to give a richer sense of what was happening in the world

[47] Rebecca C. Tuite, "Book Reviews," review of *The Fashion Forecasters: A Hidden History of Color and Trend Prediction*, by Regina Lee Blaszyck and Ben Wubs, *Journal of Design History* 32, No. 3, 2019.
[48] Camilla Grindheim Larsen, "Digital turn in fashion trend forecasting: An explorative study of artificial intelligence, media platforms, and media users to understand changes in fashion trend forecasting in the digital age," (MSc diss., University of Oslo, 2020), 24.
[49] "StreetStyle: Exploring world-wide clothing styles from millions of photos," Cornell University, accessed December 22, 2020, https://arxiv.org/abs/1706.01869
[50] "My Story," Kevin Matzen, accessed May 1, 2021, http://kmatzen.com
[51] Cornell University, "StreetStyle."

and provided insights into underlying human behaviour. The authors used an anthropological point of view to display differences in garments throughout time and place while finding a way to distinguish signal from noise. Some of the findings might be too broad to create actionable insights for fashion brands. However, the ideas and methods used in the paper provide a way for brands to use data from Instagram and other social media platforms to understand what their customers are wearing in real-time.[52] A limitation of this study is that even though CNN is a very powerful approach for organizing images, there is a limited level of details in the styles that were obtained. The AI could not make a clear distinction between for example eyeglasses and sunglasses. Moreover, the upper body of the person was harder to analyse, because the computer vision technologies were not fully developed as they are at present-day. The dataset only took images from Instagram, which limits the sample and takes part of the context away. Other social media platforms can be analysed in future research, as well as finding a way to provide more background knowledge.

The second journal article to be mentioned is "Traditional vs. big-data fashion trend forecasting: an examination using WGSN and EDITED" by Mikayla Dubreuil and Sheng Lu.[53] This paper differs from Matzen, Bala and Snavely as the authors did not develop their own dataset to detect trends from social media images. Instead, they use already existing fashion trend forecasting reports. The paper seeks to find similarities and differences between the results of traditional designer-based fashion trend forecasts with trend forecasts generated by big-data tools. They did so by comparing 20 WGSN traditional fashion trend forecasts to 20 trend forecasts developed by EDITED. EDITED is a data analytics company that specialises in fashion, their software is trained to recognise apparel products. Their database consists of inventory and assortment information of over 30 million apparel products sold by more than 90.000 retailers in the U.S. The findings showed that EDITED could easily monitor the popularity of colours and patterns, but some of the design details were hard to quantify. After running all the results on their statistical significance, the authors state that big data can be used as a creative tool for the fashion trend forecasting industry. Moreover, they link their findings to fashion theories that are discussed in the academic literature. These fashion theories focus on the importance of colour, pattern and design details when it comes to the production and consumption of fashion. The authors state that big data makes it easier to understand long-term

[52] Luce, *Artificial Intelligence for Fashion*, 141.
[53] Mikayla DuBreuil & Sheng Lu, "Traditional vs. big-data fashion trend forecasting: an examination using WGSN and EDITED," *International Journal of Fashion Design, Technology and Education* 13, No. 1 (2020): 1-10.

market dynamics and changing customer needs and tastes as it uses extensive historical records. However, big data does find it difficult to understand and process important cultural factors that influence fashion trends. Moreover, it does not possess the skills to perform creative thinking processes or an aesthetic perspective to leverage out-of-the-box ideas. The authors conclude by stating that big data can never fully replace trend forecasters and designers. The article challenges the assumption that there is no place for objectivity in fashion trend forecasting. Quinn touches upon the use of technological advancements in fashion trend forecasting, but his practical guide is missing the scientific perspective that Dubreuil and Lu are using.[54] Their view does not differ from Blaszcyzyk and Wubs who suggest that the human eye and human mind are among the best technologies of fashion trend forecasting.[55] Concerns about AI not being able to capture the creative core of fashion trend forecasting will be featured prominently throughout this thesis.

The most recent publication on the use of AI in fashion trend forecasting is titled "The exploration of artificial intelligence application in fashion trend forecasting" by Mengyun Shi et al.[56] The authors pose that traditional fashion trend forecasting is time-consuming and labour intensive. Moreover, there is a substantial financial cost attached to manual labelling, as well as a risk for fashion retailers that comes with classification based on human subjective judgement. Consequently, this paper trained an AI model to be familiar with fashion images from a large-scale dataset from different scenarios such as online stores, street snapshots, runway photos and videos. These images are merged in the DeepFashion dataset, which contains over 800.000 images. The method proposed is based on an augmented version of the algorithm used by Matzen et al, called "Faster R-CNN". This model proves to be even more accurate in visual discovery. The authors pose there are two main differences between their approach and earlier research. Firstly, the developed AI model could quantify attributes of fashion images in five categories such as shape, style and fabric. Second, most of the research has been done by computer scientists, not by professionals in the fashion industry. These professionals know how to identify specific attributes and speak the language that needs to be communicated to fashion insiders. To enhance the trustworthiness of their study, the researchers compared the fashion trends detected by the AI algorithm with predictions from the world's leading fashion magazines such as *Harper's Bazaar* and *Vogue*. The AI model

[54] Sébastien Thomassey and Xianyi Zeng, *Artificial Intelligence for Fashion Industry* (Singapore: Springer Nature Pte Ltd, 2018), 198.
[55] Blaszcyck and Wubs, *The Fashion Forecasters*, 28.
[56] Mengyun Shi et al., "The exploration of artificial intelligence application in fashion trend forecasting," *Textile Research Journal* (2021): 1-30.

generated accurate trend forecasts, but the training of the dataset could be improved. As the computer science community evolves every day, it becomes easier to achieve good results with large unlabelled datasets. These results can be finetuned later on by smaller human-annotated datasets, while significantly reducing expenses and time. The authors also recommend AI models in a production-level server, like AWS by Amazon, as it is a relatively cheap way of incorporating basic infrastructures that can run 24/7. The authors view the AI model's trend analysis as a second pair of eyes for fashion trend forecasters. This set of eyes has a more comprehensive view of trends that travel across various societies and industries. Furthermore, it allows designers to better understand and create products that appeal to consumers and generate more profits with less overstock. A limitation of the study, as pointed out by the authors, is that trend forecasters might not be willing to adopt these new technologies. The general energy of the industry is that technology kills creativity. It also requires time to learn these new methodologies and financial investments. This research is comparable to Matzen et al. The DeepFashion dataset has metadata that is labelled by fashion professionals and consists of multiple tasks, something that Matzen et al. strived for, but AI technologies were not as developed yet. The diversity in image types and annotations enables the AI model to learn fashion attributes from multiple perspectives, making it more objective and less biased. The authors view trend reports by regular fashion trend forecasters as a reflection of only a small part of society, as they aim for incorporating trends that speak for a wider population segment.

Methodological framework

Research design and sampling strategy

The constructivist research paradigm has guided the choices of methods applied in this thesis. This means that knowledge is a social construction, which is believed to be created in interaction between the researcher and its participants. This research aims to understand and reconstruct the opinions and meanings that the participants initially hold. It needs to be considered that multiple strands of knowledge can co-exist as they are determined by the cultural, gender, economic, ethnic and social backgrounds of the participants.[57] The main research question this thesis focuses on sets the ground for the qualitative research approach. Conducting semi-structured interviews is determined the most appropriate approach for

[57] E.G. Guba and Y.S. Lincoln, "Competing paradigms in qualitative research," in *Handbook of Qualitative research*, ed N.K Denzin and Y.S. Lincoln (Thousand Oaks: Sage Publications, 1994), 110.

researching the gender balance in the fashion trend forecasting industry. Uncovering underlying motivations, thoughts and ideas of fashion trend forecasters on how their industry and the people working in it have changed over the years is key. Gathering data consisted of undertaking 13 semi-structured qualitative interviews with fashion trend forecasters who differed in gender, age and type of fashion trend forecasting. The use of non-probability sampling resulted in a selection of interviewees that have sufficient experience in the industry while meeting the pre-established criteria related to the objectives of the study. The first step in finding participants consisted of contacting the founder of Studio Vegter. With more than 10 years of experience, Susanne Vegter serves as an important intermediary in the fashion industry. She is known for matching the right fashion professionals with the right companies. After obtaining the first round of participants, the snowballing method was applied to seek out other participants.

Conducting semi-structured interviews is based on creating an interview guide. The interview guide consists of primary questions that the researcher wants to address in the interview while guaranteeing the research question is sufficiently answered. The interview guides differed to some extent between the participants that were part of traditional forecasting agencies and data-led forecasting agencies. The formulated questions are broad and open-ended, to ensure the interviewee has plenty of room to construct an answer. Probing questions were more directive and used to dig deeper into interesting or confusing topics. The researcher must understand the participants' language and how they make sense out of the social world around them. Semi-structured interviews are valuable when there is little information about a topic, but also have a higher chance of introducing investigator bias into the study.[58] The acquired knowledge through the interviews is subjective by nature as it is contingent on the respondents' personal experiences. In line with the constructivist point of view, the interviewer and its participants are engaged in constructing meaning. During the interview process, reflecting on the previous interviews proved to be very helpful. It provided a way of making sure that all the issues were sufficiently explained, as well as working towards an effective method of retrieving emotional or sensitive information. While conducting the interviews, the researcher applied the notion of the 'active interview', developed by Holstein and Gubrium. Within the active interview, the participant is a repository of knowledge that needs to be activated. Responses to questions are triggered by suggesting certain narrative positions or

[58] Sofia Dahlström, "Colour Forecasting and its managerial implications," (MSc diss., The Swedish School of Textiles, 2021), 17-18.

examples.[59] A natural conversation within a relaxed atmosphere was encouraged, where participants were able to speak freely.

Data collection and analysis

The interviews functioned as a starting point to develop further knowledge. For this study, 13 people were interviewed in total. The average length of the interviews was 45 minutes. Due to the COVID-19 pandemic, the interviews took place on ZOOM. Afterwards, the interviews were transcribed, and 4 out of 12 interviews were translated from Dutch to English. For transcribing the researcher used Descript, which is a transcription service to speed up the process. After the transcriptions were formulated by the program, the researcher went over and checked every transcription by listening to the recordings. This was done to correct mistakes like typographical errors or misheard words. After the transcribing process the grounded theory approach, developed by sociologists Glaser and Strauss in the 1960s, was used to systematically analyse the data at hand. This approach is valuable when there is little prior knowledge about a topic since it does not start with a rigid theory that needs to be approved or challenged. The analysis of the data consists of systematically coding, grouping and summarizing the descriptions. By organizing the information into a coherent framework, various aspects of the social world described by the participants could be related to the research objectives.[60] The grounded theory approach uses three stages when it comes to processing the collected data. The first stage is open coding, which is used to 'break open' the data. The transcripts of the interviews were analysed sentence-by-sentence to get familiarized with the data. Subsequently, codes were attached to it.[61] The second stage, called axial coding, consists of describing relevant categories. Different fragments that have been assigned a certain code are compared to each other, to formulate main- and subcategories. It is hereby important to identify common patterns.[62] The third stage, selective coding, encompasses reassembling the data to answer the research questions. This is achieved through determining the core concepts or categories while interpreting the findings within the scope of the existing literature. This

[59] James A. Holstein and Jaber F. Gubrium. "Active Interviewing," in *Qualitative Research Theory, Method and Practice*, ed. D. Silvermann (London: Sage Publications, 1997). 113-115.
[60] Julie King, "Colour Forecasting: An Investigation into how its development and use impacts on accuracy," PhD Diss., (London College of Fashion, 2011): 22.
[61] Hennie R. Boeije, Analysis in Qualitative Research (Thousand Oaks: Sage Publications, 2011), 107.
[62] Johnny Saldaña, The Coding Manual for Qualitative Researchers (Thousand Oaks: Sage Publications, 2009), 11.

allows for making conclusions and developing a theoretical framework. The core concepts are a construction of the researcher.[63]

The operationalization of the semi-structured interview guide can be found in Appendix I. A table with all the information on the conducted interviews can be found in Appendix II.

Validity and reliability

Producing reliable and valid information is key when conducting academic research, as they determine the credibility and objectivity of the study. When carrying out this research four measurements were taken into account, namely credibility, confirmability, dependability and transferability. To ensure the research is credible, it needs to demonstrate that the study was conducted based on an accurate description of the subject matter. Moreover, according to Babbie and Mouton, objectivity is reflected in the degree to which findings can be considered the product of the study, as opposed to the biases of the researcher. This is achieved through constructing an interview guide and making sure every participant answered the same set of questions, while systematically analysing it through the grounded theory approach. The degree of dependability sets out to measure to what extent the questions posed in the research would get the same answers. This is a limitation of the study. Semi-structured interviews often account for a lower validity than structured interviews since interviewer flexibility in wording questions can lead to substantially different responses. However, attempts are made by establishing clear theoretical concepts, drafting a coding scheme and opting for a heterogenous interview sample. Lastly, the transferability of this study is related to what extent the findings can be applied to other situations. The study aimed to present the perspectives of the participants involved on the gender balance in fashion trend forecasting. The input of the participants is used by the researcher to define guidelines for the future of fashion trend forecasting. The reader can determine if the described practices and recommendations can be transferred to other settings.[64]

[63] Judith E. Liskin-Gasparro, "MLJ Reviews," review of *Introduction to Research Methods in Education* by Keith F. Punch, *The Modern Language Journal* 95, 2011.
[64] Holstein and Gubrium, "Active Interviewing," 109.

Chapter 2: Fashion trend forecasting

Introduction

The question "what is fashion?" proves to be a difficult one to answer. Marketing consultant Estelle Ellis provided a rich description in November 1993 during a speech at the Fashion Institute of Technology (FIT) in New York. Ellis defined fashion based on the four M's: mode, manners, mores and markets. These key terms respectively refer to the way we dress, the way we express ourselves, the way we live and the way we are. Fashion, according to Ellis, should be seen as an agent that actively shapes all material things. Moreover, it is dependent on creativity and innovation. To understand fashion, one must not lose sight of the big picture. The fashion industry consists of a large network of business professionals that merge creativity and innovation to cater to consumers' needs. One of the important, but often overlooked, actors inside this web are the fashion trend forecasters. Their job consists of continuously observing the world around them, to determine the likely direction of fashion change.[65] Fashion changes under the influence of world events, subcultural influences, social changes, technological innovations, world events, the entertainment sector and fashion leaders.[66] Fashion trend forecasting is a highly creative process that influences important decisions made by fashion retailers and designers at the beginning of producing a collection. Furthermore, it affects decisions regarding promotional campaigns and minimizing stock-out.[67] It is a multi-faceted process that includes (1) recognizing emerging trends in society; (2) anticipating the pace of change; (3) determining the direction of this change and (4) understanding consumer preferences. It is therefore characterised as having both scientific and intuitive elements.[68] The fashion industry is part of the creative industries, resulting in the fact that its goods and services often carry greater symbolic than material worth. Consumers base their consumption behaviour on their aesthetic taste and temporal feelings, which makes the introduction of a garment on the market at the right time essential.[69] Producing a garment is a very expensive endeavour and a lot of effort goes into getting it right. Creating an unwanted design or understanding the

[65] Regina Lee Blaszczyk, *Producing Fashion: Commerce, Culture and Consumers* (Philadelphia: University of Pennsylvania Press, 2008), 1-2.
[66] Eundeok, Fiore and Kim, *Fashion trends*, 20.
[67] Ibid, 156.
[68] De Wet, "Investigating Fashion Forecasting Approaches in South Africa," 13.
[69] Walter A. Friedman and Geoffrey Jones, "Creative Industries in History," *The Business History Review* 85, No. 2 (2011): 238-239.

trends wrong, makes a huge difference in the return of investment (ROI).[70] Fashion retailers are willing to pay a high price to reduce uncertainty in a competitive business environment.[71] Consequently, this chapter aims to answer the following question: what is fashion trend forecasting? It does so by outlining the historical trajectory of the fashion trend forecasting industry, providing an overview of the fashion field and setting out what it means to be a fashion trend forecaster.

The historical path of fashion trend forecasting

Fashion trend forecasting started as a decentralized business, where design ideas and techniques were transferred from cities with significant cultural power into the global marketplace.[72] Paris has played a dominant role in the dissemination of fashion trends starting from the court of Louis XIV. In the 1860s, the rise of haute couture led to the institutionalization of trend patterns and the introduction of seasonal collections. Some of these formats continue until the present day but in a different manner. In France, the *Chambre Syndicale de la Haute Couture* set the standards to limit competition from foreign department stores that used couture designs to mass-produce garments. As a reaction, young sketch artists made copies of the designs made by Parisian fashion designers during influential couture shows in the early 1900s. They are seen as the forerunners of traditional fashion trend forecasting companies as they sold their sketches to American fashion brands that were unable to attend the couture shows. Even though these practices were illegal, several copy houses established themselves in Paris and remained concealed from the French law enforcement. American manufacturers could subscribe to a few professional sketching services. The costs of these services were high, but not as expensive as sending a team to Paris every season. It was a fast and efficient way to gain knowledge of the latest designs, as the media would communicate trends much slower.[73] During the 1920s, fashion production cycles were mainly based in Paris and department stores were flourishing. This led to the professionalization of trend reporting services with the emergence of so-called *stylistes*. Being a styliste meant that foreign

[70] "Fashion from Seoul and Tokyo would permeate across the world: Dan Cotton," The Economic Times India, accessed February 23, 2021, https://economictimes.indiatimes.com/opinion/interviews/fashion-from-seoul-and-tokyo-would-permeate-across-the-world-dan-cotton/articleshow/41599597.cms?from=mdr

[71] Luce, *Artificial Intelligence for Fashion*, 141-142.

