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*Does Beauty Matter on the Labor Market? -
An Analysis of Stakeholder Behavior on Employees' Physical Appearance*

Dissertation

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DEDICATION

This work is dedicated to my parents, who have always supported my endeavors and let me become the person I am.

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Fabian Ulrich

OVERVIEW

OVERVIEW

TABLE OF CONTENTS	V
LIST OF TABLES	VII
LIST OF FIGURES.....	VIII
LIST OF ABBREVIATIONS	IX
1 INTRODUCTION	1
2 EMPLOYEE DISCRIMINATION BASED ON PHYSICAL APPEARANCE – A REVIEW OF THE LITERATURE	10
3 DOES ATTRACTIVENESS STILL MATTER IF PERFORMANCE COMES INTO PLAY? – AN ASSESSMENT OF THE ATTRACTIVENESS STEREOTYPE IN PROFESSIONAL SOCCER	41
4 DOES PHYSICAL APPEARANCE IMPACT COLLABORATIVE BEHAVIOR OF PEERS? – AN ANALYSIS OF A LABOR MARKET	68
5 CONCLUSION.....	91
REFERENCES	95
APPENDIX	123

TABLE OF CONTENTS

TABLE OF CONTENTS

LIST OF TABLES	VII
LIST OF FIGURES.....	VIII
LIST OF ABBREVIATIONS	IX
1 INTRODUCTION	1
1.1 BACKGROUND AND MOTIVATION.....	1
1.2 RESEARCH QUESTIONS AND THEORETICAL RELEVANCE	3
1.3 RESEARCH APPROACH AND DATA SETS.....	5
1.4 OUTLINE AND ABSTRACTS.....	7
1.4.1 Research Paper 1: Employee Discrimination based on Physical Appearance – A Review of the Literature.....	7
1.4.2 Research Paper 2: Does Attractiveness still Matter if Performance Comes into Play? – An Assessment of the Attractiveness Stereotype in Professional Soccer.....	8
1.4.3 Research Paper 3: Does Physical Appearance Impact Collaborative Behavior of Peers? – An Analysis of a Labor Market.....	8
2 EMPLOYEE DISCRIMINATION BASED ON PHYSICAL APPEARANCE – A REVIEW OF THE LITERATURE	10
2.1 INTRODUCTION.....	10
2.2 ASSESSMENTS OF PHYSICAL APPEARANCE.....	12
2.2.1 Measures of Facial Appearance.....	12
2.2.2 Measures of Body Gestalt	14
2.2.3 Measures of Ethnic Type.....	15
2.3 FORMS OF DISCRIMINATION IN LABOR MARKETS	16
2.3.1 Employer discrimination	16
2.3.2 Customer Discrimination.....	30
2.3.3 Co-worker Discrimination.....	35
2.4 CONCLUSION	37
3 DOES ATTRACTIVENESS STILL MATTER IF PERFORMANCE COMES INTO PLAY? – AN ASSESSMENT OF THE ATTRACTIVENESS STEREOTYPE IN PROFESSIONAL SOCCER	41
3.1 INTRODUCTION.....	41
3.2 THE SETUP OF THE PLAYER OF THE MONTH AWARD	44
3.3 THE PEER VOTING	46
3.3.1 Theoretical Considerations.....	46

TABLE OF CONTENTS

3.3.2	Empirical Model.....	50
3.3.3	Results	55
3.4	THE PUBLIC VOTING.....	57
3.4.1	Theoretical Considerations.....	57
3.4.2	Empirical Model.....	60
3.4.3	Results	61
3.5	GENERAL DISCUSSION.....	63
3.6	LIMITATIONS AND FURTHER RESEARCH.....	65
3.7	CONCLUSION	66
4	DOES PHYSICAL APPEARANCE IMPACT COLLABORATIVE BEHAVIOR OF PEERS? – AN ANALYSIS OF A LABOR MARKET	68
4.1	INTRODUCTION.....	68
4.2	THEORETICAL CONSIDERATIONS REGARDING APPEARANCE-RELATED COOPERATIVE BEHAVIOR IN THE BUNDESLIGA	70
4.2.1	State of Research Regarding Cooperative Behavior towards Attractive Co-workers	70
4.2.2	Impacts of Physical Appearance on Collaborative Behavior	73
4.3	METHODOLOGY AND EMPIRICAL MODEL.....	77
4.3.1	Methodology and Measurements	77
4.3.2	Empirical Model and Variables.....	80
4.4	RESULTS.....	84
4.5	DISCUSSION	87
4.6	LIMITATIONS AND FURTHER RESEARCH.....	89
4.7	CONCLUSION	90
5	CONCLUSION.....	91
5.1	OVERALL SUMMARY.....	91
5.2	RESEARCH CONTRIBUTION AND FUTURE DIRECTIONS	93
	REFERENCES.....	95
	APPENDIX	123

LIST OF TABLES

LIST OF TABLES

Table 3.01	Descriptive Statistics of the Peer Voting	54
Table 3.02	Probit Model of the Peer Voting.....	56
Table 3.03	Descriptive Statistics of the Public Voting.....	61
Table 3.04	Probit Model of the Public Voting.....	63
Table 4.01	Descriptive Statistics of Key Variables	83
Table 4.02	Physical Appearance as Determinant of Collaborative Behavior.....	85

LIST OF FIGURES

LIST OF FIGURES

Figure 1.1:	Structure of the Dissertation.....	9
Appendix Table 1:	Overview on attractiveness stereotype research in work-related settings ..	123
Appendix Figure 1:	Visitors in the German Bundesliga.....	126
Appendix Figure 2:	Sources of revenues of the Bundesliga.....	126
Appendix Figure 3:	Fußballer des Monats Online Example	127
Appendix Figure 4:	Fitzpatrick Skin Type Australian Government.....	128

LIST OF ABBREVIATIONS

LIST OF ABBREVIATIONS

BMI	Body Mass Index
cf.	compare (“conferre”)
CREMA	Center for Research in Economics, Management and the Arts
DFB	German Football/Soccer Association (“Deutscher Fußball-Bund”)
DFL	German Football/Soccer League (“Deutsche Fußball Liga”)
e.g.	for example (“exempli gratia”)
et al.	and others (“et alii”)
FE	Fixed effects
FIFA	International Federation of Association Football/Soccer
GSO	Goal scoring opportunity
i.e.	that is (“id est”)
Incl.	Including
ISBS	Institute for Sports, Business and Society
M	Mean
Max.	Maximum
Min.	Minimum
MLB	Major League Baseball
n	Sample Size
NBA	National Basketball Association
NFL	National Football League
NHL	National Hockey League
OLS	Ordinary Least Squares
p	p-value (probability)
p.	Page
POM	Player of the Month (German: Fußballer des Monats)
R ²	Coefficient of determination
RELTEAMPERF	Relative team performance
SD	Standard Deviation
TV	Television
US	The United States (short for United States of America)
WHR	Waist-to-hip-ratio

INTRODUCTION

1 INTRODUCTION

“What is beautiful is good, and who is good will soon be beautiful”

(Greek writer Sappho of Lesbos, about 600 b.c.)

It appears that there is an apparent connection between beauty, or rather attractiveness, and performance or even that attractive people are seen as more proficient by others. This dissertation will test this and therefore investigate the demeanor of others in face of attractive people, distinctively on labor markets.

1.1 BACKGROUND AND MOTIVATION

There seems to hold a simple but overarching principle in the world of human beings and animals: the physical appearance of a specimen defines its success. This seems true, in particular since certain characteristics of appearance hold out the prospect of special skills or superior performance. Numerous studies regarding all kinds of animal species have found that favorable physical attributes, e.g. large body size (e.g. Zahavi & Zahavi, 1998) or prominent colors (e.g. Petrie, Halliday, & Sanders, 1991) of skin or plumage (e.g. Andersson, 1982; Petrie, 1994) signal health (Hamilton & Zuk, 1982; von Schantz, , et al., 1999) as well as prospective potency (Thornhill & Gangestad, 1999) and ultimately increase the likelihood of a successful reproduction with many descendants (Andersson, 1982).¹ Thus, from a biological perspective particular characteristics of physical appearance of animals seem to indicate a higher performance potential resulting in benevolent treatment by others.

The same principle holds true for human beings.² Already in the early 1970s, Dion, Berscheid, & Walster (1972) discovered the *attractiveness stereotype*³, marking a milestone in

¹ Nonetheless, if conspecifics exhibiting these attributes really have actual superior performance capabilities justifying preferences for them, remains highly controversial in academic research: The *Good Genes Hypothesis* states that extraordinary ornaments are supposed to signal superior genetic preconditions, as potential mate candidates in the animal world can resist parasites better (Hamilton & Zuk, 1982) or can afford a *handicap* (Zahavi, 1975), e.g. of a long tail in the case of peacocks (Cronin, 1991). Nevertheless, the handicap in itself often prevents superior performance and may decrease survival probability (Moller & de Lope, 1994).

² As early as in our childhood we are accustomed that certain attributes of humans' physical appearance have certain connotations and serve a signal mechanism for certain character traits, for instance in fairytales: The indulgent yet hardworking Snow White, for instance, is described to be "as white as snow, and as red as blood, and her hair was as black as ebony" which is classified by the magic mirror to be attributes of high attractiveness: "My Queen, you are the fairest here so true. But Snow White is a thousand times more beautiful than you." With reference to Disney's Cinderella Etcoff (2000) points out that the 'good' Cinderella is blue-eyed while the evil stepsister and vicious stepmother are dark (p. 127). Ugliness on the other hand embodies, at least at first, fear, extortion and death in "The Beauty and the Beast".

³ Dion, Berscheid and Walster (1972) originally mentioned the *What is beautiful is good* effect, that later became the attractiveness stereotype.

INTRODUCTION

attractiveness research. They found that individuals deemed attractive are not only believed to be happier and to have more socially desirable personalities (see also Langlois, et al., 2000) by fellow human beings, but are also assumed to be more successful than less attractive peers. Later studies confirmed that other people associate attractive individuals with higher occupational success and status only based on their physical appearance (e.g. Cash, Gillen, & Burns, 1977). Moreover, attractive individuals are also found to be perceived more socially (Feingold, 1992) and intellectually competent (Eagly, et al., 1991; Langlois & Stephan, 1977) as well as to be more assertive (Eagly, et al., 1991) and capable (Hamermesh & Parker, 2005). So, attractive individuals seem to enjoy a higher social prestige⁴ and superior consideration.

This does also influence work related settings: Attractive individuals are, for example, considerably more likely to be employed (Roszell et al., 1989; Marlowe, Schneider, & Nelson, 1996; Biddle & Hamermesh, 1998; Lever et al., 2005; Ruffle & Shtudiner, 2010; López Bóo, Rossi, & Urzúa, 2013; Gehrsitz, 2014), are granted evidentially better chances for promotions (Mazur, Mazur, & Keating, 1984; Chung & Leung, 1988) and receive on average higher individual earnings (e.g., Frieze, Olson & Russell, 1991; Hamermesh & Biddle, 1994; Möbius & Rosenblat, 2006; Doorley & Sierminska, 2012). Thus, physically appealing employees seem also in labor market settings more capable than their less attractive peers.

Despite numerous conclusive findings proving that attractive individuals benefit considerably from their attractive appearance with regards to their career advancements on the labor market, the circumstances leading to increased work-related success of attractive people still stimulate scientific controversies in attractiveness research. In particular, the correlation between physical attractiveness and performance remains disputed. If performance advantages of attractive employees were valid, however, then attractive employees are more productive than their peers. Thus, they either possess greater capabilities directly influencing their productivity positively (Sørensen & Sonne-Holm, 1985; Harper, 2000) or attractive employees trigger an altered behavior of their stakeholders which leads indirectly to a higher individual productivity (Becker, 1971; Harper, 2000), e.g. by an increased propensity to buy of customers or a more collaborative behavior of co-workers.

Research investigating enhanced capabilities of attractive employees brought to light rather disillusioning results, however. Most investigations cannot confirm that more attractive

⁴ Elder (1969) finds the marriage mobility of women to be dependent on their physical attractiveness as opposed to their intelligence and academic aptitude. Udry and Eckland (1984) show similar results for women, yet the opposite for men. Umberson and Hughes (1987), for instance, show attractive individuals to have higher levels of happiness and satisfaction and a lower level of stress.

INTRODUCTION

employees have better professional skills than their less attractive peers (Möbius & Rosenblat, 2006; Rosar, Hagenah, & Klein, 2010; Deryugina & Shurchkov, 2013; Pareek & Zuckerman, 2011). Nevertheless, there are various examples proving physically attractive employees to be more effective, in particular involving personal interactions. Thus, a promising explanatory approach for increased work-related success of physically attractive employees can be indirect effects of physical appearance. For example, attractive employees have been found to receive apparently higher peer recognition (Hamermesh & Biddle, 1994; Mulford et al., 1998) and to be met with a higher degree of cooperativeness by fellow human beings (Mulford et al., 1998; Andreoni & Petrie, 2008). Customers, on the other hand, perceive attractive staff more trustworthy (Reingen & Kernan, 1993; Pareek & Zuckerman, 2011) and persuasive (Marwick, 1988).

Nevertheless, so far it remains widely unexplained under which circumstances the physical appearance of employees leads to actual behavioral changes of their stakeholders in labor markets, such as employers, customers and coworkers. With this dissertation, I intend to shed some light on this question. As a result, the center of this dissertation is to investigate which stakeholders under which circumstances on actual labor markets (as opposed to experimental research settings) are sensitive to physical appearance of employees and what the impact on their behavior is.

1.2 RESEARCH QUESTIONS AND THEORETICAL RELEVANCE

This overarching theme of the present dissertation is investigated along three separate analyses. In a first step, I provide a structured overview of the state of physical appearance research in labor market settings. I will then investigate in the second step the limitations of the attractiveness stereotype. To be more precise, I will examine whether peers and external stakeholders are still guided in their judgments and behavior by employees' physical attractiveness, even if employee performance contributions are transparent and accessible for the entire labor market. Finally, I examine in a third step whether co-workers are influenced by their colleagues' physical appearance with regards to collaborative behavior towards them. I investigate in particular whether co-workers are more likely to collaborate with attractive employees or whether the individual performance potential rather determines colleagues' willingness to cooperate. The corresponding research questions are:

INTRODUCTION

1. What is the current state of research with regards to the treatment of employees based on their physical appearance?
2. Does the attractiveness stereotype in labor markets prevail, even if individual performance is transparent?
3. Does the physical appearance of employees in real labor market settings determine the willingness for collaboration of their peers?