[72] Amy Ballmer and Jennifer Tobias, "Trend forecasting / collecting the history of the future," ALJ 42, No.1 (2017): 19. (19-25)

[73] Sara Idacavage, "Copying French Couture for American Consumers," In *Berg Encyclopedia of World Dress and Fashion: The United States and Canada*, ed. Phyllis G. Tortora. Oxford: Bloomsbury Academic, 2010. DOI: 10.2752/BEWDF/EDch031420

department store buyers were stationed in Paris to identify trends for their store. This developed into in-house consulting departments that were known as *Bureaux du Style.* It is important to note that these in-house services mainly employed women. The first fashion trend consultancy company, Tobe Associates, was founded in 1927 in the United States by Miss Tobé. She started her career in Paris as a trend-watcher for the department store Franklin Simon but later on became famous for issuing regular fashion trend reports in New York called the Tobé Report.[74]

However, after World War II the dominance of Paris and the dynamics of trends became contested by the mass production of garments in standard sizes. Consequently, European agencies were increasingly seen as noteworthy *stylistes* and they founded independent bureaux.[75] The 1950s and 1960s witnessed social and political changes reflected in the so-called youth culture. New trends bubbled up from subcultures and the streets of new fashion cities. Mary Quant, a British designer, became the face of British prêt-à-porter. This type of industrialized clothing, also known as ready-to-wear, signified the importance of customers being the accelerators of trends. These changes in the world of fashion made it even more important for retailers and designers to get assistance in determining what is on-trend.[76] The 1970s and 1980s are described as the dream decades for fashion trend forecasters. These are also the years that well-known international fashion trend forecasting agencies such as Nelly Rodi and Trend Union by Lidewij Edelkoort were born. A big part of the textile and clothing production moved offshore to the Global South. This process started in the late 1970s and continued to the early 1990s, which resulted in budget cuts for fashion trend forecasting agencies worldwide. Heightened consumer expectations and competition became more intense due to the introduction of fast fashion. Fast fashion is based on product innovation that made it possible to produce inexpensive, on-trend styles that are available for approximately four weeks.[77] Fashion trend forecasting has always been labour-intensive as it entailed finding a way through large streams of information and creating elaborate colour cards and trend books. New technologies starting in the early 2000s such as the Internet, fashion blogs and social media have all contributed to the increasing pace of fashion information communication. Traditional fashion trend forecasters needed to solve the problems of imperfect information even quicker in times of mass consumption.[78]

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[74] A Ballmer and Tobias, "Trend forecasting: collecting the history of the future," 20.
[75] Maria Mackinney-Valentin, "Trends," in *Berg Encyclopedia of World Dress and Fashion: Global Perspectives*, ed. Joanne B. Eicher and Phyllis G. Tortora (Oxford: Berg, 2010), 175-176.
[76] Mackinney-Valentin, "Trends," 176-177.
[77] Eundeok, Fiore and Kim, *Fashion trends: analysis and forecasting*, 49.
[78] Blaszcyck and Wubs, *The Fashion Forecasters*, 28

The trend mechanism

The bestseller book *Sapiens* by Yuval Noah Harrari describes trends as a reflection of our human need to create myths to keep our societies cohesive.[79] Trends reflect changes in collective aesthetic, political, cultural, social and economic preferences at a particular time.[80] Fashion history shows that trends have an organizing function as they are at the intersection of production and consumption. Trends thus make it possible for various players in the fashion industry such as designers and buyers to agree on an approximate direction of fashion. The lifecycle of garments depends on how fashionable they are. Consumers feel pressured into buying new clothes once there is a new product on the market that is considered more on-trend. The fashion industry, to a certain degree, can determine the appeal of a garment. This process is called planned obsolescence and is a fundamental part of the fashion trend forecasting system.[81] Even though the garments are still functional, their symbolic worth has come to an end. Fashion trend forecasters play on the change of values and tastes that are envisioned in the consumers' minds. They make sure trends are dynamic and appealing, to create 'follow-on' sales.[82]

When talking about trends, it is important to be aware of the distinction between fads, micro trends and macro trends. Fads reflect what a few consumers will be doing for a short amount of time. Consumers often do not know why they are adopting this trend, hence why they do not lead to significant behavioural changes. Fads often resemble something unexpected in fashion and once the initial uniqueness has gone, they tend to disappear. Macro trends are the most powerful trends and are derived from changing consumer behaviour. These trends are expected to influence a large number of consumers for a long time. The trends can also cross over to other industries. Microtrends, in turn, are seen on a small group of consumers over a small amount of time. They do have more power than fads.[83]

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[79] "Why trends are your friend," Medium, accessed May 2, 2021, https://medium.com/fashion-act-now/why-trends-are-your-friend-781b718c2715

[80] Gozde Goncu-Berk, "Fashion Trends," in *Bibliographical Guides* (London: Bloomsbury Academic, 2015) DOI: 10.5040/9781474280655-BIBART12001-ED [Online]

[81] Tracy Diane Cassidy, "Consumer Colour and Style Preferences: a new approach to tackling the waste conundrum," in *Eco-Friendly and Fair: Fast Fashion and Consumer Behaviour*, ed. Mark Heuer and Carolin Becker-Leifhold (Oxon: Routledge, 2018), 84-85.

[82] Tracy Diane Cassidy, "Sustainable Colour Forecasting: The benefits of creating a better colour trend forecasting system for consumers, the fashion industry and the environment," in *Sustainability in Fashion and Textiles: Values, Design, Production and Consumption*, ed. Miguel Angel Gardetti and Ana Laura Torres (London: Greenleaf Publishing, 2013), 112.

[83] Maria Vieria Lopes, "The discourse of fashion change: Trend forecasting in the fashion industry," *Fashion, Style & Popular Culture* 6, No.3 (2019): 335-336.

A lot of research has been done in the field of trend theory, as it is an interdisciplinary field ranging from sociology to cultural history and anthropology.[84] Three trend theories characterize the world of fashion in particular. They can exist simultaneously or become interconnected. Thorstein Veblen, economist and author of *The Theory of the Leisure Class*, talks about a society in which leisure and consumption reflect an individual's position within a social class. His work revolves around the notion of imitation, as fashion is often imitated by lower classes who are responsible for spreading fashion throughout society. Furthermore, German philosopher and sociologist Georg Simmel published his seminal article "Fashion" in 1904. This essay marks the introduction of the trickle-down theory in which social distinction and integration are key terms. According to Simmel, the process of fashion change is hierarchical. As elite groups are imitated by lower classes, they continuously find ways to create new fashions to separate themselves from the rest of society. Consequently, there is a paradox between the wish for distinction and identification.[85] Many researchers argue that the trickle-down theory has become less relevant in the twenty-first century due to the fragmentation of society and the introduction of mass production and communication. Youth culture and the rise of ready-to-wear challenge the hierarchical structures of trends. Instead, they use of the trickle-across and bubble-up theories became more frequent. In the trickle-across theory, new trends diffuse themselves in society through processes of collective selection by similar social groups. In the bubble-up theory, new trends emerge in subcultural groups which influence the mainstream and higher segments of consumers. As the fashion industry continues to evolve, consumers are becoming more fashion-savvy and demanding. Popular culture has become more accessible, which makes paying attention to socio-cultural factors even more important. Moreover, the faster pace of living influences the shaping of trends. This also has consequences for how fashion trend forecasters do their work since they have to incorporate styles that are seen on the streets or social media.[86]

The characteristics of a fashion trend forecaster

Trends are linear in the present time and cyclic in the past and future.[87] Sociologist Herbert Blumer and psychologist John Flügel pose that fashion trends are strongly correlated to the 'spirit of the times', also called the *Zeitgeist*. Understanding the Zeitgeist is vital in the work of

[84] Mackinney-Valentin, "Trends," 176-177.
[85] Goncu-Berk, "Fashion Trends," DOI: 10.5040/9781474280655-BIBART12001-ED [Online]
[86] Maria Mackinney-Valentin, "Trends," 175-176.
[87] Cassidy, "Sustainable Colour forecasting," 111.

fashion trend forecasters as they try to pin down the mentalities accompanying the general political, cultural or social climate. A lot of time is spent on absorbing the 'atmosphere' or 'mood' in various places around the world.[88] Fashion trend forecasters use their experience in the fashion field, as well as their aesthetic sensibilities and intuition to collect the required data. Trends are produced inside the framework of the fashion field. Jenny Lantz defines the fashion field as influential individuals in the fashion industry such as celebrities, stylists, consumers, fashion trend forecasters, editors and buyers. Likewise, organisations, events and institutions such as fashion magazines, trade fairs and fashion schools play a huge role. Being a part of the fashion field means sticking to the rules of the game.[89] The fashion system is responsible for setting the symbolic boundaries that determine what can be regarded as fashion.[90] Fashion trend forecasters can be viewed as the gatekeepers of fashion that stir the legitimation process of which garments will end up on the market. As gatekeepers, they try to redefine existing cultural meanings or identify trendsetters who are an essential part of this process.[91]

Joanne Entwistle positions fashion in the context of aesthetic economies. Fashion is perceived as being less 'stable' than other sectors, as its nature is more subjective and subjective does not always rely on rational decisions. Aesthetic values are generated from being inside the fashion system.[92] Fashion trend forecasters are legitimizing themselves based on their tacit aesthetic knowledge. This form of knowledge is often displayed in metaphors like 'gut instinct' or 'having an eye'. The connection with the bodily senses shows how this knowledge is difficult to define properly.[93] Fashion trend forecasters are often ambiguous when it comes to describing their qualities. Gathering information is realized through visiting trade fairs, cultural events, travelling around the world, following artists and checking social media channels.[94] However, gathering information is not enough. The fashion trend forecaster has to make sense of the information at hand. Sensemaking is a process that happens in the past, present and future. Meaningful explanations can be derived from placing the information in context. Aaltonen and Barth introduce three key terms related to sensemaking. First, foresight is the ability of the fashion trend forecaster to imagine possible futures. Second, hindsight is about

[88] Dahlström, "Colour forecasting and managerial implications," 22.
[89] Lantz, *The trendmakers*, 38.
[90] Cassidy, "Sustainable colour forecasting," 111.
[91] Yuniya Kawamura, *Fashion-ology: An Introduction to Fashion Studies* (Oxford: Berg Publishers, 2004), 79-82.
[92] Joanne Entwistle, "The Aesthetic Economy: The production of value in the field of fashion modelling," *Journal of Consumer Culture* 2, No.3 (2002): 321-322.
[93] Joanne Entwistle, *The Aesthetic Economy of Fashion: Markets and Value in Clothing and Modelling* (Oxford: Berg, 2009): 131.
[94] Goncu-Berk, "Fashion Trends," DOI: 10.5040/9781474280655-BIBART12001-ED [Online]

understanding the 'why' and 'how', for example by identifying certain patterns throughout history. Third, insight is achieved through combining foresight and hindsight in present decision-making procedures.[95] Pierre Bourdieu uses the term habitus to describe how social entities perceive the world around them and react to it. The habitus is formed out of being immersed in the fashion flow, through which a 'feel for the game' is developed. Fashion weeks and trade shows like Premier Vision accelerate the social reproduction of the fashion field, as they provide its actors with a way to legitimize themselves.[96] Another essential characteristic of a fashion trend forecaster is intuition. Gallate and Keen argue that intuition is formed under implicit learning processes, as it thrives on the sub-conscious storage of knowledge. Consequently, intuition advances with experience and age. Using intuition is considered as being highly creative and original since it produces outcomes that are not already 'known' and often triggered by hunches. It allows for the synthesis of large streams of information inside the fashion trend forecasters' brain.[97]

Having access to networks is the last feature that applies to being a fashion trend forecaster. Fashion trend forecasters form a 'community of practice' in which they share the same ideas, language and sources. They become linked through visiting the same events that expose them to similar experiences and tastes. Moreover, having a network that contains various actors in the fashion field strengthens the fashion trend forecasters' reputation in the eyes of the client. The rise of subscription-based online fashion trend forecasting agencies has sparked new ways of displaying one's network, or habitus, as it is easy to make profiles on employees accessible. This shows a level of global connectivity that is key to how fashion trend forecasters connect with fashion.[98] There is no hierarchy when it comes to the abovementioned characteristics, but the fashion trend forecaster must build up these skills throughout his or her career to be successful.

A fashion trend forecasting methodology

Fashion trend forecasting is often viewed as a matter of 'crystal ball gazing'.[99] This stems from the fact that the methodology behind it is not formalised. There are, however, certain strategies

[95] Mika Aaltonen and Theodor Barth, "How Do We Make Sense of the Future? An Analysis of Futures Research Methodology – V2.0," *Journal of Futures Studies* 9, No.4 (2005): 45-46.
[96] Entwistle, *The Aesthetic Economy of Fashion*, 135-137.
[97] J. Gallate and S. Keen, "Intuition," In *Encyclopedia of Creativity*, eds Mark A. Runco and Steven R. Pritzker (Amsterdam: Elsevier, 2011): 685-686.
[98] Entwistle, *The Aesthetic Economy of Fashion*, 143-144.
[99] De Wet, "Investigating Fashion Forecasting Approaches in South Africa," 109.

that many fashion trend forecasters use. Future Studies is the umbrella term for research concerned with the future. Sam Cole identifies three broad categories that are attached to the study of the future. The first one is forecasting, which is classified as a mathematical extrapolation-based model. Second, polling is concerned with what businesses and consumers are expected to need and want in the future. Third, envisioning compromises the storytelling and intuitive part of visualizing the future. Fashion trend forecasting combines all three methods but mainly focuses on continuously 'scanning' what is happening in the world. CEO of BrainReserve, Faith Popcorn, popularized the term cultural brailing which refers to the importance of reading culture on a broad level. Identifying new trends in the early stages should be based on understanding the evolution of current trends. Thus, trend spotting must be carried out continuously and systematically to be effective. Considering consumer values and feelings is vital. Additionally, a distinction needs to be made between short-term and long-term forecasts. Long-term forecasts provide businesses with strategic plans in a competitive market. It requires awareness of cultural trends and understanding where changes in society come from. Changes can be caused by many factors like shifts in demographics, changing consumer sentiments, breakthroughs in technology and fluctuations in trade agreements between countries. Long-term forecasts can also be of assistance when it comes to extending product lines, reviving brand images and initiating new business ventures. Long-term forecasts are influenced by megatrends. The term megatrend is created by John Naisbitt in 1982 and refers to major shifts in society that impact people's lifestyles. Short-term forecasts, on the other hand, are produced two years in advance. The focus hereby lies on product development and the forecasts incorporate the evolution of colours, textiles and styles. The current online subscription era is changing the level playing field, as some fashion trend forecasting agencies are issuing forecasts weekly. Scanning remains important as it entails making judgements on the relevance, timing and rightness of fashion trends.[100]

Scholars Eundeok Kim, Ann Marie Fiore and Kim Hyejeong have developed a handbook in which they set out their view on the fashion trend forecasting process. It consists of three aspects: environment, product and market. The environment means scanning for changes in demographics, culture, economics, politics and culture. Products are researched based on their materials, silhouette and colour. Market research is built on analysing sales records and consumer behaviour. All three aspects feature observation, data gathering, analysis,

[100] Goncu-Berk, "Fashion Trends," DOI: 10.5040/9781474280655-BIBART12001-ED

interpretation and synthesis.[101] The output of fashion trend forecasters is defined as formal trend sources. The different formats of formal trend sources are trend and colour books, trend presentations, webinars, consultancies and online reports. Clients use these trend sources to inform their businesses and get inspired. Fashion trend forecasters need to ensure that the images and stories developed in the formal trend sources are stimulating. The sources need to 'sell' the trend research, hence why the importance of language cannot be disregarded. The language is designed to touch upon cognitive and emotional levels. It is imperative to layout the information in an easily understandable manner for both creative and business teams.[102] It is often argued that fashion trend forecasting can be a self-fulfilling prophecy, as the more charismatic and authoritative the messengers, the more probable the predictions come true.[103]

The lack of consensus about fashion trend forecasting methodologies, definitions and concepts result in the ambiguous nature of the vocabulary used in formal trend sources.[104] Fashion trend forecasters carry out multidisciplinary research, based on a collaborative approach with expert scholars in related areas such as sociologists, scientists, economists, and marketers.[105] Moreover, they borrow established stories and concepts surrounding styles, fabrics and colours from the fashion field. An example is the wide use of Pantone colour swatches in presenting trends, as designers use these to create their garments.[106] In recent years, there has been a growing need of supporting the gathered data with graphs and statistics. It is important to present proof points or tangible validation as fashion trend forecasters are continuously 'framing' trends as developments of the previous seasons. The storytelling aspect remains an important source of inspiration for designers and fashion retailers. Using visually compelling evidence to translate the big picture into a few key trends is an important point of direction. It tends to display the forecasters' view on the interpretation of the data. The reputation of the forecaster functions as part of the proof.[107] There is a certain political and discursive power embedded in formal trend resources.[108] Fashion trend forecasters view their position as an opportunity to act as generators of change.

[101] Eundeok, Fiore and Kim, *Fashion trends: analysis and forecasting*, 56.
[102] Mathilda Tham, "Lucky people forecast: a systemic futures perspective on fashion and sustainability," (PhD diss., University of London, 2008), 107-108.
[103] Tham, "Lucky people forecast," 186.
[104] Maria Vieria Lopes, "The discourse of fashion change, 334.
[105] Eundeok, Fiore and Kim, *Fashion trends: analysis and forecasting*, 71.
[106] Ibid, 347.
[107] Lantz, *The trendmakers*, 31.
[108] Tham, "Lucky people forecast," 142.

Fashion trend forecasting can thus be viewed as both a science and a form of art. The science part rests on the use of analytical concepts and mathematical models that facilitate the prediction of trends in an organized way. The art part lies in using intuition and storytelling in creative ways. As the fashion industry continues to evolve and the rate of fashion change accelerates, forecasters must continue to soak up every aspect of the social context. As the risks for retailers and designers in the fast-paced global economy keep on growing, forecasting has a great influence on several important business decisions, including what product lines to create, how to advertise products, minimizing stock-out and how to penetrate new markets. The role of the forecaster is making sense of the information at hand and presenting it in a way that is inspiring, familiar, accessible and relevant. With the proliferation of trends from nearly everywhere, new technologies can increase the quantity and quality of data and its synthesis. This will be addressed in the following chapter.