The first research question is relevant, as attractiveness research with regards to labor market stakeholders is fairly fragmented. This is true in terms of both, the measurement of employee attractiveness and with regards to the investigated employee stakeholder groups: First, against the backdrop that human attractiveness is subjective, abstract and difficult to define, there have evolved a variety of measurement methods assessing various appearance characteristics. Nevertheless, a comprehensible classification of which appearance features assessed by which measurement methods best account for human physical attractiveness, has not been provided. Second, research is also scattered with regards to the investigated employee stakeholder groups. Although Becker (1971) in his seminal contribution laid the cornerstone by stating that discrimination on labor markets may only originate from employer discrimination, co-worker prejudice or customer preference, comparisons regarding investigations across various employee stakeholder groups are scarce. Thus, the question remains unanswered which of these three labor market stakeholder groups are (mainly) responsible for differentiated treatment of employees based on their physical appearance.

By analyzing the behavior of two different employee stakeholder groups in a real-life labor market where performance is measurable and transparent, I intend to contribute to a better understanding of the second research question. It is important, because real-life research studies have so far fallen short answering whether individuals in labor markets rather ground their assessments of employees on their attractiveness or rather on their actual work-related performance, if transparently available. While there is broad agreement in academic research regarding the existence of an attractiveness stereotype effect (Dion, Berscheid & Walster, 1972) in labor markets, to the advantage of employees deemed physically attractive (Chung & Leung, 1988; Leigh & Susilo, 2009; Johnston, 2010; Gehrsitz, 2014), recent experimental studies (Andreoni & Petrie, 2008; Deryugina & Shurchkov, 2013) call the general applicability of the attractiveness stereotype into question. Their findings indicate that individuals provided with the possibility to reliably evaluate others' performance, rather base their judgments towards them on the actual performance of their counterparts', instead of grounding them on physical appearance along the attractiveness stereotype.

INTRODUCTION

The third research question has relevance, since the importance of employees' physical attractiveness for collaborative behavior among peers has so far only narrowly been assessed academically. While there have been various studies implying an increased tendency of individuals to collaborate with physically attractive teammates in experimental settings and one-off situations (Mulford et al., 1998; Andreoni & Petrie, 2008) as well as suggesting a preference for attractive individuals in working environments (Chung & Leung, 1988; Ruffle & Shtudiner 2010; López Bóo, Rossi, & Urzúa, 2013), an analysis of the impact of employees' physical attractiveness on peers' collaborative behavior has not yet taken place in a real-life working environment. Thus, the question remains unanswered whether colleagues when their own professional advancement is on stake, tend to cooperate with physically attractive peers rather than with ones that have recently demonstrated above average performance.

1.3 RESEARCH APPROACH AND DATA SETS

Despite all three research questions speak to the overarching theme of this dissertation, impact of employees' physical appearance on their stakeholders' behavior in real-life labor markets; they are sufficiently distinctive and exclusive to be investigated independently. Therefore, I will address the introduced research questions in three stand-alone research papers.

Within my first research paper, I provide an overview of various methods of assessing physical attractiveness in academic research. I also structure and categorize the relevant academic literature investigating appearance-related discrimination towards employees in work-related environments. Drawing on Becker (1971) the literature review focuses on employers, customers and co-workers as main employee stakeholders in labor markets and on facial attractiveness, body gestalt and ethic type as the most prominent characteristics of physical appearance causing significant effects for employees on labor markets (e.g., Harper, 2000). The comprehensive literature review takes into account more than 300 different research contributions that have been gathered applying the snowball technique (Greenhalgh & Peacock, 2005; Sayers, 2007; see also Hepplestone et al., 2011). Both parts of the review, the comparison of relevant attractiveness measures as well as the analysis of the impacts of discrimination by the three aforementioned main employee stakeholder groups, are intentionally conducted to provide a holistic image of the state of attractiveness research, first and foremost when it comes to various cultural perspectives. Despite the fact, that a large proportion of attractiveness research in the area of employee discrimination due to physical appearance has been conducted in Western societies, the paper also represents research investigating appearance-related employee discrimination in other cultures, e.g. in Asia, Africa and Latin America.

INTRODUCTION

For my second and third research paper, I compiled separate data sets and apply various statistical methods. These include, e.g. multivariate regression analyses (including both interaction effects and non-linear effects), probit models, pair-wise correlation analyses as well as statistical tests for assessing multicollinearity.

My second paper employs a rich data set containing both, individual performance data of all players in all games of the Bundesliga, Germany's top-tier soccer league, over a period of seven consecutive years as well as physical appearance data of all players in terms of their facial attractiveness, body gestalt and ethnic type. To be precise, having on hand 58,826⁵ performance observations, each calculated from 67 different performance variables, of all 1,363 players in all 2,142 games of the Bundesliga over the seasons between 2003/04 and 2009/10, I aggregated the data for the sake of the analysis to 20,810 player month performance observations ($n = 20,810$). The performance data was made available by Impire AG, the official data provider of the Bundesliga during the seasons under consideration who also provided the data regarding players' body height, one dimension of their physical appearance under investigation in the paper. However, the data on the players' appearance with regards to facial attractiveness, skin and hair color I gathered myself, with the help of three additional independent raters, analyzing the official autograph cards of all 1,363 players (downloaded from www.kicker.de).

Finally, my third research paper employs data on the collaborative behavior 1,108 players in the Bundesliga⁶ were met with by their peers in games during the seven seasons 2003/04 and 2009/10, resulting in 52,671 observations ($n = 52,671$). I created the dependent variable of this data set on the collaborative behavior myself by combining several of the above mentioned performance variables. The raw data as well as the data on the players' individual performances in the games was again provided by Impire AG. Analogous to the data set of the second research paper, I collected data on physical appearance also from Impire AG (only for body height) and generated own data (together with three raters for players' facial attractiveness, skin and hair color).

Overall, I investigate the theme of this dissertation applying sport, more precise soccer, as field of application due to its favorable conditions for organizational as well as behavioral research (Pfeffer & Davis-Blake, 1986; Day, Gordon, & Fink, 2012). Through its characteristic

⁵ Overall there were 58,828 player games during the seven seasons in the Bundesliga. However, we had to drop two player games due to a lack of performance observation by the data provider.

⁶ As I base the analysis on distinct "last" passes prior to a goal scoring opportunities, I had to drop observations, e.g. for goalkeepers, as they through their position on the pitch hardly ever receive a "last" pass putting them in the position for a goal scoring opportunity.

INTRODUCTION

as a controlled living laboratory, sport provides various advantages: First, through fixed rules relevant behavior as well as performance can only be demonstrated in a clearly defined setting, e.g. in soccer during play time on the pitch. Thus, relevant behavior is easy to define (Berman, Down, & Hill, 2002, p. 20; Wolfe et al., 2005). Second, relevant behavior and performance is with relatively little effort through pre-existing key performance indicators reliably measurable (Bloom, 1999, p. 25). Third, behavior and performance is traceable and "relatively easy to interpret" (Pfeffer & Davis-Blake, 1986, p. 76) as well as comparable among peers in the same labor market. Forth, it is rather easy to compare and analyze behavior and performances of sportsmen over longer periods (Bloom, 1999, p. 25). Finally, roles and responsibilities in sport and thus tasks and accountabilities, e.g. through positions on the pitch, are clearly assignable and distinguishable in sport.

1.4 OUTLINE AND ABSTRACTS

In the following I intend to outline the structural composition of my dissertation. Thus, the remainder of this first chapter comprises abstracts of the three stand-alone research paper, including background information, but without anticipating their results.

1.4.1 Research Paper 1: Employee Discrimination based on Physical Appearance – A Review of the Literature

Despite the general consent that physically attractive employees are as a general rule favored (and less attractive employees discriminated against), research with regards to physical appearance on labor markets is surprisingly scattered. This holds true for both, for methods to scientifically assess employees' physical attractiveness as well as appearance and for the question which of employees' main stakeholder groups -employers, customers or co-workers- is the driving force behind employees' discrimination due to their physical appearance.