Chapter 3: Technological advancements

Introduction

The emergence of fashion trend forecasting in the modern era highlights its overall ties to scientific management and rationality. O'Sullivan et al. state that developments in international markets, the structure of production and consumption worldwide and systems of communication and media technologies have led to the establishment of a 'global culture'. [109] Present-day consumer behaviour is influenced by the large streams of fashion communication that is increasingly becoming accessible to the public. This has intensified talk of the 'information society' and its capacity to 'democratize' fashion.[110] Data has become the oil of the information economy and fashion companies are eager to collect and access relevant data. Social media is reshaping the world of fashion. The current number of active users on Instagram lies around one billion, whereby the fourth most used hashtag on the app is #fashion. Moreover, around 80% of the consumers decide whether to buy a fashion related product on Instagram as they are subjected to 5 billion related fashion posts per day.[111] Within the fashion trend forecasting field, one can see a clear distinction between traditional trend forecasting agencies and data-led forecasting agencies. Traditional trend forecasting encompasses the use of visionary-based forecasting and qualitative market research. The data-led forecasting agencies, on the other hand, are turning to the world of big data to predict the future of fashion.[112] The traditional trend forecasting agencies use their historical legacies, extensive fashion capital that is acquired in the fashion field and the anthropological frameworks they use to understand the long-term trend developments. They claim that their online competitors are not engaging in fashion trend forecasting, but rather conduct 'trend watching' or 'reporting' as they inform retailers based on historical data.[113] Nevertheless, the current pace of the global economy has accelerated the level of unpredictability in fashion as trends can pop up from nearly everywhere. Predicting change and reducing risk has never been more important than in today's competitive fashion landscape. 'Getting it right' means finding an efficient way through all the 'noise' that is being produced. One way to achieve this is through constantly monitoring large streams of data and a variety of developments in society. This has led to the gradual adaptation

[109] Lopes, "The discourse of fashion change," 339.
[110] Lantz, *The Trendmakers*, 15.
[111] "See What's Next," T-Fashion, accessed February 17, 2021, https://tfashion.ai/
[112] Adegeest, "The Dynamics of Fashion Trend Forecasting," 6.
[113] Lantz, *The Trendmakers*, 22.

of Artificial Intelligence (AI) in the fashion trend forecasting industry. AI is said to have the potential to reduce forecasting errors by 25% based on mining historical data. When combining AI with human expertise, the errors can be reduced up to 50%.[114] Stand-alone trends have no worth, interpreting them based on knowledge acquired in the fashion field and extracting meaning from shifting consumer mentalities make them valuable for fashion retailers.[115] Consequently, this chapter answers the question: what is the role of technological advancements in the development of the fashion trend forecasting industry? Furthermore, it will investigate the use of AI as a creative tool and the impact on the role of the trend forecaster.

The digital transformation of fashion

The Fourth Industrial Revolution has allowed the fashion industry to use large streams of data that were not financially or technically feasible before. Generating digital data concerning fashion products is called the datafication of fashion. This process makes it easier to monitor and analyse consumer behaviour. Digital technologies significantly alter the way fashion moves throughout society as anyone is in the position to comment or disseminate fashion information. Labelling or adding a hashtag to trends makes them easily searchable and transmittable.[116] The hunt for the 'new' becomes more important every day and significant investments are made to stay ahead. After all, fashion remains commercial, as designers want to sell their creations. The aestheticization of the consumer society points towards fashion is increasingly valued for its online appearance.[117] Agnès Rocamora is widely known for her work on mediatization in the field of fashion. The concept of mediatization claims that media has infiltrated all aspects of daily life, ranging from the way people behave to the mechanics behind societal institutions. Media thus holds a significant amount of transformative power.[118] A large part of today's society has grown accustomed to the use of media. Technological advancements such as personal recommendations based on algorithms in popular apps such as Spotify and Netflix have become the norm for digital natives. In the field of fashion, E-commerce has changed how people interact with fashion, as they are used to the ability to

[114] "The rise of the AI-powered company in the postcrisis world," Boston Consulting Group, accessed May 2, 2021, https://www.bcg.com/publications/2020/business-applications-artificial-intelligence-post-covid
[115] Tim Jackson and David Shaw, *The Fashion Handbook* (London: Routledge, 2006), 207-208.
[116] Lantz, *The trendmakers*, 4-5.
[117] Ibid, 206.
[118] Agnès Rocamora, "Mediatization and Digital Media in the Field of Fashion," *Fashion Theory* 21, No.5 (2016): 507-508.

quickly buy anything they want from anywhere in the world.[119] Accordingly, fashion trend forecasters must make use of social media to generate trend information. Kaplan and Haenlein define social media as "a set of Internet-based applications that use the technology and ideology behind Web 2.0 that facilitate the creation and exchange of user-generated content."[120] The use of sites such as Facebook, Instagram, TikTok and Twitter coupled with vlogging has accelerated the speed of fashion change. In 1998 the lifespan of a fashion trend was approximately one year, in 2010 this was only a few weeks and today it is nearly every two days. Influencers have an almost instant connection with their audience as they share their style and observations on fashion trends daily. The influencer economy has made it possible for top influencers to earn over 100,000 dollars per sponsored post.[121] Social media has become the storage unit for fashion-related images, metadata and comments. It affects both market and consumer behaviour as the time-to-market pressure and the importance of viral buzz have increased significantly. This makes the process of predicting garment lifecycles and consumer adaptation of styles more difficult.[122] As a result, the consumer is 'listened to' more than ever before.[123]In the past designers and retailers were the ones pushing products into the market, now products are being pulled into the market based on consumer preferences.[124]

Advances in technology have affected the forecasting business as it expanded the variety of formats for trend forecasts. Most trend presentations are digitally formatted and can be downloaded by clients. Trend agencies' websites are available by subscription and include extensive information on a variety of trend angles, often from a cross-industry perspective. Additionally, some agencies offer tools to streamline product development, like creating online mood boards or colour palettes. Trend agencies also actively use their social media platforms to upload fashion trend forecast, highlight their inspirational sources and write blog entries to create a following.[125]

The adoption of technological advancement in fashion trend forecasting can be traced back to the birth of one of the biggest fashion trend forecasting agencies, Worth Global Style

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[119] "Is Fashion Ready for the AI Revolution?" The Business of Fashion, accessed February 23, 2021, https://www.businessoffashion.com/articles/technology/is-fashion-ready-for-the-ai-revolution

[120] Samaneh Beheshti-Kashi, Michael Lütjen and Klaus-Dieter Thorben, "Social Media Analytics for Decision Support in Fashion Buying Processes," in *Artificial Intelligence for Fashion Industry in the Big Data Era*, ed. Sébastien Thomassey and Xianyi Zeng (Singapore: Springer Nature Pte Ltd, 2018), 74.

[121] Eundeok Kim, Ann Marie Fiore and Hyejeong Kim. *Fashion trends: analysis and forecasting* (London: Bloomsbury Visual Arts, 2021), 57-58.

[122] Heuritech, "Trend forecasting: fashion's way forward," accessed November 25, 2020, https://www.heuritech.com/trend-forecasting-fashion-ai/

[123] Jackson and Shaw, *The fashion handbook*, 206.

[124] Larsen, "Digital turn in fashion trend forecasting," 83.

[125] Eundeok, Fiore and Kim, *Fashion trends: analysis and forecasting*, 163.

Network (WGSN). WGSN was founded in London in 1998 by brothers Marc and Julian Worth. Its success coincided with the digital transformation of society and it was the first of the new generation of online fashion trend agencies that provided information to major designers and retailers worldwide. Consequently, WGSN was included in the overall mapping of the fashion industry and established itself as a major force in trend reporting. It not only changed the nature and use of fashion trend forecasting but also developed new ways of discovering ongoing and upcoming. Its economies of scale led to a huge competitive advantage which changed the level playing field for other forecasting agencies. The online format facilitated the immediate accessibility of online reports, but also the rapid interpretation of global trends that were picked up by 200 agents across the globe. The website started with publishing records from catwalks and festivals across the world.[126] It later developed into displaying consumer insights, street styles, interactive mood boards and digital colours and patterns. WGSN's early success is said to stem from the Worth brothers' extensive network in the fashion industry. However, in 2005, WGSN was acquired by British media conglomerate East Midland Allied Press (EMAP) for 140 million dollars. This shows how fashion trend forecasting had become a big business, as the general awareness and interest in trend information had increased immensely and became cross-industry. Around 2011, WGSN had over 38,000 users from 3,000 different companies, such as LVMH and Levi Strauss. WGSN merged with its biggest competitor in New York, Stylesight, signifying the increasingly fragmented field of trend agencies. The gradual adoption of new management and organizational styles has coincided with the ongoing use of big data technologies. The platform continues to expand its global research by making its trend updates available in six different languages.[127] Carla Buzasi, Global Chief Content Officer at WGSN, states that the rise of AI has impacted the speed with which WGSN can examine data. The agency will remain to rely heavily on humans as the technology needs to be updated constantly. Furthermore, experts need to make judgments and revise the predictions that AI make based on their tacit aesthetic knowledge.[128]

Another leading online fashion trend agency is Fashion Snoops (FS). Its headquarters are in New York and it has over 100 international experts around the globe to monitor and translate trends. FS works with clients such as Victoria Secret and Nordstrom.[129] Its offices are

[126] King, "Colour Forecasting," 66.
[127] Lantz, *The trendmakers*, 14-17.
[128] "Data is the what, people are the why': How AI is changing trend forecasting," Glossy, accessed February 17, 2021, https://www.glossy.co/evolution-of-luxury/data-is-the-what-people-are-the-why-how-ai-is-changing-trend-forecasting/
[129] "Fashion Snoops," Appletizer, accessed June 13, 2021, https://www.appletizer.nl/nl/online-trend-services/fashion-snoops/

located in over 15 countries and it provides trend forecasts to thousands of members in over 50 countries. It has raised 350K worth of investment through the U.S. Small Business Administration.[130] Technology has always been part of its DNA, the launch of its online platform attracted a lot of media attention as it was framed as 'the next generation of forecasting'. The website incorporates advanced curation tools like dynamic trend mapping, social media, tracking and culture-to-product integration.[131] The 'create' area allows clients to use FS's content to make mood boards and trend presentations. The recent addition of AI helps to scan thousands of articles using image recognition technologies. It is applied to confirm macro trends and find emerging conversations on social media.[132] FS aims to incorporate as much of cultural trends that affect consumer behaviour as possible. The agency is said to have a strong backing of AI systems, but its core remains driven by a heart-led strategy based on paying attention to feelings and emotions." [133]

A question that often arises as a response to the existence of these huge online subscription-based trend agencies is that if everyone looks at the same service, does this mean everything will look the same? The reports fabricated by WGSN and FS are important tools to confirm or enhance predictions that fashion retailers or designers make, rather than a single source of inspiration. The reports can be used to validate design directions before presenting design ideas to the management of fashion companies. Designers continue to use their creativity.[134]

Understanding the field of Artificial Intelligence

AI is reforming economies around the world as it fuels productivity, improves efficiency and lowers costs. Senior Partner and Managing Director at The Boston Consulting Group (BCG) Sylvain Duranton claims that AI forecasting reduces errors by 25 percent. A profound understanding of technical concepts such as big data, artificial intelligence and machine learning is necessary as these are interlinked and constitute careers of the future. The Dartmouth Summer Research Project workshop held in 1956 is considered the birthplace of

[130] "Fashion Snoops: Overview," Owler, accessed June 14, 2021, https://www.owler.com/company/fashionsnoops
[131] "Corporate Overview," Fashion Snoops, accessed June 13, 2021, http://www.fashionsnoops.com/company.aspx
[132] Eundeok, Fiore and Kim, *Fashion trends: analysis and forecasting*, 62-63.
[133] "Fashion Snoops' Heart-Led Online Program Aims to Fuel Creativity," Women's Wear Daily, accessed June 13, 2021, https://wwd.com/fashion-news/fashion-features/fashion-snoops-heart-led-online-program-aims-to-fuel-creativity-1203688769/
[134] Lantz, *The Trendmakers*, 200.

AI. Several professors introduced AI as a field of computer science that takes the logic behind human intelligence as the basis of recreating intelligence in machines. These machines use intelligence to analyse their environments and undertake action. The end goal is to automate processes in which complex patterns are discovered that cannot be seen by the human eye.[135] Machine Learning (ML) is a way of achieving AI. The OECD defines ML as a variety of techniques that enables machines to learn patterns in an automated way with little interventions of humans. It can do so through supervised learning, unsupervised learning and reinforcement learning. Two other technologies worth mentioning are neural networks and deep learning, as they are responsible for solving intricate problems within AI systems. Neural networks facilitate the interpretation of text and images based on the data input. Deep learning, on the other hand, is responsible for learning the hierarchical relations inside the neural networks to understand extremely complex data structures.[136]

Another critical component in ML is data mining, which uncovers useful information that is hidden in large streams of data. This information is used to train the machines. The first step to achieve this is using web crawlers, which is an automated process of finding relevant data from a variety of websites. Social media platforms are an important source of data as it displays how consumers feel about products. Most platforms offer public application programming interfaces (APIs), meaning access to a structured database from which the machine can extract information. Artificial intelligence as a whole has played a major role in the development of the computer vision (CV) field. CV analyses images and videos with the help of natural language processing (NLP). NLP is a way for computers to understand human language. Together these technologies contribute to the understanding of the content and context of unstructured data.[137] The year 2011 marks essential breakthroughs in ML that have contributed to improved results in making predictions based on historical data. This has been the main driver for the development of AI systems.[138] Additionally, many of the data sets and software tools related to AI have been open-sourced. This has had a democratising effect, allowing smaller companies and individuals to contribute to building powerful applications via the Web. Researchers around the world engage in publishing academic papers and linking them

[135] Luce, *Artificial Intelligence for Fashion*, 3-5.
[136] "A definition of AI: Main Capabilities and Disciplines," High-Level Expert Group on Artificial Intelligence, accessed May 2, 2021, https://digital-strategy.ec.europa.eu/en/library/definition-artificial-intelligence-main-capabilities-and-scientific-disciplines
[137] Luce, *Artificial Intelligence for Fashion*, 10-13.
[138] "Artificial Intelligence: Ethics, governance and policy challenges," CEPS Task Force, accessed May 2, 2021, https://www.ceps.eu/ceps-publications/artificial-intelligence-ethics-governance-and-policy-challenges/

to online repositories that host codes to run algorithms. It has become easier to run one's data based on the available samples.[139]

The use of Artificial Intelligence in fashion trend forecasting

The fashion system has its origins in the mid-twentieth century and the world of fashion has changed significantly since then. Recently, the fashion industry has been branded as incompatible with the digital economy.[140] For the first time brands have been allowed to access real-time information on consumer sentiments related to fashion products. AI systems can crawl E-commerce sites to quickly see which products are selling and which attributes were the most popular.[141] Detecting trends in their early stages is a race against the clock which is becoming more complex. Moreover, the COVID-19 pandemic has shown that the fashion calendar is outdated, there is a growing demand for a business model that runs closer to consumer expectations. Another point of debate is the unnecessary travelling as merchandisers, buyers and fashion trend forecasters fly out to different parts of the world to get a sense of trends. AI has mainly been incorporated in front-end solutions such as smart product recommendations. The back-end integration is still in its early stages, but it can instigate a paradigmatic shift in how designers and retailers produce garments based on iterative processes.[142]

The application of AI systems in fashion trend forecasting is based on existing fashion theories. These theories suggest that three aspects, namely design details, patterns and colour are key. Various studies suggest that colour is the first thing that consumers look at when buying a fashion product. It determines both the short-term and long-term durability of a garment and is key to successful sales. Many brands have colours that are tied to their image, customers remain loyal to these brands because the colours are in line with their cultural preferences or symbolic associations. Brand images must be cohesive, changing them has the risk to lose a part of the customer base. Patterns like stripes, spots or checks are another primary garment attribute that influences consumers. Lastly, the design details refer to the shape of the

[139] The Business of Fashion, "Is Fashion Ready for the AI Revolution?"
[140] Sandy Black, "Sustainability and Digitalization," in *The End of Fashion: Clothing and Dress in the Age of Globalization*, ed. Adam Geczy and Vicki Karaminas (London: Bloomsbury Visual Arts, 2019), 114.
[141] Heuritech, "Trend forecasting: fashion's way forward."
[142] "Can Fashion Tame Data, Rather Than Being Ruled By It?" The Interline, accessed April 7, 2021, https://www.theinterline.com/01/2021/can-fashion-tame-data-rather-than-being-ruled-by-it/

garment, as well as the type of fabric. Successful design detail forecasting allows designers to develop popular styles that can last longer than a season.

Academic publications devoted to the use of AI in fashion trend forecasting remain rare. Most studies focus on consumer-facing applications of AI, instead of systems that can be used by fashion trend forecasters. This is caused by the fact that computer science researchers often lack experience in the fashion field. The publications that do focus on fashion trend forecasters utilize an AI algorithm called "R-CNN", an unsupervised learning method that works with Convolutional Neural Networks. R-CNN can detect garment attributes and their descriptions out of large databases full of fashion-related images.[143] A fundamental part of generating functional results with AI is based on selecting quality datasets. These datasets should incorporate different types of data such as social media posts, street snapshots, runway images and E-commerce photos. Exemplary datasets are DeepFashion, Fashionpedia and Streetstyle-27K. The most elaborate study is carried out by Menglin Jia et al, as they used fine-grained attributes in the Deepfashion dataset that consists out of over 800,000 images. The uniqueness of this dataset lies in the fact that it is annotated by a wide variety of experts from the fashion field. Through evaluating APIs, providing open-sources codes and developing trained models that are available at Github, the authors have come up with a manual that is ready for fashion trend forecasters to use. The advantages of using an AI algorithm in the fashion trend forecasting industry include that the models can discover clothing details that cannot be easily seen by human eyes. Traditional fashion trend forecasting is highly time-consuming and labour intensive. It requires trend forecasters' manual editing and categorization. It is also highly subjective, as opinions of the forecaster and general human errors tend to slip through.[144] It is easier to process large streams of data as the algorithm can run 24/7 and continuously updates the retrieved data. Moreover, it can decrease the financial and environmental costs for fashion retailers that come with less accurate forecasts.[145]

Several players in the fashion trend forecasting industry have started exploring the opportunities of AI systems in their day-to-day operations. Data-led fashion trend forecasting agency Heuritech is disrupting the French forecasting industry which is dominated by traditional agencies such as NellyRodi and Peclers Paris. Heuritech was founded in 2013 by two male entrepreneurs who have obtained a PhD in Machine Learning. The agency uses AI

[143] Shi et al., "The exploration of artificial intelligence application in fashion trend forecasting," 3-5.
[144] "Using Artificial Intelligence to Analyze Fashion Trends," Cornell University, accessed May 3, 2021, https://arxiv.org/abs/2005.00986
[145] Shi et al., "The exploration of artificial intelligence application in fashion trend forecasting," 26.

to scan millions of social media images for their clients, which are leading global brands such as Moncler and Dior. The founders developed an exclusive image recognition technology that is updated daily. The agency states that brands miss around 78 percent of insights if they perform a text-based analysis only. The technology can analyse more than 2000 components of social media posts including attributes, colours, prints, fabrics and shapes. To detect emerging niche trends one needs to take into account the general context. In-house developed deep learning techniques pick up on the 'early signals' of random trend evolutions that can alter the way consumers perceive fashion. Heuritech uses random sampling to reduce selection bias. Furthermore, a scheme for geographic consumer segmentation is determined to understand regional differences between markets that allow for targeted clothing production. Computer Vision technology enables economies of scale when it comes to quantifying how a trend has evolved, qualifying its behaviour and benchmark it against other trends in the same category. Predictions made by Heuritech are said to become better over time as the algorithm bases its outcomes on more historical data. Merchandisers and buyers benefit a lot from an in-depth understanding of how the market has been responding from a long-term perspective.[146] Nonetheless, these 'Second Generation' forecasting agencies have not gone unchallenged, as the tasks of pinpointing the 'right' data sources remain ambiguous.[147]

The debate around Artificial Intelligence in the fashion trend forecasting industry

Trend mechanisms like trickle-down and bubble-up have assisted fashion trend forecasters in detecting trends for a long time, as they are the drivers behind the spread of fashion change throughout society. The current digital infrastructure enhances the production of noise, which leads to fashion trend forecasters being immersed in information overload. The methodologies of fashion trend forecasters have changed as they can easily access subcultures through their smartphones by checking up on apps such as Instagram or TikTok. As a result, a new trend mechanism has surfaced called 'digging up'. AI systems can guide this process of digging up, but fashion trend forecasting agencies must determine what the AI will do and what the forecaster will do.[148] Some have placed question marks on AI's ability to capture the creative

[146] "How heuritech forecasts fashion trends thanks to AI," Heuritech, accessed February 24, 2021, https://www.heuritech.com/blog/articles/how-heuritech-forecasts-fashion-trends-thanks-to-artificial-intelligence/
[147] Elisabeth Petermann, "Archaeology of the Future: Reconsidering the Place and Nature of Trend forecasting in Design Discourse," (PhD diss., University of Applied Arts Vienna, 2014), 9-11.
[148] Larsen, "Digital turn in fashion trend forecasting," 95.

core that is at the heart of the fashion industry. The human touch and mind of the fashion trend forecaster is an asset that remains significant.[149] According to DuBreuil and Lu, AI systems can predict more stable and coherent trends based on colour. It can also easily monitor the popularity of all available patterns in the market. Design and style details, on the other hand, are hard to quantify.[150] Various human elements such as experience, intuition and reputation are needed to back up the logic of the AI decision-making process.

The biggest difficulty when it comes to incorporating AI in fashion trend forecasting is trying to understand important cultural factors that influence fashion trends. Societal attitudes, political movements and shifts in ethics are hard to quantify. The fundamental part of fashion trend forecasting lies in discovering what 'bonds' a consumer to a fashion product as they are based on emotional and tactile preferences.[151] Moreover, AI systems do not possess the level of tacit aesthetic knowledge that fashion trend forecasters have trained by being emerged in the fashion field. The lack of creative thinking skills can result in overlooking consumers' wishes for out-of-the-box designs that are not just based on the analysis of historical data.[152] The risk with using AI to extract comes with trend agencies being blindsided by the data. Datasets contain so much noise that is important to interpret the information correctly and not just make assumptions. The selection of data sources is another point of discussion as it impacts the outcome of the data analysis. Social media can only be used when it is anonymised, as it is subject to privacy and tracking regulations which can alter the sample.[153] Furthermore, a part of the target audience can be missed as not everyone has an online presence on social media.

As AI systems are maturing, issues around their ethics have raised questions. It is increasingly difficult to understand why AI makes a particular choice. Moreover, companies are not held accountable for limited efforts in trying to understand the biases in the data that algorithms are trained on.[154] A neutral algorithm does not exist, therefore it is important to define which biases are tolerable. The CEPS task force notes that is important to consider the notions of fairness, accountability, transparency and explainability.[155]

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[149] Ibid, 25.
[150] DuBreuil and Lu, "Traditional vs. big-data fashion trend forecasting," 2.
[151] Tracy Anna Rickman and Robert M. Cosenza, "The changing digital dynamics of multichannel marketing: The feasibility of the weblog: text mining approach for fast fashion trending," *Journal of Fashion Marketing and Management* 11, No.4 (2007): 606-607.
[152] DuBreuil and Lu, "Traditional vs. big-data fashion trend forecasting," 3.
[153] Larsen, "Digital turn in fashion trend forecasting," 62.
[154] Luce, *Artificial Intelligence for Fashion*, 192-194.
[155] "Artificial Intelligence: Ethics, governance and policy challenges," CEPS Task Force, accessed May 2, 2021, https://www.ceps.eu/ceps-publications/artificial-intelligence-ethics-governance-and-policy-challenges/

Nonetheless, if AI models are combined with the forecasters' mind, fashion trend forecasting errors can be reduced up to 50 percent. Fashion trend forecasters need to use their intuition, tacit aesthetic knowledge and habitus to get meaning out of data analysis. Moreover, they are better at formulating value judgments when it comes to deciphering the context of an emerging trend. The AI systems, on the contrary, can facilitate pattern discovery, use large-scale mathematical models, and perform statistical reasoning. The Boston Consulting Group was challenged by a fashion retailer to see if AI systems could beat their designers in developing the right collections. During a TED talk, Duranton described the process of combining human minds with machines can be long, costly and difficult. In the end, however, the retailer was able to save 100 million dollars a year. This collaboration shows how only humans can decide what is right or wrong when it comes to defining the rules for AI systems. Fashion trend forecasters' knowledge can make data meaningful and usable. The fashion industry already fears algocracy, so it is imperative to determine the role of the AI system and the fashion trend forecaster.[156] AI can be used as a creative tool to bolster the trend forecasters' intuition and guide the fashion trend forecasting industry into a new era.

[156] "How humans and AI can work together to create better business," TED, accessed May 11, 2021, https://www.ted.com/talks/sylvain_duranton_how_humans_and_ai_can_work_together_to_create_better_businesses/transcript?language=en#t-400745

Chapter 4: Gender balance

Introduction

From the *stylistes* at *Bureaux du Style*, the early professionalization of fashion trend forecasting with Tobe Associates and to present-day gurus like Lidewij Edelkoort and Nelly Rodi. There seems to be one common denominator throughout the history of fashion trend forecasting, namely the numerical dominance of women. Its origins can be traced back to the gender stereotypes of the modern era which displayed women as being tied to the sphere of fashion. This is based on their high taste levels and 'the eye' for spotting trends. Moreover, it was scientifically proven that women were less colour blind than men. Recognizing and determining trendy colours is a vital part of fashion trend forecasting, resulting in women being the tastemakers in this field.[157] Women were thus allowed to build their business skills, become entrepreneurs and develop great careers that were not possible in various other fields.[158] Business life has always been gendered. The jobs that men and women take up are direct outcomes of the cultural, institutional, social and biological environment. Cultural conceptions are continuously perpetuated and internalized. According to Angela McRobbie, the fashion industry has created a 'virtuous cycle' in which gendered skills and attributes are stimulated. McRobbie describes fashion as a sector that draws upon many of women's traditional skills and interests, like clothing, communication and aesthetics.[159] However, the recent influx of technology and capital into fashion trend forecasting has changed the nature of the industry. A new archetype of trend agencies entered the scene that differs from the traditional trend agencies as they are led by anonymous parent companies, big data streams and tech competencies. The tech sector is often viewed as 'male-only', resulting in various barriers for females wanting to enter this field. One's gender continues to dominate life at work because it is heavily embedded in the sectors' constructed image over the past decades. The often-criticized tech sector is an extreme example of what a lot of companies still face, the existence of a persistent gender dominated culture that drives talent out of the field.[160] All things considered, this chapter answers the question: how has the gender balance in fashion trend forecasting evolved since the 1980s? The purpose of this chapter is to analyse the effect of

[157] Blaszcyck and Wubs, *The Fashion Forecasters*, 27.
[158] Ibid, 79.
[159] Molloy and Larne, "Who needs cultural intermediaries indeed?" 372-373.
[160] "Gender Initiatives Are Culture Change Initiatives," Harvard Business Review, accessed June 15, 2021, https://hbr.org/2015/10/gender-initiatives-are-culture-change-initiatives

gender stereotypes in the spheres of fashion and technology, two sectors that are combined in fashion trend forecasting. Furthermore, the importance of achieving a non-skewed gender balance in trend agencies will be discussed.

Business is always gendered

Fashion and technology find themselves on opposite ends of the spectrum as they are respectively seen as feminine and masculine industries. This is based on the prevalent gender stereotypes that circulate throughout society. Gender stereotypes are preconceived social and cultural ideas that assign certain characteristics and roles to men and women. Limitations based on one's sex are formed that can feed into practices of gender discrimination. Moreover, gender stereotypes form an obstacle to achieving true gender balance in the workplace. Battling these issues has to do with making changes in culture and behaviour on the company and societal level. Men need to be included in this change as much as women.[161] Gender is a social construction that is based on ideas developed within popular and influential belief systems. As a result, gender stereotypes are subject to change as discursive practices are tied to the Zeitgeist.[162] Nonetheless, social life continues to be organized around the distinction between male and female. This kind of gender polarization spills over into career choices and gender stereotypes in the workplace.[163]

Research shows that there is a lack of gender diversity in the science, technology, engineering and mathematics (STEM) workforce. Looking at the field of AI more specifically, the contribution that women have made is undeniable if we view it from a historical perspective. Women were vital in the development of coding and programming from World War II to the 1960s. During the beginning stages, this work was perceived as low-skilled. As the jobs in AI became more socially, culturally and economically important, women were gradually pushed out. The rise in prestige and capital involved had detrimental effects on the gender balance in the AI workforce.[164] The World Economic Forum's 2020 Global Gender Gap Report that just 26% of the professionals employed in data and AI are women. This lack

[161] "Towards a Stereotype-Free European Union: Opinion on Combatting Gender Stereotypes," Advisory Committee on equal opportunities for women and men, accessed June 6, 2021, https://eige.europa.eu/men-and-gender-equality/methods-and-tools/european-union/activity-advisory-committee-equal-opportunities-women-and-men

[162] Paula Nicolson, *Gender, Power and Organization: A psychological perspective on life at work* (London: Routledge, 2015), 20.

[163] Mary A. Lemons and Monica Parzinger, "Gender Schemas: A Cognitive Explanation of Discrimination of Women in Technology," *J Bus Psychol* 22 (2007): 92-93.

[164] The University of Cambridge, "AI and Gender: Four Proposals for Future Research."

of diversity has various causes such as gender stereotypes and discrimination, 'toxic' work environments, a skewed work-life balance and a lack of role models and mentors.[165] Cheryan and Markus pose that 'masculine defaults' are persistent, whereby technical skills and expertise have historically been gendered. These masculine defaults position the masculine over the feminine and become clear in the language used, such as 'brogrammer' 'geek culture' and 'hustling'.[166] Focusing on gender as binary attaches certain attributes to being male or female, even though they are not biologically determined. This can lead to misinterpretations and implicit biases.[167] As a result, valuable talents and strengths can be overlooked.[168] Since AI will be an important part of the future of the fashion trend forecasting industry, trend agencies need to consider the effects on its workforce.

The fashion industry, however, is one of the very few sectors that is receiving minimal criticism on its gender balance compared to other traditionally gendered fields. However, it still has structures and practices in place that reinforce the traditional division of labour along gender lines. Women far outnumber men in fashion education, marketing, trend forecasting and media. Men often hold the more powerful and well-paying positions as they own design firms and conglomerates.[169] This division is also present fashion trend forecasting. Fashion trend forecasters are mostly female as they need to have profound experience in the fashion field and frequently have an educational background in design or marketing. Yet, the owners of large data-led trend agencies are mostly men. The overall composition of the industry is based on a feminine image, which results in a lack of men becoming the actual forecasters.

Reinforcing the traditional division of labour

Gender balance in the workplace is an important business issue that a lot of companies are addressing. McKinsey & Company have estimated that true gender balance at work could add around 28 trillion dollars to global GDP if achieved everywhere.[170] Millennial actress Emma Watson leads the way in trying to reframe gender balance as an issue that unites men and

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[165] "AI is in danger of becoming too male," The Conversation, accessed April 7, 2021, https://theconversation.com/ai-is-in-danger-of-becoming-too-male-new-research-121229

[166] Advisory Committee on Equal Opportunities for Women and Men, "Towards a Stereotype-Free European Union: Opinion on Combatting Gender Stereotypes."

[167] "Discriminating Systems: Gender, Race and Power in AI," AI Now Institute, accessed May 7, 2021, https://ainowinstitute.org/discriminatingsystems.html

[168] "Women in Tech: The Facts // See what's changed and what hasn't," National Center for Women & Information Technology, accessed May 8, 2021, https://ncwit.org/resource/thefacts/

[169] Allyson Stokes, "Fashioning Gender: The Gendered Organization of Cultural Work," *Social Currents* 4, No. 6 (2017): 518.

[170] Ann Francke, *Create a gender-balanced workplace* (London: Penguin Books Ltd, 2019), 1.

women, rather than disconnecting them.[171] Both fashion and technology are not gender-neutral. This influences the everyday experiences of gender and the distribution of power within traditional and data-led trend forecasting agencies. The opportunities, resources and career paths available to men and women, as well as the types of barriers constraining them, are impacted by their gender. The assigned characteristics and roles related to gender can be useful in one context but simultaneously lead to disadvantages in another.[172] These biases are even harder to battle in 'majority-group' environments such as tech departments, as males are already outnumbering females.[173] Achieving gender balance is about making sure that individuals have the same opportunities in the workplace without considering their gender. This includes access to employment and opportunities for self-development. Even though traditional fashion trend forecasting agencies have provided women with opportunities that were not common in other industries, it is vital to debunk career stereotypes that contribute to a persistent gender imbalance.[174] The same accounts for data-led fashion trend forecasting agencies. These agencies consist of multiple teams that carry out different tasks, as specific teams are responsible for constantly developing the AI systems and feeding it new images. This is the case at Heuritech, where two data-sided teams continuously look at the algorithms to see if there are problems in the code and determine the necessary attributes. The data teams consist of males, whereas the fashion and product teams consist of females. Having a gender imbalance is thus a problem that occurs within the overall composition of the trend agency, but also across the various teams. Achieving gender balance is imperative for fashion trend forecasting agency as mixing genders and working together leads to better outcomes than working in silos. There is a strong business case for a gender-balanced workplace, as it can boost financial performance and increases the ability to attract and retain talent. Moreover, it can contribute to penetrating untapped markets and getting a competitive edge over competitors. More creative and innovative decisions come from working in mixed teams as there are different point of views incorporated. It can also bring fashion trend forecasting agencies closer to clients with a variety of backgrounds and strategic goals.[175]

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[171] "Gender at Work Is Not a Women's Issue," Harvard Business Review, accessed June 15, 2021, https://hbr.org/2015/11/gender-at-work-is-not-a-womens-issue
[172] Wheadon and Duval-Couetil, "Token entrepreneurs," 310-311.
[173] Workforce NCWIT Alliance, "WOMEN IN TECH: THE FACTS 2016 UPDATE // See what's changed and what hasn't,"
[174] "Advancing Gender Balance in the Workforce: A Collective Responsibility," OECD, accessed June 8, 2021, www.oecd.org/tax/forum-on-tax-administration/publications-and-products/advancing-gender-balance-in-the-workforce-a-collective-responsibility.htm
[175] Francke, *Create a gender-balanced workplace*, 1-2.