The paper intends to structure the research efforts conducted in these regards. Therefore, focusing on the three most prominent aspects of physical appearance -facial attractiveness, body gestalt and ethnic type- (Dechter, 2015), the paper, firstly, provides an overview of the most applied measures in appearance research. Secondly, guided by Becker's (1971) model implying that discrimination on labor markets may originate either from employers, customers or co-workers, the paper reviews and structures relevant literature for all three employee stakeholder groups along the three aspects of physical appearance, facial attractiveness, body gestalt and ethnic type.

I wrote this research paper together with my co-author Prof. Dr. Sascha L. Schmidt.

INTRODUCTION

1.4.2 Research Paper 2: Does Attractiveness still Matter if Performance Comes into Play? – An Assessment of the Attractiveness Stereotype in Professional Soccer

Despite an extensive body of research indicating various advantages for employees deemed physically attractive, factors that limit or even repeal the attractiveness stereotype have not been investigated in depth. To the contrary, research seems to predominantly prove that attractive individuals are generally associated with greater skills, competencies and a higher level of performance, e.g. in labor markets. However, scientific attempts to answer the question whether the advantage for physically attractive individuals in work-related settings prevails, if performance is measurable and publicly available, are still outstanding.

This paper addresses this by analyzing the two stage award process of the Player of the Month (German: Fußballer des Monats) in the Bundesliga, the German top-tier soccer league, as in this labor market work-related performance is transparent and can be measured reliably: In the first stage of the award the team captains of the Bundesliga teams nominate one player each to the next and final stage. In the second stage the public is asked to vote for one out of three players previously short-listed by the captains' votes. In addition, the public was presented portrait pictures of the players in the final round. The unique setting in the context of the Player of the Month award brings about the rare opportunity to investigate the (voting) behavior of two stakeholder groups, namely players' peers/co-workers and the (soccer-) interested public, simultaneously.

The research paper is co-authored by Prof. Dr. Sascha L. Schmidt and Prof. Dr. Benno Torgler. I also integrated helpful remarks from Prof. Dr. Christina Günther.

1.4.3 Research Paper 3: Does Physical Appearance Impact Collaborative Behavior of Peers? – An Analysis of a Labor Market

It is scientifically undisputed that attractive individuals enjoy benefits in working environments as they can, for instance, rely on increased career opportunities (Hamermesh & Biddle, 1994; Ruffle & Shtudiner, 2010; Lopez Boo, Rossi & Urzúa, 2013; Borland & Leigh, 2014). Furthermore, attractive individuals can expect a more collaborative behavior by others (Mulford et al., 1998; Andreoni and Petrie, 2008) in everyday situations. However, increased collaborative behavior of peers towards their attractive colleagues have so far, at least to my knowledge, only be shown in experimental settings and not yet in actual working environments.

Accordingly, this research paper pursues whether soccer players in the German Bundesliga tend to collaborate more likely with physically attractive teammates than with peers that have recently proven high performance, taking advantage of the favorable conditions of sports for organizational as well as behavioral research (Pfeffer & Davis-Blake, 1986; Day, Gordon,

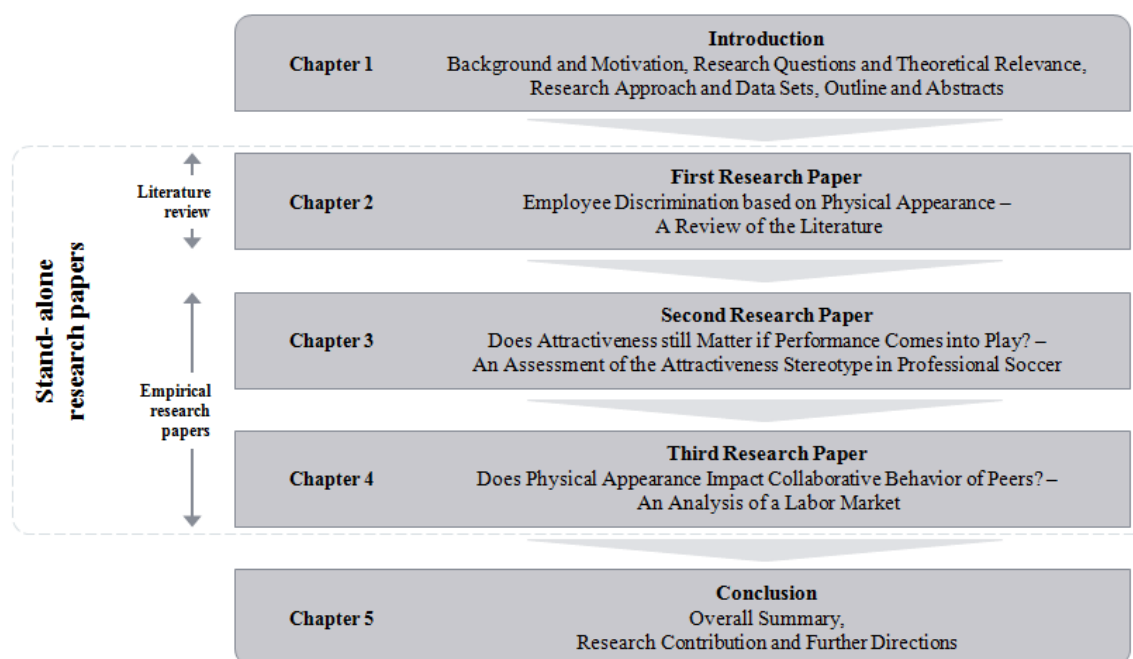
INTRODUCTION

& Fink, 2012). In contrast to research settings in experimental settings, subjects in this field of application can be assumed of to act also in their own interest, since collaborative decisions may fall back on the success of the entire team.

I wrote this research paper together with my co-authors Prof. Dr. Sascha L. Schmidt and Prof. Dr. Benno Torgler and also integrated valuable remarks from Prof. Dr. Christina Günther.

The following three main chapters of this dissertation are comprised by the three individual stand-alone research papers. That is, the review of the relevant literature of discriminatory behavior of employers, customers and co-workers towards employees in labor markets in chapter 2, the investigation with regards to the persistence of the attractiveness stereotype in labor markets where performance contributions are measurable and transparent in chapter 3 and the examination whether peers tend to collaborate more likely with attractive colleagues in chapter 4. Finally, chapter 5 summarizes and evaluates the results as well as suggests areas for further research. Figure 1.1 visualizes the structural composition of this dissertation.

Figure 1.1: Structure of the Dissertation



2 EMPLOYEE DISCRIMINATION BASED ON PHYSICAL APPEARANCE – A REVIEW OF THE LITERATURE⁷

2.1 INTRODUCTION

It seems that throughout their entire life attractive people can expect a preferential treatment: Starting in infancy (e.g. Samuels & Ewy, 1985; Langlois et al., 1987; Langlois et al., 1991; Langlois et al., 1995), throughout youth (e.g. Landy & Sigall, 1974; Hamermesh & Parker, 2005; Süßmuth, 2006) and during adulthood (e.g. Elder, 1969; Roney, Mahler, & Maestripieri, 2003; Maner et al., 2003) research has found advantages for individuals with an attractive physical appearance. Human preference for attractive people seems apparent in various settings and situations of day-to-day life. More attractive individuals are, for instance helped more often (e.g., Benson, Karabenick & Lerner, 1976; Mulford et al., 1998), are met with greater leniency (Efran, 1974; Sigall & Ostrove, 1975; Kulka & Kessler, 1978) and receive more attention (e.g., Maner et al., 2003) than less attractive persons.

Advantages for physically appealing individuals are also apparent in labor-related contexts. For more than four decades now, since Dion, Berscheid and Walster (1972) discovered the attractiveness stereotype, scientists have proven employees deemed attractive to benefit and to be treated more favorably on the labor market. In fact, in academic research there appears a wide consensus regarding the positive impacts of an attractive physical appearance in working environments. At the same time, employees with negatively connoted physical aspects suffer remarkable disadvantages.

However, despite the prevailing opinion that in particular on labor markets "beauty matters" (Rosar, Klein & Beckers, 2008, p. 64), research regarding the effects of physical appearance in work-related settings is rather scattered. For instance, since various aspects of physical appearance determine the attractiveness of an individual (Loureiro, Sachsida, & Cardoso de Mendonça, 2011) research has not yet reached agreement regarding which feature of human physical appearance determines advantages on the labor market. Consequently, an abundance of aspects have been under investigation with multifaceted results. Furthermore, the question of which employee stakeholder groups in the labor market – employers, customers or co-workers – actually drive discrimination, is still unresolved and highly controversial.

With this work we intend to shed light on these topics, foremost by a systematical review of the relevant literature. In doing so, we first provide an overview of the most applied measures

⁷ Ulrich, F., & Schmidt, S. L. (2016). Employee Discrimination Based on Physical Appearance – A Review of the Literature. Unpublished Working Paper.

EMPLOYEE DISCRIMINATION BASED ON PHYSICAL APPEARANCE

and measurement procedures of the three most prominent aspects of physical appearance, namely facial attractiveness, body gestalt and ethnic type (Dechter, 2015). All three areas under consideration have lately shown a critical contribution to the assessment of humans' physical appearance as well as have recently been applied in research setups in work-related settings documented in academic literature (Persico, Postlewaite & Silverman, 2004; Heineck, 2005; Leigh & Susilo, 2009; Johnston, 2010; López Bóo, Rossi, & Urzúa, 2013, Scholz & Sicinski, 2015; Gehrsitz, 2014).

Second, we apply Becker's (1971) model whereupon there are only three possible sources of employee discrimination on labor markets: discrimination by employers, customers or co-workers. For each of these three employee stakeholder groups we review relevant literature investigating discrimination for employees stemming from facial attractiveness, body gestalt or ethnic type. As discrimination by employers, as opposed to discrimination by customers and co-workers, may take various forms beyond behavior in personal interactions, we additionally differentiate here between discrimination for employees in the process to access the labor market as well as regarding employees' career perspectives once working and their work-related financial compensation.

For the course of this work we define discrimination as an unequal treatment of equally qualified employees (Kahn, 1991). For this review we selected articles representing the current state of research as well as scientific controversies and applied the snowball technique (Greenhalgh & Peacock, 2005; Sayers, 2007; see also Hepplestone et al., 2011) to determine further sources from references in the articles. In the entire course of our review we focused on peer-reviewed journals and specialist literature.

The remainder of this article is structured into three more chapters: The following chapter 2.2 introduces the most common methods to assess employees' facial attractiveness, body gestalt and ethnic type applied in discrimination research on labor markets. In chapter 2.3, we provide a review of the relevant literature regarding employer, customer and co-worker discrimination with respect to physical appearance of employees along the three dimensions facial attractiveness, body gestalt or ethnic type. Finally, we provide our concluding remarks, including the identification of further research areas in chapter 2.4.

EMPLOYEE DISCRIMINATION BASED ON PHYSICAL APPEARANCE

2.2 ASSESSMENTS OF PHYSICAL APPEARANCE**2.2.1 Measures of Facial Appearance**

There is broad consensus in attractiveness research that facial appearance can be considered to be the most determining feature of a person's look (Berscheid & Walster, 1974; Symons, 1995; Wade, 2000). Consequently, facial appearance has been most commonly studied as aspect of attractiveness in appearance research literature (Scholz & Sicinski, 2015). Nonetheless, researchers have used various methods to evaluate the facial attractiveness of subjects. These can be categorized in three main general approaches: peer evaluation, self-evaluation and the measurement of facial symmetry (Henss, 1993; as well as Henss 1998).⁸

There seems to be a general tacit agreement among individuals whether another individual is attractive or not. Consequently, the majority of research studies investigating the impacts of facial appearance on labor markets appraised facial attractiveness by *peer evaluations*; namely the assessment of a single individual or by a larger group of (independent) raters to which degree another person is facially attractive. In fact, a large body of research has shown that the differences among the evaluations of individuals' attractiveness by large numbers of people are rather small (e.g., Henss, 1992; Marcus & Miller, 2003).⁹ Following the peer evaluation method, there have been an abundance of studies investigating the impacts of physical appearance on labor markets assessing individuals' (facial) attractiveness on the basis of raters' evaluations, either in person (e.g., Harper, 2000; Fletcher, 2009) or on video tape (e.g. Riggio & Throckmorton, 1988), but most commonly on the basis of portrait photographs (e.g. Reingen & Kernan, 1993; Biddle & Hamermesh, 1998; Möbius & Rosenblat, 2006; Süssmuth, 2006).¹⁰ The implied and tacit understanding on what makes an individual's facial appearance attractive, seems to hold true in groups of people independent of residence and culture (Iliffe, 1960; Hatfield & Sprecher, 1986; Umberson & Hughes, 1987; Langlois et al., 2000).

The *self-evaluation method* requires subjects themselves, as opposed to independent raters, to assess their own attractiveness. Self-evaluation has been applied in particular for research regarding the relationship of attractiveness and self-esteem of individuals (e.g. Franzoi & Shields, 1984; Franzoi & Herzog, 1986; Wade, 2000; Marcus & Miller, 2003), but has also

⁸ While peer evaluations of facial appearance has accompanied attractiveness research -also in the contexts of labor markets- since a very early stage (e.g., Iliffe, 1960), assessments of facial appearance based on self-assessments and facial symmetry evaluation have complemented appearance research only recently.

⁹ Henss (1992) claims that only twelve raters are necessary to reliably reproduce the overall perception of the general public with regards to a persons' attractiveness.

¹⁰ Similarly, cohort and survey studies, such as the ones of Hamermesh and Biddle (1994), Doorley and Sierminska (2012), Gehrsitz (2014) or Borland & Leigh (2014) also refer to the assessment of (facial) attractiveness based on the evaluations of the respective interviewers.

EMPLOYEE DISCRIMINATION BASED ON PHYSICAL APPEARANCE

been deployed in various international studies investigating the impact of physical appearance on work-related success. This includes individual compensation, entry level earnings or household income, e.g. in the US (French, 2002), in Taiwan (Tao, 2006), in Brazil (Loureiro, Sachside, & Cardoso de Mendonça, 2011), in Germany and Luxembourg (Doorley & Sierminska, 2012) and in Australia (Borland & Leigh, 2014). Nonetheless, due to the fact that this appearance assessment method, by definition, is subjective and thus does not reveal bias-free results, its application in the research area of discrimination in labor market settings due to physical appearance is rather limited.