On the road to meritocracy

The classic line spoken by managers when it comes to gender is: "I am gender blind, all I care about is competence."[176] But treating men and women the same does not work, because they are not the same. Both fashion and tech carry a reputational risk that can lead to not attracting talented individuals. Fashion trend forecasting agencies should focus on creating an attractive image that can work to their advantage.[177] A dominant group of influential traditional fashion trend forecasters, such as Lidewij Edelkoort, have been in power for a long time and have the systemic preferences to continue to work with the same people. They have been sourcing talent from the same networks in the fashion field and capitalize on their historical legacies. The novel data-led trend agencies are trying to find new ways to attract talents, who often represent younger generations. The globalization of fashion and technological advancements have showed how trend forecasting agencies must actively work on building skills that keep up with the pace of societal change. Both traditional and data-led trend agencies use their website and social media platforms to display their methodology and competence. Furthermore, most of the online subscription-based forecasting agencies showcase a full profile of their forecasters.[178]

The data-led fashion trend agencies demand a variety of different skill sets. Underlying sociocultural factors, gender stereotypes and implicit biases shape the access to symbolic and explicit resources. The challenges encountered by women in AI involve both types of resources, meaning that barriers to 'capital' in this context go beyond financial assets. Resources exist in multiple forms, including human capital (experience and education), social capital (mentors and networks) and cognitive capital (motivation and interest). All forms of capital are needed to get women to be more involved in the data teams of data-led fashion trend forecasting agencies. Employing both men and women in the field of AI increases a group's problem-solving capabilities and augments innovation. Moreover, the presence of both genders ensures that the AI systems and their application are shaped by the experiences and viewpoints of men and women.[179] This can battle the fear of algocracy that is present in the fashion industry. Moreover, a lack of diversity can lead to biases in analytical processes, but also a poor understanding of the underlying data.[180]

[176] "How to Get More Men to Take Gender Balance Seriously," Harvard Business Review, accessed June 15, 2021, https://hbr.org/2019/11/how-to-get-more-men-to-take-gender-balance-seriously
[177] Harvard Business Review, "How to Get More Men to Take Gender Balance Seriously."
[178] "Our Experts," Stylus, accessed April 5, 2021, https://www.stylus.com/experts
[179] Alan Turing Institute, "Women data science and AI."
[180] "Where are the women? Mapping the gender job gap in AI," Alan Turing Institute, accessed May 6, 2021, https://www.turing.ac.uk/news/where-are-women-mapping-gender-job-gap-ai

Avivah Wittenberg-Cox, CEO of gender consultancy company 20-first, claims that for companies to think different, a different balance needs to be brought to the table. To attain long-term success, trend agencies need to connect to a hundred percent of the talent pool. Talking about gender balance can lead to emotional responses. If fashion trend agencies want to bring this topic to light, it is important to use 'gender bilingual' language. This means that managers need to speak the language of both men and women, but also understand what the differences between them are. Using words that suggest feminine or masculine norms can unconsciously turn people off.[181] Traditional trend forecasting agencies can benefit from incorporating both genders in doing research and data-led trend agencies need to be made aware of the masculine defaults that are embedded in the tech teams. Attracting people who represent the talent and markets of the future, regardless of their gender, can bring fresh ideas forward.[182] Distinguishing real differences between men and women from stereotypical descriptions is fundamental. Managers need to understand why both genders get judged negatively for behaving outside their gender roles and in what kind of barriers this results. Furthermore, trend agencies need to actively contribute to educating their workforce on these issues, as well as providing mentors and role models.[183]

The biggest challenge for trend agencies is not creating completely new trends but thinking differently about the trends that are currently playing out in society and how to align them with previously written reports. The strong relationship of fashion to social, cultural and political changes makes it important for fashion trend forecasters to be able to connect to a variety of different groups in society. Incorporating different points of views in trend agencies is essential, which can be achieved through creating equitable and gender-inclusive workplaces. The various teams within fashion trend agencies need to be on the same page through enhancing communication. This can lead to developing skills in different areas, higher levels of trust and achieving a true meritocracy. Relatively new fashion trend forecasting agencies may have an advantage here, as it is a lot easier to fix a company culture early before it becomes systemic.[184]

[181] "How CEOs Can Put Gender Balance on the Agenda at Their Companies," Harvard Business Review, accessed June 15, 2021, https://hbr.org/2016/11/how-ceos-can-put-gender-balance-on-the-agenda-at-their-companies
[182] "Gender Balance Is Hard, but It's Not Complicated," Harvard Business Review, accessed June 15, 2021, https://hbr.org/2014/10/gender-balance-is-hard-but-its-not-complicated
[183] Harvard Business Review, "How CEOs Can Put Gender Balance on the Agenda at Their Companies."
[184] Harvard Business Review, "Gender Initiatives Are Culture Change Initiatives."

As the nature of the fashion trend forecasting industry is subject to change due to technological advancements, keeping track of the gender balance is necessary. Prominent fashion trend forecasters such as Lidewij Edelkoort and Nelly Rodi have set the tone for the industry starting in the 1980s. The fashion trend forecasting industry is still female-dominated, which originates from the fashion industry being regarded as a feminine industry that feeds off gendered skills and attributes. Battling these issues can start at changing the culture and behaviour within fashion trend agencies itself, whereby men need to be included as much as women. Achieving gender balance should be high on trend agencies' agendas as mixing genders and collaborating between different teams can lead to better fashion trend forecasts. Observing the many different layers of society in the globalized world of fashion requires diverse teams who operate from different research areas and locations. The birth of data-led fashion trend forecasting agencies shows a clear division along gender lines between the tech teams on one side and the fashion teams on the other. This is due to tech still being viewed as 'male-only'. Both men and women need to be incorporated into developing AI systems for these trend agencies, as extracting meaning out of the data and connecting the dots require multiple viewpoints. Technological competencies should be widespread as their importance will increase in the future. Moreover, attracting people who represent a variety of talents and markets, regardless of their gender, can bring exceptional ideas forward. It also contributes to attracting a larger pool of clients. To further determine the influence of technological advancements on the gender balance in the fashion trend forecasting industry, chapter 5 presents the analysis and findings of the empirical data.

Chapter 5: Analysis and findings

In this chapter, the most important findings from the analysis of the interview transcripts will be presented. The findings from the interviews will be displayed concerning each category that was found during the data analysis process. Moreover, the findings will be interpreted through the lens of the theories that are presented throughout this thesis. The following categories are defined: no formal methodology, the existence of large streams of data and persistence of female dominance. For each of these three categories, the researcher identified subthemes based on what the collected empirical data suggested. The first part of the data analysis aims to answer the question: what is fashion trend forecasting? The category no formal methodology aims to set out the logic behind the methodology of fashion trend forecasting in both traditional and data-led fashion trend forecasting agencies. The second part of the analysis focuses on: what is the role of technological advancements in the development of the fashion trend forecasting industry? This section discusses the growing importance of AI systems in developing fashion trend forecasts, as well as the call for finding a balance between machines and the mind of the forecaster. The third part of the analysis aims to find out how the gender balance in fashion trend forecasting has evolved over the last four decades. It does so by displaying how fashion trend forecasters have experienced the gender balance within their trend agencies while linking it to the overall importance of achieving gender balance for the future of fashion trend forecasting agencies. The categories and sub-themes will be discussed based on quotes taken from the interviews.

No formal methodology

The first overarching theme is no formal methodology. Every fashion trend forecaster has a different way of conducting trend research. They continue to refine their strategies during their careers. This is due to changes in the way fashion change spreads throughout society, as well as the emergence of new sources that demonstrate information on trends. The identified sub-themes in this category are: forecasters' touch, building credibility and focus on consumers.

Forecasters' touch

The first sub-theme, forecasters' touch, stresses the importance of the characteristics of individual fashion trend forecasters. Fashion trend forecasters are using various sources to back

up their research based on their personal preferences and cultural background. A vital part of fashion trend forecasting is continuously making new combinations from the gathered information. Part of the creative process is synthesizing all the data and adding a personal touch to framing the trend based on which the client can be inspired. Furthermore, as fashion is such a global endeavour, it is essential to look at trends from a cross-industry perspective and have people stationed in different locations to be immersed in the culture.

> Participant 4 stated: “At the beginning of my career, my company was named Jan Agelink Trendverhaal. I make stories and I can change these stories every day. I try to make them as exciting and inspiring as possible, so my clients can actually use them. This is my point of view, it is very personal. For me, it does not matter if the information is necessarily right or not, the goal is for it to energise or inspire someone. I call myself a trend forecaster because it is not an exact science."

> Participant 6 stated: “We are all very curious team members, so we have our little ways of conducting research. I follow a lot of Chinese social media sites and we try to read as much as possible. Everyone can hire a freelancer, but we are looking for the weird kind of underground things so that the client will be really surprised about what we bring to the table. Having an analytical mindset is really important. I am really proud of being able to see the human issues that underpin a lot of these trends. Especially being a Chinese woman in the Western world, having experienced racism, sexism and those kinds of things.”

> Participant 8 stated: "Being a trend forecaster comes with having your own vision, your own creative mind. You have a certain worldview. This results in your work not being completely objective. You have your own ideas on how to create a better world and you try to convey this message.”

> Participant 12 stated: “I think the conversation between different teams is really important to figure out what is going on. There is a lot of conversation about topics that are not necessarily product-based at all. They focus on what is happening in terms of culture in different countries. Looking at things globally is really important to determine where these ideas are coming from and how they are being pushed forward.”

Building credibility

Being a fashion trend forecaster means coming from an authoritative angle to inform clients about new product lines, future directions for their businesses and promotional campaigns. Having built a reputation over the years for 'getting it right' can assist in attracting clients. The interviews made it clear that having developed a 'feel for the game' inside the fashion field is important, as well as having an educational background in journalism, design, politics or marketing. Being able to talk the language that clients understand is vital, as formal trend sources need to be understandable for merchandisers, buyers and designers. Moreover, storytelling and tacit aesthetic knowledge make it easier to persuade and inspire clients of the valuable information stated in the trend reports.

> Participant 1 stated: "I thought there were going to be some type of rules in place or some type of program to follow as to how you come up with the next best trends. I realized when I was doing this, that if I am respected enough in my field, people will listen to me."

> Participant 5 stated: "I have always been attentive to what is happening in the world. I try to define new directions for clients to go in. I do not only do this from a static point of view, but I actively help our customers in communicating things in the right way. I use storytelling and visuals, while also collaborating with them during trend fairs and so on."

> Participant 6 stated: "We do looking back reports on the Stylus site because we have reports that turn out so frequently. We can show these successes off to our clients. This year my manager and I were like: "Oh, we, we talked about that two years ago. We know H&M has launched something new and we are like, that is definitely from us."

> Participant 12 stated: "I think the longer you have been looking at trends, the easier you spot when something unusual or interesting is happening. Because to some extent, if you look at a lot of product, you also get bored quite quickly. So, if you would find something that is different or exciting, that might give you a moment to pause and think: is there something going on in there? Once you have a hunch, then you have to go and investigate."

The interview participants stressed that their power lies in providing their clients with a 'helicopter view'. Even though fashion trend forecasters are part of the fashion industry, they are not actively working in the industry. It allows them to see the bigger picture, as well as a wide range of societal issues, that almost resembles an objective outsider perspective. Related to the forecasters' touch, the data suggests that fashion trend forecasters see themselves as the ones pushing positive developments, for example around issues like sustainability.

Focusing on consumers

One of the main points of research in fashion trend forecasting is observing the Zeitgeist, in which fashion trend forecasters actively seek the mentalities behind the general cultural, political or social climate. According to the interviewees, fashion trend forecasting is becoming more culture-based than product-based. 7 out of 12 participants stated that they have witnessed rising attention for the consumer. Fashion remains a highly emotional product through which people express themselves. The data shows that this has become accelerated with social media. Moreover, the online subscription-based fashion trend forecasting agencies are turning to their websites and social media channels to inform clients and the media about changing consumer sentiments. This highlights their role as gatekeepers in the fashion industry, but also as facilitators of the democratization of fashion.

> Participant 3 stated: "I am all over Tik TOK. I think that some of the most interesting cultural innovations are found here. It has become this public square of 'here is my idea, let me share it with you in 15 seconds'. It has been really exciting to see how real people think."

> Participant 4 stated: "First we start with analysing the consumers and how they are being affected by everything that is happening around us. COVID-19 has been a big one. Whatever region you are looking at, you have to understand that this is your audience and this is how they are living their lives right now. This results in certain brand expectations and demands, which is where the client comes in. Overall, we are trying to be more empathetic and human-centric."

> Participant 6 stated: “We have talked a lot about racial representation and body positivity. I really hope that our forecasts and our reporting on these issues help, as our consumers are really passionate about these things. There is a demand there and we can show these fashion brands that they can expand their reach. It is almost like flipping that relationship to us pushing the fashion brands. I feel sometimes when I am writing these blogs, that it is really important to call them out, even though it is not necessarily comfortable for our clients.”

What becomes clear from the category no formal methodology is that fashion trend forecasters view their job as something personal, creative and innovative. Even though there is no formalized methodology, not everyone can become a forecaster. The forecasters' experience in the fashion field, cultural background and analytical mindset helps them in coming up with out-of-the-box ideas that surprise and inspire clients. Their job consists of continuously scanning the environment for the 'how' and 'why' behind emerging trends while trying to connect the dots. Having a reputation for 'getting it right' attracts new clients. This asset can be featured at trend agencies' websites or through issuing looking back reports. Moreover, there has been a shift in fashion trend forecasting from product-based to culture-based information. This shift has occurred as consumers play a bigger role in the development of trends due to the power of social media. The consumer is listened to more than ever as clients are trying to navigate through competitive markets while being on a limited budget. Furthermore, fashion trend forecasting agencies increasingly utilize their own social media channels and websites to expand their reach. Blog sections and webinars have become important tools to capture the attention of both consumers and clients, through addressing topics that are trending in the global world of fashion. Paying attention to the Zeitgeist helps fashion trend forecasters to address important social, environmental and political issues outside of the fashion industry. This 'helicopter view' holds a significant amount of discursive power. Fashion trend forecasters are thus an important link in the fashion industry that can push positive change in the beginning phases of developing collections, as the industry continues to face backlash on its triple bottom line.

The existence of large streams of data

The second overarching theme is the existence of large streams of data. The digital transformation of society has led to new ways of communicating and interacting with fashion.

Fashion retailers and designers have an abundance of information to their disposable to produce clothing. Fashion trend forecasters, in turn, also must deal with this changing landscape. Large streams of data related to the discovery of trends are at their fingertips, as they find a way to distinguish the noise from useable information. The identified sub-themes in this category are: industry scale enlargement, new business models, use of complicated technologies and human-centred approach.

Industry scale enlargement

The first sub-theme is industry scale enlargement. The findings of the interviews point to an increase in the general awareness of and interest in trend information. Fashion retailers have made it part of their daily routine to read online subscription-based trend reports, as they are a quick and easy way to be continuously updated on the world around them. Large capital groups have taken over some fashion trend forecasting agencies and introduced them to the world of big data. This increase in scale, budgets and technological know-how has led to fragmentation. Smaller trend agencies try to survive through finding a niche in the industry and retaining their clients based on their historical legacies. Furthermore, most of the interviewees have witnessed an increase of merchandisers and buyers as clients, instead of designers. What distinguishes them from working with designers is that they are looking for tangible validation based on data, instead of extensive storytelling and visuals.

> Participant 2 stated: “There are many different layers of the fashion trend forecasting industry and they are becoming increasingly fragmented all over the world. You cannot even imagine how complex it has gotten. There has been a significant growth in economies of scale and some of these bigger trend agencies have taken over the smaller agencies. They have the resources to capitalize on these different layers of the fashion industry. I used to have a big trend agency, but this dissolved after the economic crisis of 2008. I still have a big part of my clients, but the budgets have become smaller.”

> Participant 3 stated: “One thing we are very clear on is that a spreadsheet or some type of physical indication that can help see the reader that there is a growth or a decline moves mountains for them. In reality that is the only way, I could actually show the evolution of a trend and give it some prudence. All those things like graphs and citing my references helped move the trend in a way."

> Participant 4 stated: “We can surely state that the whole trend business is exploding right now, one of the indicators is complete academic studies devoted to trend watching like the one in Tilburg. This does not only mean people are being trained to become a trend watcher, but also that there are positions within companies that need to be filled. It can be very useful to a company to have someone in-house that is up to date with societal developments and has the knowledge to translate it to their business.”

> Participant 12 stated: “I think there has been a shift from forecasting being something that is just trying to figure out what the design teams need to do. It increasingly went to the marketing, merchandising and buying teams who are leading the strategy in terms of what sort of products they want.”

New business models

The second sub-theme is new business models. The interview findings suggest that there is a new generation of fashion trend forecasting that has technology as part of their DNA. Their business models differ from traditional fashion trend agencies, especially in the way they are managed and organized. This originates in the fact that these agencies have the financial resources and technological know-how to conduct different methods of trend research. The data-led forecasting agencies are often divided into different teams which focus on product, marketing, data and fashion. Their online presence is their prime asset, which comes with having to find new ways to create a viral buzz and attract clients. The excerpts show the various ways in which trend agencies operate.

> Participant 2 stated: “I would describe myself as a knowledge and networking company. I know that these large forecasting agencies have huge teams who work on stuff 24/7. I work with freelancers who work for me on a project basis. I have people who write texts, people who make videos, people who buy-in materials and people who responsible for creating colour cards. Over the past 20 years, I have gathered a lot of people around me, in that sense I have a storage of knowledge that can measure up to the bigger trend agencies. The only difference is I am using it differently."

Participant 6 stated: “We do webinars, events and a podcast. Experts on the content team would go to events around the world and present there as well. I write blog entries and we frequently churn out online trend reports. Currently, there is a lot of talk on doing the website in another language. Is that a conversation we should start having?”

Participant 9 stated: “We have all of our data sided teams, that feed images to the artificial intelligence machine. They spend all day just feeding it and checking if there are problems in the code. We also have a team that determines the attributes. We have a team that looks at just products. I am a part of the marketing team and we create content in general. We write the articles, do graphic design and speak with journalists. I write a lot of articles about brands themselves, I look at what is working and what is not working. In my articles, I write what our solution can do and what I think the brand should fix within itself. And that gets their attention. And then finally we have our fashion team. They are the ones that are going to define trend themes, follow fashion weeks and all the collections that are coming out. They bring in the fashion expertise.”

Use of complicated technologies

The digital transformation of society has resulted in an overload of online fashion related information. The Internet has become a vast fashion library that can be used for the identification of trends, a process that is becoming increasingly complex. The next generation of forecasters is gradually adopting AI systems to make sense of the information at hand. The findings below discuss reasons mentioned by the interviewees of both types of trend agencies to use AI, which is ranging from making the research less time-consuming to reducing the fashion industry's waste levels.

Participant 1 stated: “The best way to help brands, retailers and the whole supply chain to understand what fashion is and where fashion is going, is to elicit what web crawlers are. Web crawlers can go online and find out when things are entering the sales market, if they get restocked and if they get discounted. Certain frameworks are attached to trend forecasting that I utilize."

Participant 3 stated: “The longer we have AI systems, the more historical data is being analysed. We will be able to say more specifically when a trend comes up. We have an

AI culture tracker and when we put in specific keywords, it will scan the internet for any words, articles, photos or social posts related to it. That is part of my morning routine."

Participant 7 stated: "Our value proposition is that no fashion designer can look at all of these images in a single shot and predict the right trend. It is also very subjective, as someone is giving their opinion of what is essentially happening right now. We have been working with a lot of fashion retailers and designers. Half of the designers are extremely creative and do not like fashion analytics at all. But surprisingly, some of them actually love these kinds of things because they have to make money. It is probably one of the industries that mix both the left and right brain. It is creative, but unless you sell it what is the point of designing something."

Participant 9 stated: "Our technologies are around 92% accurate for one season in advance. In our trend behaviours section, we have the optimal launch time. We can tell you the best time to launch that trend in the collection. In the end, there is more sell-through and less waste. For me, trend forecasting has nothing to do with changing the trends and changing the creative process. It is just making sure that in the end you are not producing too much or producing things that nobody is going to buy. Because the fashion industry is so polluting as it is. And if there is any way to reduce that, then I do not see why you would not go for it."

Participant 10 stated: "You can be overwhelmed by the amount of information out there, especially today. There is just so much information out there and it takes hours and hours of work. We are not even paid enough to cover the amount of time needed. I would love to partner with an AI that would bring information to me in a way that is highlighting things for me. It means having a more accurate read on what people want."