This detriment is taken up by the third measurement of facial attractiveness, namely the one of *facial symmetry*. According to the *Good Genes Hypothesis* (e.g., Symons, 1995) individuals with a more symmetric appearance have more favorable genetic preconditions and are thus perceived to be more attractive (Little et al., 2001).¹¹ The theory claims that facial symmetry is based on superior, namely by external factors rather unaffected, genetic pools (Zebrowitz & Rhodes, 2004, Perrett, May & Yoshikawa 1994; Thornhill & Gangestad, 1999; Penton-Voak et al., 2001). For instance, facial symmetry is thought to provide information regarding an individual's health condition (Fink, Grammer & Thornhill, 2001; Fink & Penton-Voak, 2002; Jones et al., 2001; Thornhill & Gangestad, 1999) and immune defense (Perrett et al., 1999; Penton-Voak et al., 2001; Rhodes et al., 2003).¹² In fact, various studies have confirmed preferences for symmetry in the evaluation of others' appearance (Grammer & Thornhill, 1994; Mealey, Bridgstock, & Townsend, 1999; Penton-Voak et al., 2001). Derived, e.g. from the golden ratio (Green, 1995; Rossetti et al., 2013)¹³ and neoclassical canons (Farkas et al., 1985), there have recently been developed a variety of assessment methods, which evaluate facial attractiveness on the basis of symmetry. Among these are, for instance, approaches comparing digitally the symmetry of manipulated faces (Rhodes et al., 1998; Perrett et al., 1999; Penton-Voak et al., 2001). Moreover, recent research has also applied measurements based on facial landmarks with the help of computer software, including models for the calculation of overall facial geometry attractiveness scores, which require placing facial landmarks on subjects' photographs in order to assess the facial symmetry and thus the attractiveness (Schmid,

¹¹ In fact, there has been scientific support for the role of attractiveness signaling good health conditions (Hamilton & Zuk, 1982; Thornhill & Gangestad, 1993; Thornhill & Gangestad, 1999) as well as cognitive abilities intelligence (Thornhill & Gangestad, 1993; Thornhill & Gangestad, 1999), higher education levels (Sørensen & Sonne-Holm, 1985; Sargent & Blanchflower, 1994; Persico, Postlewaite, & Silverman, 2004) and performance potential (Miller & Todd, 1998; Zebrowitz et al., 2002).

¹² See Hamilton and Zuk (1982) for an investigation regarding animals.

¹³ Recently there have been a few studies questioning the explanatory contribution of the golden ration to perceived attractiveness (e.g. recently Friedenber, 2012; Stieger & Swami, 2015).

EMPLOYEE DISCRIMINATION BASED ON PHYSICAL APPEARANCE

Marx, & Samal, 2008). These methods have also been applied with respect to labor market settings. For instance, there have been similar applications to assess facial attractiveness of subjects in research with respect to corporate leaders (Halford & Hsu, 2013) as well as regarding athletes in the field of sports (Hoegele, Schmidt, & Torgler, 2015).

2.2.2 Measures of Body Gestalt

Despite that "facial attractiveness is the most commonly used measure of beauty in the literature" (Scholz & Sicinski, 2015, p. 1), there is a broad consensus that a person's attractiveness is comprised of more than just facial attractiveness (e.g., Loureiro, Sachside, & Cardoso de Mendonça, 2011; Liu & Sierminska, 2014). The attractiveness of the human body has been shown to have comparable effects on attractiveness ratings, equal to facial attractiveness (Allicke, Smith, & Klotz, 1986).

Body-related measures have been adopted in many cases in empirical research in the course of discrimination investigations on labor markets. This comprises in particular assessments with regards to a persons' body height (Frieze, Olson, & Good, 1990; Averett & Korenman 1996; Mitra, 2001; Persico, Postlewaite, & Silverman, 2004; Heineck, 2005), body weight (McLean & Moon, 1980; Averett & Korenman 1996; Cawley, 2000; Mitra, 2001; Han, Norton & Powell, 2011), the body mass index (BMI) (Averett & Korenman, 1996; Harper, 2000; Cawley, 2004; Conley & Glauber, 2005; Tao, 2006; Holway & Guerci, 2012) and the waist-to-hip-ratio (WHR) (Singh, 1993; Barber, 1999).

While body height and body weight are assessments of an individual's body measured on the metric scale¹⁴, BMI¹⁵ and WHR are ratios of body gestalt measures. While height, weight and BMI are applied frequently in research regarding discrimination on the labor market with both genders, the WHR, in contrast, is only applicable to women.¹⁶ Moreover, despite confirming results of various international studies (e.g. Henss, 2000; Furnham, Moutafi & Baguma, 2002; Streeter & McBurney, 2003; Schützwohl, 2006), there have also been opposing findings questioning the general validity of the WHR as a valuable attractiveness measure for females (e.g., Henss, 1995; Tassinary & Hansen, 1998; Furnham, Swami & Shah, 2006).

One reason for the vogue of body-related assessments of attractiveness is to avoid subjectivity and dependence on rater assessments (Loureiro, Sachside, & Cardoso de Mendonça,

¹⁴ For body height, measures are, as a rule, either expressed in feet or meters and for body weight in pounds or kilograms, respectively.

¹⁵ The formula for BMI calculation is: $BMI = \text{body weight} / (\text{body height})^2$.

¹⁶ Singh (1993) introduced the ideal score of 0.7 for women for the ration between waist circumference and hip circumference.

EMPLOYEE DISCRIMINATION BASED ON PHYSICAL APPEARANCE

2011). Interestingly, however, only in exceptional circumstances are height and weight actually measured by an independent third party in the academic context. In most studies applying body gestalt measures as expression of attractiveness probands are asked to provide their personal height or weight measure themselves. This holds true also for investigations regarding outcomes of physical appearance in labor market settings; e.g., for body height (Frieze, Olson, & Good, 1990; Averett & Korenman 1996; Mitra, 2001; Persico, Postlewaite, & Silverman, 2004; Heineck, 2005), for body weight (McLean & Moon, 1980; Averett & Korenman 1996; Cawley, 2000; Mitra, 2001; Han, Norton & Powell, 2011) and for BMI (Averett & Korenman, 1996; Cawley, 2004; Harper, 2000; Conley & Glauber, 2005; Holway & Guerci, 2012). Therefore, despite its impartial semblance and its application in many studies, attractiveness measured in the form of height and weight, has rather rarely been assessed objectively in research with respect to discrimination on labor markets.

2.2.3 Measures of Ethnic Type

Despite the affiliation of an individual to a certain ethnic group has caused a multitude of research studies, there is no universally accepted measure or set of criteria for the determination of a person's race (Hirschman, Alba & Farley, 2000). So far, most scientific definitions of the term *race* assign it a social connotation rather than a biological one (Williams, 1997).¹⁷ In social sciences, however, a race is seen as a sociological group to which individuals sort or associate themselves to (Kaufman, 1999).

The majority of studies regarding discrimination on labor markets based on appearance by ethnic type adopt the sociological perspective rather than the genetic. Consequently, researchers let the subjects either sort themselves into race categories, as a rule during surveys or interviews (e.g., Wilson, Tienda, & Wu, 1995; Wilson, 1997; Holzer, Offner & Sorensen, 2005, Wilson, 2005), or they conduct the classification of their subjects' race themselves (e.g., Timmerman, 2000; Sagas & Cunningham, 2005; Pager, Western & Bonikowski, 2009; Goddard & Wilson, 2009). A central role in this classification plays the US Census Bureau.¹⁸ It distinguishes between Hispanic and Latino origin and six different races (e.g. Humes, Jones, & Ramirez, 2010).¹⁹

¹⁷ Nevertheless, there have been methods developed with which scientists, on the basis of genetics, can determine origin, ancestry and consequently also a human's race (e.g., Guo et al., 2014; Rosenberg et al., 2003).

¹⁸ The US is the first country collecting race data on census (Travassos & Williams, 2004).

¹⁹ The six races are: "White", "Black or African American", "American Indian or Alaska Native", "Asian", "Native Hawaiian or Other Pacific Islander" and "Some Other Race".

EMPLOYEE DISCRIMINATION BASED ON PHYSICAL APPEARANCE

An alternative approach to determine the extent of racial discrimination is the assessment of a subject's skin color on the basis of the Fitzpatrick scale (Fitzpatrick, 1988). Having its origin in the field of dermatology, this prominent approach measures the tolerance for direct solar radiation based on, e.g. an individual's hair and eye colors and the tendency for freckles or sun burn, and assigns an individual to one of six Fitzpatrick skin type categories.

Yet another alternative to measure discrimination based on ethnic affiliation on labor markets is the avoidance of any direct disclosure of subjects' races. Certain triggers, such as applicants' first names generally typical for a certain ethnical background, are the only cues provided in order to test whether the employer associates a certain name with a race and in consequence discriminates against the respective candidate (e.g., Bertrand & Mullainathan, 2004; Nunley et al., 2015).

2.3 FORMS OF DISCRIMINATION IN LABOR MARKETS

2.3.1 Employer discrimination

Granting certain employees benefits over their peers only based on determined aspects of physical appearance is all but rare among employers on labor markets. Employer discrimination takes place in various dimensions, in particular when it comes to get access to the labor market for employees, their career progression and their work-related financial compensation. As opposed to labor market discrimination by customers and co-workers, employer discrimination can rather easily be identified through publically available socio-economic data, such as country-specific employment statistics or compensation trackers. In the following we will investigate on the state of research regarding the above mentioned three main dimensions of employer discrimination, namely access to the labor market, career progression and financial compensation. In doing so, we will systematically examine each of the three dimensions with regards to the aspects of physical appearance introduced in chapter 2, namely facial appearance, body gestalt and ethnic type.

2.3.1.1 Access to the Labor Market

2.3.1.1.1 Discrimination to Access the Labor Market through Aspects of Facial Appearance

Doubtlessly, employees with an attractive facial appearance have advantages on the labor market, since preferences for employees with an outstanding facial attractiveness are proven for a number of sectors, professions and even for entire birth cohorts (Harper, 2000; Persico, Postlewaite, & Silverman, 2004; Han, Norton & Powell, 2011). Research has in particular shown remarkable and measureable advantages for facially attractive individuals to enter the

EMPLOYEE DISCRIMINATION BASED ON PHYSICAL APPEARANCE

labor market in the first place. This holds evidently true during both, the oftentimes impersonal application process and the physical job interview.

Recent studies show that attractive candidates sending out application documents to potential employers for a job are more likely to be contacted than unattractive contenders. López Bóo, Rossi, & Urzúa (2013), for instance, find that job applications including portrait pictures of the applicant, receive over one third more responses when the depicted person is deemed attractive compared to applications of candidates perceived as rather unattractive. Rooth (2009) as well as Ruffle and Shtudiner (2010) come to similar results: Facially attractive applicants are preferred over less attractive ones. Apparently, facial attractiveness in the eyes of independent raters is oftentimes associated with higher expectations towards performance; facially attractive applicants seem to hold out the prospect of increased competence and abilities. Interestingly, increased expectations towards facially attractive employees even hold for experts. Cash, Gillen & Burns (1977) show professional personnel consultants to favor resumes of more facially attractive applicants over less attractive that only differ on the included photographs. Dipboye, Arvey & Terpstra (1977) conducting a similar study with peer raters come to the same result, namely preferences for facially attractive employees. Moreover, they can even show that the raters' gender and level of attractiveness does not influence the judgments; attractive applicants are preferred over their unattractive, regardless.

Furthermore, after the application, the initial step in a job hunt, attractive applicants, again, benefit from their physical appearance in job interviews. If already a photograph in the application lets people lean towards selecting more attractive candidates, attractive facial appearance assuredly influences judgments regarding the appropriateness of the applicants for certain positions significantly. Riggio and Throckmorton (1988), for example, prove that in job interviews the evaluators' assessments are biased by attractiveness in favor of appealing applicants.²⁰ Again, attractive applicants are esteemed to be more suited for most positions as they are evidently perceived more intellectually (Eagly et al., 1991; Langlois & Stephan, 1977) competent as well as more capable (Hamermesh & Parker, 2005) than their less attractive peers. Along the same lines, Gehrsitz (2014), find that facially attractive employees for both genders have a higher probability to be employed (see also Marlowe, Schneider & Nelson, 1996).

²⁰ Riggio and Throckmorton (1988) asked raters to assess the overall physical appearance of subjects. Mindful of Wade (2000), Wade, Irvine & Cooper (2004) and Scholz & Sicinski (2015), however, indicating that facial attractiveness is the most important determinate in the attractiveness evaluation of an individual, we attribute the study to the effects of facial appearance in the application process.

EMPLOYEE DISCRIMINATION BASED ON PHYSICAL APPEARANCE

In summary, facial appearance matters in the labor market entry process. Various studies have shown advantages for facially attractive employees, both in the application process as well as in job interviews. The selecting party, mostly (potential) employers, concede facially attractive a higher degree of competences and abilities which is expressed in increased chances for consideration for employment.

2.3.1.1.2 Discrimination to Access the Labor Market through Aspects of Body Gestalt

Similar to facial attractiveness, body gestalt appears also to influence applicants' prospects to be considered for a position. However, opposed to facial attractiveness, which seems to substantiate the prospect for higher abilities, body gestalt appears to be associated with a certain social stand and seems to alter the perception of a person's assigned status. The connection between (perceived) body height and professional status was detected already in the 1960s, as Wilson (1968) proved a significant relationship between ascribed status of a male individual and perceived body size. Jackson and Ervin (1992) gain a similar result for both genders: Short men in the study are indeed perceived of lower professional status than their tall and average-sized peers.²¹ Moreover, Jackson and Ervin (1992) confirm these findings also for females, by showing that taller women are perceived both, more physically attractive and attributed with a higher professional status than shorter women.

The increased perceived status of taller employees has consequences on their career prospects as well as on their individual and household compensation (which will be discussed in chapters 2.3.1.2.2 and 2.3.1.3.2, respectively), but in the first place influences their chances for employment positively. While shorter job applicants are associated with a lower status and are found to have diminished chances of getting hired in various industries, taller job applicants, in particular those applying for positions involving personal interactions, are more likely to get hired. This holds not only for sales positions (Kurtz, 1969), but also for applicants of both genders for leadership positions in the education sector (Bonuso, 1983). Similarly, Tao (2006) confirms increased chances to enter the labor market for tall individuals: *Ceteris paribus*, recruiters are not only more likely to grant taller applicants entry to the labor market; taller applicants are also conceded more leeway when it comes to salary negotiations (see in particular chapter 2.3.1.3.2).

While there is general agreement regarding the positive impacts of body height for both, women and men, this is different for body weight: Overweight women generally seem to suffer

²¹ However, tall males were not perceived of higher professional status than their normal-sized peers.

EMPLOYEE DISCRIMINATION BASED ON PHYSICAL APPEARANCE

more from hurdles to enter the labor market than overweight men. Despite a few studies that cannot confirm a relationship between overweight and chances in recruitment (Cawley, 2000; Norton & Han, 2008), overweight and obese women are in the majority of studies penalized with regards to the probability for employment (e.g., Averett & Korenman, 1996; Sarlio-Lahteenkorva & Lahelma, 1999; Tunceli, Li, & Williams, 2006; Han, Norton & Stearns, 2009; Rooth, 2009). For example, Pingitore et al. (1994) show unfavorable biases for obese women in job interviews reducing their chances for employment (see also Pagán & Dávila, 1997; see Swami et al., 2008 for recruitments to managerial positions). Similarly, Paraponaris, Saliba, & Ventelou, 2005, found the period of unemployment during employable age positively correlated with the BMI of a female employee at the beginning of her career (see also Sarlio-Lahteenkorva & Lahelma, 1999).