10 out of 13 participants classified the use of AI as useful to carry out base-level routine work. However, a large part of the interviewees stated that the creative part of fashion trend forecasting might disappear. The empirical data points towards the general openness of fashion trend forecasters to innovation, but their definition of the word varies.

Participant 2 stated: “I have a very diverse set of people working for me. Bringing together all these different strands of research allows me to create the whole story. Each project is completely tailored to the clients’ emotional needs and business profile. One thing I notice while doing these projects is that new and out-of-the-box ideas are a great head start for our clients. These ideas are successful without being based on historical data.”

Participant 8 stated: “The relation between fashion trend forecasting and artificial intelligence is problematic in my eyes. It is no longer trend forecasting if you apply AI technologies to it. You keep repeating yourself by using historical data. All of your information is based on something that has already happened. You do not rely on the creativity inside the forecasters’ brain.”

Participant 10 stated: “If we were to just have AI-powered forecasting, I am not sure that would induce a ton of creativity. Because to have innovation, you need to have risk-taking, and you cannot rely on just past and current data. You need something extra."

Participant 12 stated: “Having some hard facts in the reports is very useful. But completely letting this up to the AI systems will maybe not work so well. We are in an area where it is quite hard to differentiate what you are looking at. We have a very sophisticated and not so precise way of talking about fashion. This does not map well on to what a typical data analysis need. If you want to get meaning out of data, you need to make connections that are not necessarily visible in the data itself. You need to understand the context and where things are coming from.

Participant 13 stated: "It depends on which level you are forecasting. The technology is sophisticated enough to analyse macro trends as you have to look for messages that are repeated continuously on a global scale. The closer you get to the actual season, so the micro-trends, depend much more on the storytelling aspect. You have to follow what brands are doing and come up with aspirational messages. You need to create magic or a spark and the story needs to feel good. To achieve this, the forecaster needs to be fashion literate and creative."

Furthermore, the data suggests that not every fashion trend forecasting agency has the tools or knowledge to incorporate AI. This mostly has to do with path-dependency and correlated lock-in effects. The appropriate infrastructure is necessary to make AI systems work, alongside a profound understanding of the challenges that can come with implementing AI such as privacy and tracking regulations. The highly commercial fashion industry has faced budget cuts after the economic recession of 2008 and the COVID-19 pandemic will also have consequences.

> Participant 3 stated: “A fundamental problem comes with data sources. If we want to pull it off pretty well, we need to be a company like Google. You need to have the capacity to continuously reflect on your data. The whole notion of privacy concerns is getting more pushback, as we are looking at images people post on Instagram or other social media platforms.”

> Participant 6 stated: “I think my company would do with a sort of algorithm process and I do not think a lot of companies push that enough. I do not think my company does it either. And maybe we do not have the tools to do it or the knowledge. I know budget is a big thing. Especially for AI, not just in trend forecasting, but in the overall fashion industry. It is still niche in a way that it is not affordable. It is the general landscape of AI that people still think is kind of intimidating and expensive.”

> Participant 7 stated: “There is this fresh algorithm where you feed it a photo of someone and it connects to every image database in the world. Legally it can connect to Facebook's database and Instagram's database. It will then populate all of the images of that person and it tells you where they live and work, who their family members are, it just tells you everything. I think it is important that we have watchdogs in this space. I think the next layer of this will be, and what a lot of these tech cultural leaders are calling for, is some type of FDA for AI or technologies and algorithms in general."

Human-centred approach

The last sub-theme in this category is a human-centred approach. The findings from the interviews suggest that the scientific and intuitive aspects of fashion trend forecasting should be integrated, instead of being viewed as opposites. Every interview participant acknowledges that AI constitutes the future of fashion trend forecasting, even though it is hard to determine

the time frame in which these changes are likely to occur. The human element remains important for various reasons, such as enhancing the explainability of AI systems, tailoring the trend forecasts to the clients' attitude and uncovering the deeper meaning behind changing consumer sentiments and their effect on trends. The following excerpts demonstrate this.

> Participant 3 stated: "I think data can produce a lot of noise. It can produce a lot of confusion and there is always going to be a need for people who have the intuition, have the understanding to interpret that data. I am telling you the narrative behind why things are shifting and how long they are still shifts for. Fashion is such an emotional product. I mean, your clothing is how you tell other people who you are. It is how you build your self-conception. To leave it up to data and numbers alone is kind of missing the very emotional truth of when we get dressed."

> Participant 4 stated: "In my opinion, artificial intelligence and the role of the fashion trend forecaster are two things that should be positioned next to each other. Just adding A and B to get C takes all the fun out of the job. We always need people with taste and style who can turn things upside down and find ways to perfect them. Maybe the role of fashion trend forecasters should be determining the parameters of the algorithm, so we can produce outcomes that match with our feelings and how we want to communicate information."

> Participant 5 stated: "I think that artificial intelligence is very helpful because it can simplify our life. But I feel that human intuition is absolutely necessary. And also, the emotional part. We should consider what we would like, how we can change something and stay open-minded. When we make a mistake, it is a good thing, because we can learn from it. That is the value of the human position in innovation. And I am not against innovation of course, and from that point of view, I think that both things can really work very well together."

> Participant 6 stated: "It is all about figuring out the client attitude, to deepen that relationship. They come to us because they want us to layout the information in a way that specifies what they need to see. I think that the human-to-human element in this is important. I can know that this client loves numbers and the other client is challenging. We know that we have to be really careful with the images that we pack or the fact that

the client loves a video. I think what works best is when it is both humans and AI working together, rather than humans relying on AI. I also always love the human element of me seeing a weird product on Instagram and me growing up in Hong Kong and understanding the cultural context of Chinese consumers. I am bringing that to the table”

Participant 7 stated: "Accuracy will be better with time as AI gets more sophisticated. The fundamental challenge I feel is the fact that when you are doing data-driven forecasting, you are assuming that data can tell you the whole story. But fashion, some parts of it are very non-rational. There is no logical reason why suddenly something is popping up."

Participant 12 stated: "I think a lot of the high-end neural networks and machine learning processes, can get some surprising results. But it is hard to figure out where the results are coming from because of the complexities of all of these processes. If we want to find out what something means, we need to ask additional questions. So, you need expert people who have different spheres of knowledge, whereby you connect these things.”

The digital transformation of society has led to the existence of large streams of data. In the current era of information overload and the datafication of fashion, the task of finding useful information through all the noise is harder than ever. The fashion industry remains highly commercial. Large capital groups have capitalized on the growing importance of the fashion trend forecasting industry and contributed to the fragmentation of the level playing field. These capital groups have the financial resources and technological know-how to run data-led agencies. The landscape of fashion trend forecasting will most likely witness a growing divide between traditional and data-led trend agencies. Traditional trend agencies are not able to incorporate economies of scale, consequently, they must find a niche way of operating while remaining highly creative to distinguish themselves. After the economic recession of 2008, the budgets for fashion trend forecasting have shrunk. Merchandisers and buyers are looking to carefully curate their strategies based on tangible expert advice that is founded upon a data-driven approach. Data-led trend agencies have started to gradually incorporate AI systems to make sense of large amounts of data. These AI systems use annotated datasets to reduce the labour-intensive practices of traditional fashion trend forecasting. Most of the interviewees are

open-minded about using AI, but some of them are facing financial and knowledge constraints. The rise in open-sourced data and software tools, as well as the continuous development of AI technologies, increases the likeliness for traditional trend agencies to incorporate AI somewhere in the future. Nonetheless, the seeming paradox between creativity and technology is a point of debate. The difficulty in deciphering the context of societal issues, as well as displaying the tactile and emotional value of garments through AI systems calls for a human-centred approach. The overall sentiment of the interviews showed that fashion trend forecasters are extremely innovation-focused, but their definitions of the word fluctuate. Producing out-of-the-box ideas and synthesizing different aspects of research can be done in numerous ways. Therefore, AI systems should be complementary to the forecasters' touch, instead of replacing it. Moreover, datasets that are used to train AI systems can benefit greatly from annotations made by industry experts. Fashion trend forecasters should have the final say in constructing formal trend sources based on the clients' attitude, brand image, storytelling and close observation of the Zeitgeist. What can be concluded is that technological advancements will not take over the role of the forecaster but will only bolster their intuitive and creative processes. Making sure the algorithms are transparent and accountable should be on top of the trend forecasting agencies' list as the fashion industry already fears algocracy.

Persistence of female dominance

The third overarching theme is the persistence of female dominance. Gender is a social construction that continues to dominate the workplace. Both fashion and technology have historically been gendered. The constructed societal image of a sector and its workforce can have profound effects on achieving gender balance. Fashion trend forecasting remains female-dominated as it is observed as a feminized industry. It still holds structures and practices in place that reinforce the division of labour along gender lines. The forecasters' touch on developing fashion trend forecasts, the industry scale enlargement and the incorporation of new complicated technologies have consequences for the development of the gender balance in trend agencies. The identified sub-themes are: cultural conceptions, gender blindness and not a one-woman show.

Cultural conceptions

The first sub-theme that emerged from the gathered data is cultural conceptions. The interviewees all mentioned how forecasters' educational backgrounds already display a skewed male-female ratio as they are often related to the field of fashion. The choice of education is impacted by popular and influential belief systems that form the idea that women belong in the sphere of fashion. Generally, women are found to be more believable when it comes to fashion. Hence, why female fashion trend forecasters can tell a convincing story to the client. Cultural conceptions also limit access to opportunities when it comes to finding a job in either fashion trend forecasting or AI, as men and women continue to be impacted by gender stereotypes. Stereotypes form significant barriers to talented people wanting to go into both traditional and data-led fashion trend forecasting. Consequently, it also affects the long-term success of trend agencies. These issues are very much embedded in the everyday practices of work and changing them requires hard work.

> Participant 2 stated: “I think when we are talking about men and women, we also should consider their capacity to be persuasive and analytical. Technology, for example, draws more men in. My son is studying data science and my son-in-law is studying artificial intelligence, it is all men in their studies. The person who has to tell a convincing story to the client needs to be believable. I think that when it comes to fashion, women are generally easier to believe. The type of client will matter too, a CEO will expect different things than a designer.”

> Participant 3 stated: “What I am saying is that across fashion, and I went to fashion school, it is all women. I would say it is 10% men. I think that is just a cultural conception that women are into fashion, they are into aesthetics or presentation. I do not think it is necessarily true. I would say even at Fashion Snoops, we are probably 80% female and 20% men. I do think that it is changing. It really stems from just not a lot of men being in this space. I did not go to school with them either.”

> Participant 4: “I do know other men who are in the industry, but relatively speaking the ratio is skewed. I used to teach at Artemis, a styling academy in Amsterdam, where you could see that there were way more women than men.”

Participant 6 stated: “I think there were about five men that I can think of and we are a company of a hundred people. Maybe fashion is considered too girly or too fluffy for men to be interested in. I think this is a shame as it blocks off a lot of talent because men are self-conscious to go into more feminine industries. There is a lot of analytical and curious minds out there. Maybe because of the idea of toxic masculinity, they feel like they cannot get into an industry like this.”

Participant 7 stated: “I mean, this is an issue that we want to tackle as a company. We try to look at what is behind the gender gap in education. It is much harder in the computer science and AI fields. It is not at the level we want it to be. At the same time, we also do not want to push it to the other extreme. I think it is a very challenging position because many women are graduates in this field, but they do not end up staying in it. My team is roughly around 20% female and 80% male. But the reason why this is happening organically is much deeper than what we can know.”

Participant 9 stated: “For us at Heuritech, the marketing and the fashion teams are 100% girls, and then the product and data teams are 80% guys. It is so cliché, but I have worked in a couple of companies that all display this divide.”

Participant 10 stated: "I also think it has to do with having access to certain opportunities when it comes to working with and in AI. Hopefully, this will start to change as AI is an increasingly important tool and it is only as good as the people who program it. Women tend to think in a more circular way, it is a different way of approaching the world. Women were instrumental in creating AI but now it has been led to certain models of efficiency that are every embedded in masculine thinking."

Gender blindness

The second identified sub-theme is gender blindness. What stood out from the interviews is that 8 out of 13 participants talked about not making a distinction between male or female. The participants either only looked at the competencies of their employees or never paid attention to the distinction between male or female, to begin with. Only 1 participant spoke about active company policies around gender. Even though present-day society is becoming more aware of the issues surrounding gender in the workplace, it needs to be given more attention.

Participant I stated: "I just became aware of all these different issues relating to men and women in the workplace. I do not recall ever hearing it until it became, you know, a thing. I think pandora's box has been opened and I think people are more consciously aware of issues of representation. I only want people around me who are excited and who are good at what they do. It just so happens that I know more women in that category than I do men. I would not want to give the whole discussion credence. All our nine departments are run by women, it is not a conscious decision. It is just how it is."

Participant 4 stated: "There is still a lot of inequality between men and women. If men see an opportunity in a business like fashion trend forecasting they will display this sort of expansionist urge. This is a general thing that happens in every sector and I feel like we in Western Europe still live in a bubble when it comes to these issues. I think bringing these issues to light is the only way to change them. This will take a long time, we will not have a solution out of anywhere. It is always about giving it attention and actively battling it."

Participant 6 stated: "As trend forecasters, we spend a lot of time looking at social issues that are happening around the world. We are even writing about the fashion industry responding to it. We, as a company, actually have to practice those values. We formed a diversity and inclusion group last year where we are working very closely with HR. Education is a big part of it and we started an online resource platform for people to learn about different issues of representation. It is all about the values we are trying to champion now, you know, it is okay for men to do the softer work and equally for women to do the harder work."

Participant 9 stated: “I do not really see anything as male or female, you know? And I feel like even in school, there is not a difference in gender. So if there is not a difference in gender at school, then why is there a difference in companies?”

Not a one-woman show

The last sub-theme that emerged from an analysis of the data is not a one-woman show. All interview participants stated that they see value in collaborating inside a team, especially when this team is made up out of mixed genders. It provides the ability to widen research, understand clients better, incorporate different points of views and facilitates out-of-the-box ideas. Communication and collaboration between different teams emerged as important as well because it allows fashion trend forecasters to provide context and extract in-depth meaning from the gathered trend information.

> Participant 2 stated: “There are many women in this industry. I basically have to search for men. But I do see the value in using both men and women. Trend forecasting is all about collaborating inside a team. I notice that men and women look at things differently, they have different taste and different ways of doing research. Determining if something is valuable is often based on using morals, aesthetics, ethics and intuition. This requires different people. You can never bring this all together in one person, people really need to look at these things together. The question then is: who s the fashion trend forecaster?”

> Participant 3: "When people join my team I always try to emphasize: 'look, you do not have to know everything about all of these different topics. But let's try and build your core competency in one of them or two of them.' In that way, we can be really specific. So much of the job is investing in myself, my brain and my team. And the products we sell at Fashion Snoops are only as interesting as we are. There is definitely a push to get all the inspiration that we can in our normal lives."

> Participant 6: “Having project managers streamlined our processes. On the commercial side, we have Steve, who is the only male and he is a consultant. He basically provides a lot of information on the business side of things and he collaborated with the commercial team. His role is being the bridge between our advisory team and the commercial team.”

> Participant 8 stated: "I think there needs to be a balance between male and female energy. I always find it difficult to talk about the distinction between male and female.

For me, it is all about the energy a person has. Having too much female energy definitely shows in the work. But the whole idea of male and female is being questioned. Especially since there is a large spectrum of roles one can take up. I think if you only work with one type of energy in fashion trend forecasting, you can miss a large part of your target audience. We need to find a balance in people we invite to collaborate, do research and inspire. This balance not only applies to men and women, but also to combining technology and the physical. We need to figure out a way to meet in the middle."

Participant 9 stated: "We have several teams at Heuritech. What I really like about working here is that we have a couple of different teams that do completely different things, but all of us work together. Because the product is fashion tech, which feels like two opposing things. All of those different teams in the end have to talk to each other all the time to be able to get the product out right. Every Thursday morning, we have a company meeting where every team updates what they are working on. And I think we do that just because the tech changes so quickly all the time."

Participant 12 stated: "There are lots of topics that are really relevant, not all of them are numbers based. All different departments need to be able to have a joined-up conversation about these topics. Most of them are culture-based and focus on how people interact, what their values are and how these are shifting. It is all about trying to understand the mechanics behind the bigger picture. To figure this stuff out, you need to get as much information as you can from different areas and different points of views."

The changing nature of the fashion trend forecasting industry has led to a divide between traditional and data-led forecasting agencies. The use of AI in fashion trend forecasting is becoming more widespread due to the existence of large streams of data and the changing sentiments in the industry. However, AI needs to be complementary to the forecasters' touch. When asking interviewees about the influence of technological advancements on the gender balance in their trend agencies answers such as 'I never thought of this, what an interesting topic' or 'this caused me to reflect on my own position' were given. The interviewees from data-led fashion trend forecasting agencies all stated that the tech departments were dominated by males. The main issue of excluding women from AI is that male developers can

unconsciously insert their implicit biases into its creation. Different stages of AI systems such as data sampling, algorithm selection, evaluation metrics and the annotation of datasets can be impacted by this. [185] Trend agencies must contextualize these issues and address the deeper layers behind them, to adjust the dominant structures that govern present-day workplaces. Furthermore, due to the influx of technology, more men came into the fashion trend forecasting industry. However, the biggest part is only responsible for working with and updating the AI systems, while they are not actively working as fashion trend forecasters. Fashion trend forecasting agencies are not consciously aware of the fact that the industry is still very much female-dominated and what kind of consequences this can have for attracting new talents. Gender blind managers play a huge role in this process. Being gender blind means that there is a lack of awareness about how men and women in the workplace are impacted by their different needs, roles and status in society. If fashion trend forecasting agencies fail to implement gender-blind programmes, policies and attitudes, they will maintain the status quo. As a result, the unequal structure of the gender balance will continue to exist.[186] Furthermore, biases are even harder to battle in 'majority-group' environments like tech departments in data-led trend agencies. The role of achieving gender balance is vital, but it often triggers emotional reactions from both men and women. If fashion trend agencies want to bring this topic to light, it is important to use 'gender bilingual' language. Managers need to actively contribute to educate their workforce on these topics and facilitate mentorships. Just looking at competencies when hiring staff will not lead to a gender-inclusive workplace. The interviews point out that achieving gender balance is essential for fashion trend forecasting agencies as mixing genders and working together leads to better outcomes, such as coming up with innovative ideas and connecting with the client on a deeper level. It is also important for different teams inside trend agencies to facilitate communication. Otherwise, workflows can be slowed down, decision-making will be complex and people will have fewer opportunities to develop knowledge in different areas. Both traditional and data-led forecasting agencies need to work on these issues as trend research needs to reflect the experiences and viewpoints of both men and women.

[185] JRC Science Hub Communities, "Women in Artificial Intelligence: mitigating the gender bias," https://ec.europa.eu/jrc/communities/en/community/humaint/news/women-artificial-intelligence-mitigating-gender-bias

[186] "Gender Blindness," European Institute for Gender Equality, accessed June 9, 2021, https://eige.europe.eu/thesaurus/terms/1157

Chapter 6: Concluding discussions

Conclusion

The fashion trend forecasting industry is essential to the global fashion system. Not many people are aware of the influence the industry holds on determining what is to be considered fashion. The industry has its origins in the nineteenth century and became professionalized as a reaction to the dissolution of Paris as the dictator of style. Fashion trend forecasting developed from a one-man operation to small- and medium-sized trend forecasting agencies which were often led by females. Gender stereotypes of the modern era contributed to providing women in fashion with the opportunity to develop meaningful careers, entrepreneurial skills and leadership positions that were not possible in many other sectors. Women were described as having 'the eye' for spotting trends and greater sensibility towards determining what is 'good taste'. Moreover, it was scientifically proven that they were less colour blind, as determining the right colour is a crucial part of producing fashion. The business of fashion trend forecasting has changed significantly due to the digital transformation of society. As a result, this thesis aimed to research if technological advancements have influenced the gender balance in the fashion trend forecasting industry.

The history of fashion trend forecasting starts in France, where the rise of haute couture led to the institutionalization of trend patterns. The 1920s marked the years in which so-called *stylistes* started the professionalization of trend reporting services in New York. After World War II, European trend forecasting agencies started to flourish. The 1970s and 1980s were considered dream decades for fashion trend forecasters in which influential forecasting agencies such as Trend Union by Lidewij Edelkoort and Nelly Rodi were established. The pace of the fashion industry increased with the offshoring of garment and textile production to the Global South starting from the 1970s. The subsequent advent of the information and communications revolution put further pressure on the industry. Both developments accompanied by significant budget cuts. Fashion trend forecasting originally worked with fashion trend development theories produced by Veblen and Simmel, who focused on the hierarchical structure of trends based on traditional class divides and social distinction. However, due to the fragmentation of society and the introduction of mass production and communication, these theories became less important. The increased pace of fashion communication led to consumers becoming more fashion-savvy and demanding. Popular culture became more accessible and the faster pace of living influenced the shaping of trends.

The birth of fast fashion made anticipating trends become a key factor for the success of a collection, as they come and go more quickly than before. The fashion industry's landscape has changed under the influence of digitalization. Consumers are becoming more important, and they demand more transparency and accountability from retailers and designers.

There is no formalised methodology when it comes to fashion trend forecasting. Trend forecasting is a business-to-business service that consists of observing and identifying trends. Moreover, predicting their evolution in the marketplace can reduce risk factors and maximise company sales. Every forecaster has a different way of conducting trend research that they continue to polish during their careers. Understanding the Zeitgeist is an essential part of forecasting as trend forecasters try to pinpoint the mentalities accompanying the general political, cultural or social climate. A lot of time is invested in absorbing the atmosphere or mood in various places around the world. The trend mechanism stimulates commerce as retailers and designers try to come up with trends to make new collections desirable, even though older collections are still functional. This process is called planned obsolescence. Fashion trend forecasters can be viewed as the gatekeepers of fashion as they guide the legitimisation process of which garments will end up on the market. Moreover, they try to redefine existing cultural meanings and detect trendsetters who are part of this process. Conducting trend research is, above all, an emotional process that occurs mostly on an intuitive level. Trend forecasters use their experience in the fashion field, which allows them to understand the language surrounding fashion and built a reputation. They legitimize themselves based on their tacit aesthetic knowledge. This type of knowledge is described in metaphors like 'gut instinct' that makes it harder to formally capture it. Fashion trend forecasting should be seen as both an art and a science. An analytical mindset is required to connect the dots between intuitive and scientific components. Trend research needs to be 'sold' to the client, hence why it is important to use language that can touch upon cognitive and emotional levels. Furthermore, it is important to lay out the information in an easily understandable manner for both creative and business teams. Fashion trend forecasters have significant knowledge of fashion, but mainly operate from a 'helicopter view' outside of the industry. This outsider perspective holds a significant amount of discursive power. As a result, trend forecasters can drive positive developments in the beginning phases of developing new collections. This is especially helpful in times where the fashion industry is receiving backlash on its triple bottom line.

In recent years, the fashion trend forecasting industry has witnessed a significant scale enlargement as companies started to realize the value of trend information. Tech companies such as IBM have picked up on the opportunities that cooperating with fashion trend

forecasting can bring. The collaboration between Watson and Australian designer Jason Grech proved to be a huge success during the Melbourne Spring Fashion Week in 2016. A highly popular 12-piece couture dress collection became featured on the Vogue website. Moreover, academic studies are developed that target trend analysis, signifying that it is becoming a valued position in companies far beyond the fashion industry alone. Within the fashion trend forecasting industry itself, the acquisition of independent trend forecasting agencies by large capital groups show how it has become big business. The attention for trend forecasting analysis has been facilitated by the change from printed trend information to online trend information. The number of online subscription-based trend services is increasing. The advantages of these new business models are the immediate global availability and the continuously updated content. Consequently, fashion trend forecasting is becoming integrated into daily work routines and product innovation processes.

The Fourth Industrial Revolution has allowed the fashion industry to use large streams of data that were not financially or technically feasible before. The mediatization of fashion has had a significant influence on people's daily lives. The methodologies of fashion trend forecasters have been extended as they can easily access subcultures through their smartphones by checking up on apps such as Instagram or TikTok. As a result, a new trend mechanism called 'digging up' has appeared. One of the most recent developments in the fashion trend forecasting industry is the gradual adoption of AI systems in the analysis of trends. Even though this process is still in its infancy, there certainly is optimism regarding its use. Merchandisers and buyers are increasingly seeking out the help of fashion trend forecasting agencies. Their world is already guided by using data, so providing them with tangible validation is necessary. AI systems provide a fast way of evaluating all fashion-related data in real-time, while also generating an in-depth understanding of how the market has been responding from a long-term perspective. Moreover, AI can make the labour-intensive, time-consuming practices of traditional fashion trend forecasting more efficient through web crawling various social media platforms. The potential and ability to incorporate AI lies with fashion trend forecasting agencies that possess the necessary financial resources and technological know-how. Likewise, path-dependency and associated lock-in effects significantly influence the organisational and managerial features of trend agencies.

Nonetheless, planning the future of fashion will never be an exact science. AI systems are regarded unsuitable for some qualities of fashion, such as tactile and emotional values. Consumers are looking for out-of-the-box and surprising designs. There is a strong call for collaboration between humans and AI, as the forecasters' touch remains essential. The

forecaster has the emotional intelligence to figure out what 'bonds' the consumer to fashion, to determine the clients' attitude and adapt trend information to the brand image. Where the early days of fashion trend forecasting mainly revolved around product information, clients are now requesting culture-based information. This kind of information can be developed from adopting an empathetic, human-centric perspective that looks at social, environmental and political issues. Big shifts in societal attitudes are hard for AI systems to pick up on. The same holds for recognizing intricate style and design details. Data can produce a lot of noise and confusion, there is always going to be a need for people who have the intuition and knowledge to interpret that data. Fashion trend forecasters are the ones who can tell the narrative behind why things are shifting. The focus should thus be on how to best combine AI systems with the skills of fashion trend forecasters. When combining AI with human expertise, forecasting errors can be reduced up to 50%. As a result, the fashion trend forecasting industry will witness the emergence of a new wave of fashion trend forecasters who use data but are not replaced by it.

Reviewing the fashion trend forecasting industry from a historical perspective points towards the dominance of female fashion trend forecasters. Its origins can be traced back to gender stereotypes of the modern era. Gender stereotypes are preconceived social and cultural ideas that assign certain characteristics and roles to men and women. Prominent fashion trend forecasters such as Lidewij Edelkoort and Nelly Rodi have set the tone for the industry since the 1980s. Since then, not much has changed when it comes to the gender balance in fashion trend forecasting. Trend forecasters are mostly female as they are expected to have profound experience in the fashion field and frequently enjoyed an educational background in design or marketing. The fashion industry is regarded as a feminized industry that thrives on gendered skills and attributes. Fashion trend forecasting has structures and practices in place that reinforce the traditional division of labour along gender lines. The large data-led trend forecasting agencies show how there is a gendered divide between the fashion and marketing teams on one side and the data teams on the other side. Moreover, the owners of large data-led trend agencies are often men. The nature of the fashion trend forecasting industry is subject to change due to technological advancements. Data-led fashion trend agencies demand a variety of different skill sets. Men have come into the industry and manifested themselves in the tech departments. Even though they are responsible for developing and checking up on AI systems, they have not become the actual trend forecasters. Underlying sociocultural factors, gender stereotypes and implicit biases shape the access to symbolic and explicit resources that pose challenges to women wanting to go into AI teams. The main issue with excluding women from data teams in trend agencies is male developers can unconsciously insert their implicit biases

into its creation. Both men and women are needed to extract meaning out of trend research and connect the dots from multiple viewpoints. Understanding data can be a difficult task, especially in the current landscape of information overload. It is therefore essential to keep an eye on the gender balance in traditional and data-led forecasting agencies. Fashion trend forecasting agencies are not consciously aware of the fact that having a non-gender balanced workforce can have consequences for conducting trend research and attracting new talent. Mixing genders and collaborating between different teams can lead to better outcomes than working in silos. There is a strong business case for incorporating both genders in trend research as it can boost financial performance, increases the ability to attract talent, contributes to penetrating untapped markets and allows for connecting with a wider pool of clients. Observing the many different layers of society in the globalized world of fashion requires diverse teams who operate from different research areas and locations. Furthermore, attracting people who represent the talent and markets of the future, regardless of their gender, can bring unconventional ideas forward.

The fashion trend forecasting industry has changed a lot over the past 40 years. It will most likely witness a growing divide between traditional and data-led fashion trend forecasting agencies in the future. The balance between minds and machines will vary significantly among various fashion trend agencies, as they are the ones who need to determine whether they want to go with the flow of the industry or focus on a niche segment. It remains unclear within which time frame AI will become widely used. Traditional fashion trend forecasting agencies can continue to capitalize on their historical legacies, built on their capital derived from the fashion field and use anthropological frameworks. Data-led forecasting agencies will be subject to the continuous development of AI systems. As time goes by higher accuracy rates, lower financial investments and increased attention for transparency and accountability will become more widespread. Moreover, the opportunities, resources and career paths available for men and women, as well as the types of barriers constraining them, are still impacted by their gender. If fashion trend forecasting agencies want to address these topics they will need to use ‘gender bilingual’ language. This means that understanding the differences between men and women should be decoupled from gender stereotypes, as using words that reflect feminine or masculine norms can unconsciously turn people off. Consequently, fashion trend forecasting agencies need to actively contribute to educating their workforce on these issues, as well as providing mentors and role models. Incorporating different points of views in trend research is key, which can be achieved through creating equitable and gender-inclusive workplaces. If fashion trend forecasting agencies fail to implement gender-blind programmes, policies and attitudes, they

will maintain the status quo. If the fashion trend forecasting industry is willing to pay more attention to its gender related problems, these improvements might flow over to the fashion industry as a whole.

Limitations of the research

The main limitations of this research are that the results will be hard to generalize due to the small sample size and the lack of inter-coder reliability in the interpretation of the collected empirical data. This thesis aimed to consider credibility, confirmability, dependability, and transferability as much as possible, but it remains complicated when the primary data source is semi-structured interviews. The data collection in this thesis is founded upon the constructivist research paradigm whereby knowledge is a social construction, which is believed to be created in the interaction between the researcher and its participants. It is extremely difficult to remain unbiased when conducting interviews, being self-reflexive about what was talked about with the participants aimed to shine some light on the researchers' role in the production of knowledge. Moreover, the research was limited in its geographical scope, as 12 out of 13 participants were based in Europe. It would be interesting to expand the research to other countries to assess how their fashion trend forecasting practices differ and what the status of their gender balance is. Another limitation is the male-female binary terminology, as not everyone identifies as male or female. The framing of the gender balance narrative in these terms continues to oppose women and men. It is important to consider that women and men often differ more within gender than across gender.

Suggestions for future research

I concluded from the academic literature and the findings of the study, that the fashion trend forecasting industry in Europe is still female dominated. I have realised through this study that the fashion trend forecasting industry is an interesting, but complex sector. Certain issues need to be subjected to deeper investigation to develop a comprehensive model for the future of fashion trend forecasting and its gender balance. A pressing question remains whether the fashion trend forecasting industry has the appropriate infrastructure and financial resources to support the incorporation of AI systems. Due to COVID-19, the world was forced to get into virtual and digital solutions. There has been a digital transformation of the fashion industry, fashion trend forecasting is being more talked about and the fashion tech space in general is

getting bigger. Many new digital brands are popping up which are using artificial intelligence, with the new generation of digital natives leading the way. A proposed way forward is establishing successful collaboration within the fashion industry and with other sectors, as fashion trend forecasting itself already has a multidisciplinary nature. One of the main challenges will be to successfully incorporate AI systems, also in the smaller trend forecasting agencies, while staying true to new creative fashion trend inventions. It would be a missed opportunity to not take advantage of the efficiency of AI systems, especially since these technologies constitute the future of work in many sectors of the global economy. Research should be done on how to establish these collaborations and make them feasible within the fashion industry's budget.

Further research should also be conducted around cultural conceptions in the workplace and how to battle the related issues. Due to the scope of this thesis, analysing the gender balance has been done using the male-female binary terminology. It is important, however, to employ an intersectional lens. Researching gender should also focus on other factors such as socioeconomic status, age, sexual orientation and ethnicity. Particularly since a lot of companies are still dominated by the white upper class and a larger percent of the workforce now identifies as gender nonconforming people. Lastly, only 5 out of 13 interviewees were men. Getting more profound insights on male's motivation to go to this industry can shine light on the problems behind the gender balance.

Bibliography

AAUW. "Solving the equation: The Variables for Women's Success in Engineering and Computing." Accessed May 4, 2021. https://ww3.aauw.org/research/solving-theequation/

Aaltonen, Mika and Theodor Barth. "How Do We Make Sense of the Future? An Analysis of Futures Research Methodology – V2.0." *Journal of Futures Studies* 9, No.4 (2005): 45-60.

Adegeest, Nienke. "The Dynamics of Fashion Trend Forecasting." MSc diss., Amsterdam Fashion Institute, 2016.

Advisory Committee on Equal Opportunities for Women and Men. "Towards a Stereotype-Free European Union: Opinion on Combatting Gender Stereotypes." Accessed May 8, 2021. https://ravnopravnost.gov.hr/UserDocsImages/dkumenti/Advisory/Gender%20stereoty pes%20Oinion%20final.pdf

AI Now Institute. "Discriminating Systems: Gender, Race and Power in AI." Accessed May 7, 2021, https://ainowinstitute.org/discriminatingsystems.html

Alan Turing Institute. "Women data science and AI." Accessed May 7, 2021. https://www.turing.ac.uk/research/research-projects/women-data-science-and-ai

Alan Turing Institute. ""Where are the women? Mapping the gender job gap in AI."Accessed May 6, 2021. https://www.turing.ac.uk/news/where-are-women-mapping-gender-job-gap-ai

Appletizer. "Fashion Snoops." Accessed June 13, 2021. https://www.appletizer.nl/nl/online-trend-services/fashion-snoops/

Australian Government and Workplace Gender Equality Agency. "Future of work: where technology and work intersect." Accessed June 1, 2021. https://www.wgea.gov.au/publications/future-of-work-technology-and-work

Ballmer, Amy and Jennifer Tobias. "Trend forecasting: Collecting the history of the future." *ALJ* 42, No.1 (2017): 19-25.

Beheshti-Kashi, Samaneh, Michael Lütjen and Klaus-Dieter Thorben. "Social Media Analytics for Decision Support in Fashion Buying Processes." In *Artificial Intelligence for Fashion Industry in the Big Data Era*, edited by Sébastien Thomassey and Xianyi Zeng, 71-97. Singapore: Springer Nature Pte Ltd, 2018.

Boeije, Hennie R. *Analysis in Qualitative Research*. Thousand Oaks: Sage Publications, 2011.

Black, Sandy. "Sustainability and Digitalization." In *The End of Fashion: Clothing and Dress in the Age of Globalization*, edited by Adam Geczy and Vicki Karaminas, 113-132. London: Bloomsbury Visual Arts, 2019.

Blaszczyk, Regina Lee, ed. *Producing Fashion: Commerce, Culture, and Consumers*. Philadelphia: University of Pennsylvania Press, 2008.

Blaszczyk, Regina Lee and Ben Wubs. *The Fashion Forecasters: A Hidden History of Color and Trend Prediction*. London: Bloomsbury, 2018.

Bloomsbury Collections. "Jenny Lantz." Accessed November 28, 2020. https://www-blooms bury-com.eur.idm.oclc.org/author/jenny-lantz

Bloomsbury Collections. "Fashion Trends: Analysis and Forecasting." Accessed December 4, 2020. https://www-bloomsbury-com.eur.idm.oclc.org/uk/fashion-trends-9781847882936/

Bloomsburry Collections. "The Fashion Forecasters." Accessed November 27, 2020, https://www-bloomsburycollections-com.eur.idm.oclc.org/book/the-fashion-forecasters-a-hidden-history-of-color-and-trend-prediction/

Boston Consulting Group. ""The rise of the AI-powered company in the postcrisis world." Accessed May 2, 2021, https://www.bcg.com/publications/2020/business-applications-artificial-intelligence-post-covid
Bradley, Quinn. *Fashion Futures*. New York: Merrell, 2012.
Brannon, Evelyn L. *Fashion Forecasting*. New York: Fairchild Publications, 2005.
Cassidy, Tracy Diane. "Consumer Colour and Style Preferences: a new approach to tackling the waste conundrum." In *Eco-Friendly and Fair: Fast Fashion and Consumer Behaviour*, edited by Heuer, Mark and Carolin Becker-Leifhold, 83-92. Oxon: Routledge, 2018.
Cassidy, Tracy Diane. "Sustainable Colour Forecasting: The benefits of creating a better colour trend forecasting system for consumers, the fashion industry and the environment." In *Sustainability in Fashion and Textiles: Values, Design, Production and Consumption*, edited by Miguel Angel Gardetti and Ana Laura Torres, 111-125. London: Greenleaf Publishing, 2013.
CEPS Task Force. ""Artificial Intelligence: Ethics, governance and policy challenges." Accessed May 2, 2021. https://www.ceps.eu/ceps-publications/artificial-intelligence-ethics-governance-and-policy-challenges/
Cornell University. "StreetStyle: Exploring world-wide clothing styles from millions of photos." Accessed December 22, 2020. https://arxiv.org/abs/1706.01869
Cornell University. "Using Artificial Intelligence to Analyze Fashion Trends." Accessed May 3, 2021. https://arxiv.org/abs/2005.00986
Dahlström, Sofia. "Colour Forecasting and its managerial implications." MSc diss., The Swedisch School of Textiles, 2021.
De Wet, A. "Investigating Fashion Forecasting Approaches in South Africa: Proposed Way Forward." MSc diss., University of Johannesburg, 2008.
DuBreuil, Mikayla and Sheng Lu. "Traditional vs. big-data fashion trend forecasting: an examination using WGSN and EDITED." *International Journal of Fashion Design, Technology and Education* 13, No. 1 (2020): 1-10.
Entwistle, Joanne. *The Aesthetic Economy of Fashion: Markets and Value in Clothing and Modelling*. Oxford: Berg, 2009.
Entwistle, Joanne. "The Aesthetic Economy: The production of value in the field of fashion modelling." *Journal of Consumer Culture* 2, No.3 (2002): 317-339.
Eundeok, Kim, Ann Marie Fiore and Hyejeong Kim. *Fashion trends: analysis and forecasting*. London: Bloomsbury, 2013.
European Institute for Gender Equality. "Gender Blindness." Accessed June 9, 2021. https://eige.europe.eu/thesaurus/terms/1157
Fashion Snoops. "Corporate Overview." Accessed June 13, 2021. http://www.fashionsnoops. com/company.aspx
Fivush, Robyn. Speaking silence: The social construction of silence in autobiographical and cultural narratives." *Memory* 18, No. 2 (2010): 88-98.
Forbes. "Bridging the gender gap in AI." Accessed May 7, 2021. https://www.forbes.com/sites/falonfatemi/2020/02/17/bridging-the-gender-gap-in-ai/?sh=1678b4165ee8
Francke, Ann. *Create a gender-balanced workplace*. London: Penguin Books Ltd, 2019.
Friedman, Walter A. and Geoffrey Jones. "Creative Industries in History." *The Business History Review* 85, No. 2 (2011): 237-244.
Gallate, J. and S. Keen. "Intuition." In *Encyclopedia of Creativity*, edited by M. Runco and S. Pritzker, 683-688. London: Academic Press, 2011.
Giertz-Mårtenson, I. "Looking into the Future: A Study of Trend Analysis in the Fashion

Industry." Master diss., Stockholm University, 2006.
Glaser, Barney G. and Anselm L. Strauss. *Discovery of Grounded Theory: Strategies for Qualitative Research*. London: Routledge, 2000.
Glossy. "Data is the what, people are the why': How AI is changing trend forecasting." Accessed February 17, 2021, https://www.glossy.co/evolution-of-luxury/data-is-the-what-people-are-the-why-how-ai-is-changing-trend-forecasting/
Godart, Frédéric. "Reviews." Review of *The trendmakers: Behind the Scenes of the Global Fashion Industry*, by Jenny Lantz. *Contemporary Sociology* 46, No.6, 2017.
Goncu-Berk, Godze. "Fashion Trends." In *Bibliographical Guides*. London: Bloomsbury Academic, 2015. DOI: 10.5040/9781474280655-BIBART12001-ED
Guba, E.G. and Y.S. Lincoln. "Competing paradigms in qualitative research." In *Handbook of Qualitative research*, edited by N.K Denzin and Y.S. Lincoln, 105-117. Thousand Oaks: Sage Publications, 1994.
Harvard Business Review. "Gender at Work Is Not a Women's Issue." Accessed June 15, 2021. https://hbr.org/2015/11/gender-at-work-is-not-a-womens-issue
Harvard Business Review. "Gender Balance Is Hard, but It's Not Complicated." Accessed June 15, 2021, https://hbr.org/2014/10/gender-balance-is-hard-but-its-not-complicated
Harvard Business Review. "Gender Initiatives Are Culture Change Initiatives." Accessed June 15, 2021. https://hbr.org/2015/10/gender-initiatives-are-culture-change-initiatives
Harvard Business Review. "How CEOs Can Put Gender Balance on the Agenda at Their Companies." Accessed June 15, 2021. https://hbr.org/2016/11/how-ceos-can-put-gender-balance-on-the-agenda-at-their-companies
Harvard Business Review. "How to Get More Men to Take Gender Balance Seriously." Accessed June 15, 2021. https://hbr.org/2019/11/how-to-get-more-men-to-take-gender-balance-seriously
Heuritech. "How heuritech forecasts fashion trends thanks to AI." Accessed February 24, 2021. https://www.heuritech.com/blog/articles/how-heuritech-forecasts-fashion-trends-thanks-to-artificial-intelligence/
Heuritech. "Trend forecasting: fashion's way forward." Accessed November 25, 2020. https://www.heuritech.com/trend-forecasting-fashion-ai/
Holstein, James A. and Jaber F. Gubrium. "Active Interviewing." In *Qualitative Research Theory, Method and Practice*, edited by D. Silvermann, 105-121. London: Sage Publications, 1997.
High-Level Expert Group on Artificial Intelligence. "A definition of AI: Main Capabilities and Disciplines." Accessed May 2, 2021. https://digital-strategy.ec.europa.eu/en/librar y/definition-artificial-intelligence-main-capabilities-and-scientific-disciplines
IBM. "JASONGRECH." Accessed May 22, 2021. https://www.ibm.com/case-studies/jason-grech
Idacavage, Sara. "Copying French Couture for American Consumers." In *Berg Encyclopedia of World Dress and Fashion: The United States and Canada*, edited by Phyllis G. Tortora. Oxford: Bloomsbury Academic, 2010. DOI: 10.2752/BEWDF/EDch031420
Jackson, Tim and David Shaw. *The Fashion Handbook*. London: Routledge, 2006.
JRC Science Hub Communities. "Women in Artificial Intelligence: mitigating the gender bias." Accessed May 4, 2021. https://ec.europa.eu/jrc/communities/en/community/humaint/news/women-artificial-intelligence-mitigating-gender-bias
King, Julie. "Colour forecasting: an investigation into how its development and use impacts on accuracy." MSc diss., University of the Arts London, 2011.

Lantz, Jenny. *The trendmakers: behind the scenes of the global fashion industry*. New York: Bloomsbury Academic, 2016.
Larsen, Camilla Grindheim. "Digital turn in fashion trend forecasting: An explorative study of artificial intelligence, media platforms, and media users to understand changes in fashion trend forecasting in the digital age." Master diss., University of Oslo, 2020.
Lemons, Mary A. and Monica Parzinger. "Gender Schemas: A Cognitive Explanation of Discrimination of Women in Technology." *J Bus Psychol* 22 (2007): 91-98.
Liskin-Gasparro, Judith E. "MLJ Reviews." Review of *Introduction to Research Methods in Education*, by Keith F. Punch. *The Modern Language Journal* 95, 2011.
Luce, Leanne. *Artificial Intelligence for Fashion: How AI is Revolutionizing the Fashion Industry*. New York: Apress, 2018.
Kevin Matzen. "My Story." Accessed May 1, 2021. http://kmatzen.com
Kawamura, Yuniya. *Fashion-ology: An Introduction to Fashion Studies*. Oxford: Berg Publishers, 2004.
Mackinney-Valentin, Maria. "Trends." In *Berg Encyclopedia of World Dress and Fashion: Global Perspectives*, edited by Joanne B. Eicher and Phyllis G. Tortora, 175-177. Oxford: Berg, 2010.
Marr, Bernard. ""The Gender Diversity Crisis In Artificial Intelligence And Data Science – And How To Tackle It." Accessed May 6, 2021. https://www.linkedin.com/pulse/gender-diversity-crisis-artificial-intelligence-data-science-marr/
Medium. "Why trends are your friend." Accessed May 2, 2021. https://medium.com/fashion-act-now/why-trends-are-your-friend-781b718c2715
McAfee, Andrew and Erik Brynjolfsson. *Machine, Platform, Crowd: Harnessing our Digital Future*. 2017
Merell Publishing. "Fashion Futures." Accessed December 4, 2020. http://www.merrellpublishers.com/9781858945637
Molloy, Maureen and Wendy Larne. "Who needs cultural intermediaries indeed?" *Journal of Cultural Economy* 3, No.3 (2010): 361-377.
National Center for Women & Information Technology. "Women in Tech: The Facts // See what's changed and what hasn't." Accessed May 8, 2021. https://ncwit.org/resource/thefacts/
Nicolson, Paula. *Gender, Power and Organization: A psychological perspective on life at work*. London: Routledge, 2015.
OECD. "Advancing Gender Balance in the Workfoce: A Collective Responsiblity." Accessed June 8, 2021. www.oecd.org/tax/forum-on-tax-administration/publications-and-products/advancing-gender-balance-in-the- workforce-a-collective-responsibility.htm
Perna, Rita. *Forecasting: A mystery or a method?* New York: Fairchild Publications, 1987.
Petermann, Elisabeth. "Archaeology of the Future: Reconsidering the Place and Nature of Trend forecasting in Design Discourse." Phd diss., University of Applied Arts Vienna, 2014.
Prolific London. "Why we need to restore the gender balance in AI." Accessed May 7, 2021. https://www.prolificlondon.co.uk/features/2019/05/why-we-need-restore-gender-balance-ai
Public Technology. "Does data science have a dangerous gender gap?" Accessed June 5, 2021. https://www.publictechnology.net/articles/features/does-data-science-have-dangerous-gender-gap
Quinn, Bradley. *Fashion Futures*. London: Merrell Publishers Limited, 2012.
Rickman, Tracy Anna and Robert M. Cozensa. ""The changing digital dynamics of

multichannel marketing: The feasibility of the weblog: text mining approach for fast fashion trending." *Journal of Fashion Marketing and Management* 11, No.4 (2007): 604-621.
Rocamora, Agnės. "Mediatization and Digital Media in the Field of Fashion." *Fashion Theory* 21, No.5 (2016): 505-522.
Ruane, Christiane. "Spreading the Word: The Development of the Russian Fashion Press." In *Producing Fashion: Commerce, Culture, and Consumers*, edited by Regina Lee Blaszyck, 21-41. Philadelphia: University of Pennsylvania Press, 2008.
Saldaña, Johnny. *The Coding Manual for Qualitative Researchers*. Thousand Oaks: Sage Publications, 2009.
Shi, Mengyun et al. "The exploration of artificial intelligence application in fashion trend forecasting." *Textile Research Journal* (2021): 1-30.
Smith, Donna. R.A. "Book Review of Fashion Forecasting." Review of Fashion Forecasting, by Evelyn L. Brannon. *Journal of Retailing and Consumer Services* 9, No. 6, 2002.
Stokes, Allyson. "Fashioning Gender: The Gendered Organization of Cultural Work." *Social Currents* 4, No. 6 (2017): 518-534.
Taylor & Francis online. "H&M – documenting the story of one of the world's largest fashion retailers." Accessed November 28, 2020. https://www-tandfonline-com.eur.idm.oclc.org/doi/full/10.1080/00076791.2011.617203?scroll=top&needAccess=true
TED. "How humans and AI can work together to create better business." Accessed May 11, 2021. https://www.ted.com/talks/sylvain_duranton_how_humans_and_ai_can_work_together_to_create_better_businesses/transcript?language=en#t-400745
Tham, Mathilda. "Lucky people forecast: a systemic futures perspective on fashion and sustainability." Phd diss., University of London, 2008.
The Business of Fashion. "Is Fashion Ready for the AI Revolution?" Accessed February 23, 2021. https://www.businessoffashion.com/articles/technology/is-fashion-ready-for-the-ai-revolution
The Conversation. "AI is in danger of becoming too male." Accessed April 7, 2021. https://theconversation.com/ai-is-in-danger-of-becoming-too-male-new-research-121229
The Economic Times India. "Fashion from Seoul and Tokyo would permeate across the world: Dan Cotton." Accessed February 23, 2021. https://economictimes.indiatimes.com/opinion/interviews/fashion-from-seoul-and-tokyo-would-permeate-across-the-world-dan-cotton/articleshow/41599597.cms?from=mdr
The Interline. "Can Fashion Tame Data, Rather Than Being Ruled By It?" Accessed April 7, 2021, https://www.theinterline.com/01/2021/can-fashion-tame-data-rather-than-being-ruled-by-it/
The Wall Street Journal. "Next: Bikinis That Stick to Skin And Jackets With a Jolt." Accessed December 4, 2020, https://www.wsj.com/articles/SB10001424052702303404704577307723544924612
Tucholke, Kara and Pauline Frohm. "The trend forecasting paradox? An exploratory study of the compatibility of trend forecasting and sustainability." Phd diss., Swedish School of Textiles, 2020.
Tuite, Rebecca C. ""Book Reviews." Review of *The Fashion Forecasters: A Hidden History of Color and Trend Prediction*, by Regina Lee Blaszyck and Ben Wubs. *Journal of Design History* 32, No. 3, 2019.
T-Fashion. "See What's Next." Accessed February 17, 2021. https://tfashion.ai
University of Cambridge. "AI and Gender: Four Proposals for Future Research." Accessed May 4, 2021. https://www.repository.cam.ac.uk/handle/1810/294360
Vieria Lopes, Maria. "The discourse of fashion change: Trend forecasting in the fashion

industry.” *Fashion, Style & Popular Culture* 6, No.3 (2019): 333-349.
Wheadon, Mandy and Nathalie Duval-Couetil. “Token entrepreneurs: a review of gender, capital, and context in technology entrepreneurship.” *Entrepreneurship & Regional Development*, 31, No. 3 (2019): 308-336.
Women’s Wear Daily. “Fashion Snoops' Heart-Led Online Program Aims to Fuel Creativity.” Accessed June 13, 2021. https://wwd.com/fashion-news/fashion-features/fashion-snoops-heart -led-online-program-aims-to-fue l-creativity-1203688769/

Appendix A Semi-structured interview guide

Part I: Introductory questions

Could you tell me something about yourself?

- Who are you?
- What is your job title?
- What is your area of responsibility?

When did you start working at company X and why?

Can you tell me more about your work experience within fashion trend forecasting?

Could you describe your forecasting method to me?

- What are the major influential factors?
- Where do you gain your main sources of inspiration?
- How accurate do you think fashion trend forecasts are?

What does your output look like (e.g. trend reports, consultancy, seminars, etc)?

What kind of clients have you worked with (retailers, designers, manufacturers, etc)?

Part II: Questions on the gender balance in interviewee's company

How many people work in the team with you and how are the roles divided?

How would you describe the male-female ratio in company X?

Has this changed over time?

In your opinion, is being a fashion trend forecaster a feminine profession? (Or is it perceived as a feminine profession?)

What are some of the biggest changes you have encountered while working in the fashion trend forecasting field?

- The method of fashion trend forecasting
- Agency size
- Agency services
- The amount of males and females

Part III: Questions targeting the use of AI in the interviewee's company and the relationship with the gender balance

How do you see digital and online services impacting company X?

How do you differ from its competitors and stay ahead?

What comes to your mind when thinking about the role of artificial intelligence in the fashion trend forecasting industry?

How do you think AI will influence the profession of forecasting?

Would you be open to incorporate such technologies in your work process?

Do you see any challenges working with artificial intelligence?

Are you subject to specific constraints, e.g. financial/knowledge, which might prevent you from incorporating AI techniques?

In your opinion, does the introduction of AI influence the number of men involved in fashion trend forecasting? (growth, decline, equal)

What is your vision for the future of forecasting?

Appendix B Table on interviewees

Name	Role	Country	Interview date	Duration
Anne Marie Commandeur	Director Stijlinstituut Amsterdam / Trend analyst	The Netherlands	April 6, 2021	71:02
Carrera Kurnik	Culture editor and consumer insights strategist at Fashion Snoops	United States	March 30, 2021	32:51
Dio Kurazawa	Co-founder at The Bear Scouts, Head of Sustainability and Head of Denim at WGSN	The Netherlands	March 29, 2021	53:12
Geraldine Wharry	Founder and Managing Director at Geraldine Wharry - Trend Atelier	United Kingdom	May 11, 2021	35:47
Jan Agelink	Owner of Buro Jantrendman	The Netherlands	April 1, 2021	36:35
Maria Janssen	Creative Director at Humanoid, Trend Director at Amazon Fashion EU, Creative Director at WGSN	The Netherlands	April 1, 2021	53:26
Mélanie Mollard	Fashion Editor and PR Officer at Heuritech	France	March 24, 2021	36:55
Ornella Bignami	Creative Director at Elementi Moda	Italy	April 9, 2021	50:21
Rachel Lee	Senior Researcher at Stylus	United Kingdom	April 3, 2021	50:04
Vikas Raykar	Senior Technical Staff Member and Manager at IBM AI Research for Supply Chain	India	April 9, 2021	49:12
Volker Ketteniss	Menswear Director at WGSN	Germany	April 30, 2021	42:04
Willem Schenk	Lecturer-researcher Fashion and Branding at AMFI, Medior Designer Creative Office de Bijenkorf, Executive Assistant to Lidewij Edelkoort	The Netherlands	April 2, 2021	50:29