In turn, men do not suffer disadvantages with regards to their chances to enter the labor market. Their likelihood for employment seems statistically unaffected by their weight or BMI scores (Averett & Korenman, 1996; Sarlio-Lahteenkorva & Lahelma, 1999²²; Tunceli, Li & Williams, 2006; Norton & Han, 2008). As a result, when it comes to chances for employment, women are to a considerable degree more likely to suffer from body weight discrimination than men.

Summing up, size does matter regarding chances to enter the labor market. As body height moderated by the attributed personal status coincides with chances for employment, it confers taller applicants an advantage over shorter contenders. This finding is independent of employees' gender. However, with regards to weight, we can conclude differences between overweight women and men: While women seemingly do suffer disadvantages in finding employment when overweight, men's weight can be considered to have no effect on the chances of their job application.

2.3.1.1.3 Discrimination to Access the Labor Market through Aspects of Ethnic Type

Despite legislative codification in a wide range of countries, such as Title VII of the 1964 Civil Rights Act in the United States, making employment discrimination on race and ethnicity illegal the chances for employment of Caucasian work force was around the turn of the millennium still twice as high as the chances of African-American employees in the US (Council of Economic Advisers, 1998; see also Wilson, Tienda, & Wu, 1995; Bertrand & Mullainathan, 2004). These findings are confirmed also for other countries in the Western world,

²² There is even a small indication that men may suffer from being too thin on labor markets (Sarlio-Lahteenkorva & Lahelma, 1999).

EMPLOYEE DISCRIMINATION BASED ON PHYSICAL APPEARANCE

as Firth (1981) provides evidence for Great Britain in similar magnitude more than a decade after the adoption of the Race Relations Act of 1968.

In fact, academic research has shown consistent evidence for racial discrimination when it comes to accessing the labor market (Turner, Fix & Struyk, 1991; Darity & Mason, 1998; Pager & Shepherd, 2008). In almost all studies indicating differences based on race, white individuals were preferred and were more likely provided access to employment (Heckman & Siegelman, 1992; Heckman, 1998; Altonji & Blank, 1999; Newman, 1978 being an exception²³). This holds true for numerous experiments and studies comparing the treatment of individuals with various different racial backgrounds. For example, black job applicants tend to experience disadvantages in the application process, as they receive significantly fewer interview requests than their white counterparts with equal resumes (e.g., Pager, Western & Bonikowski, 2009). In order to investigate the chances of African Americans with dark skin tones to enter the labor market, Bertrand and Mullainathan (2004) conducted an experiment sending out equivalent resumes to employers in two major cities in the US that only allowed the conclusion to the ethnical background of the respective applicant by their first names.²⁴ Applications with names indicating a white applicant led to 50% more callbacks than those of their equally qualified, but presumably dark skinned fellow job applicants (see also Nunley et al., 2015²⁵). In addition, various studies have shown that colored employees in comparison to their white peers have to invest more time in the job hunting process and gain less work-related experience overall (Tomaskovic-Devey, Thomas, & Johnson, 2005; see also Wilson, Tienda, & Wu, 1995).

In fact, the advantage of white candidates seems stable over job types, sectors and company sizes (e.g. Wilson, Tienda, & Wu, 1995). Yet, if colored employees enter organizations they do so at different, namely lower, hierarchical levels compared to the white work force (Wilson, 1997). Apparently, darker-skinned applicants cannot compensate their *racial handicap* with higher educational attainment. Wilson, Tienda, & Wu (1995), for instance, show the racial gap in unemployment to be largest for men with high education levels, e.g. college degrees. Black college graduates have a 2.24 times higher likelihood of involuntary unemployment compared to their white peers at the same academic level (Wilson, Tienda, & Wu, 1995).

²³ However, the methodology applied by Newman (1978) gave reason for controversies (e.g. McIntyre, Moberg & Posner, 1980).

²⁴ For example, the names "Lakisha" and "Jamal" indicated an applicant with an African American background, whereas "Emily" and "Brad" suggested the sender of the application documents to be white.

²⁵ Nunley et al. (2015) found black college graduates in the US to receive 14% fewer interview requests than their white classmates.

EMPLOYEE DISCRIMINATION BASED ON PHYSICAL APPEARANCE

Hence colored employees are discriminated twice accessing the labor market: Not only do colored applicants have a harder time getting the opportunity to present themselves in application processes. If they are accepted for employment, they enter at a lower level though.

Although labor market discrimination is predominately investigated regarding black employees, there is evidence for comparable prejudices against employees with Hispanic ethnical backgrounds (e.g., Cross et al., 1990) as well as Maghrebi origin (e.g., Cediey & Foroni, 2007; Duguet et al., 2010; Combes et al., 2016) in Western countries. Kenney and Wissoker (1994), for example, analyzing the chances for success in application processes between Hispanic and Anglo applicants, find, despite equivalent application documents both, higher chances for interviews and job offers for Anglo applicants (see Pager, Western & Bonikowski, 2009 for similar results). In a similar experiment to the one of Bertrand and Mullainathan (2004), Arceo-Gomez and Campos-Vazquez (2014) sent out fictitious resumes as a response to job advertisements with photographs of the distinct phenotypes in Mexico, namely Caucasian, mestizo, and indigenous. Similarly, the study revealed evidence for discrimination of indigenous looking job seekers.

Along the same lines, Duroy (2011) found job applicants with Maghrebi origin less likely to get hired in France (see also Cediey & Foroni, 2007; Joseph, Lopez & Ryk, 2008); Duguet et al., 2010; Aeberhardt et al., 2010). In accordance with Kim (2009) one may conclude that there is clear evidence that darker skinned employees, independent of their gender, suffer racial disadvantages in at least Western economies, when it comes to entering the labor market.

2.3.1.2 Career Progression

2.3.1.2.1 Discrimination with Respect to Career Progression through Aspects of Facial Appearance

Facial attractiveness, as already indicated in chapter 2.3.1.1.1, is associated with a more favorable appraisal of (future) work-related abilities, contributions and performance. Therefore, attractive individuals apparently benefit not only during the application process from their physical appearance, but also throughout their careers. Facially attractive employees are more likely to be evaluated more favorably and chosen for higher level roles in the corporate context. A study by Chung and Leung (1988), for instance, reveals on the one hand that executives tend to promote moderately performing employees more likely when they are physically attractive. On the other hand, Chung and Leung (1988) also show advantages in the competence perception for mediocre, but attractive employees by their supervisors. Thus, decision makers grant fa-

EMPLOYEE DISCRIMINATION BASED ON PHYSICAL APPEARANCE

cially attractive employees in the absence of truly accessible and transparent performance indications more confidence regarding individual contributions only based on their facial appearance (see also Andreoni & Petrie 2008; Deryugina & Shurchkov, 2013). This finding seems generally valid for employees of both genders.²⁶

As empirical research has shown, the anticipation of higher skills and future performance leading to better career perspectives for facially attractive employees is not limited to sectors that have been proven to be affected by occupational sorting based on appearance (Hamermesh & Biddle, 1994; Biddle & Hamermesh, 1998); such as, for example, the sales sectors. To the contrary, also industries generally known for rational decision making and usually not under suspicion to be prone to superficial examinations, are affected, e.g. in the military or on the stock and investment market. Mazur, Mazur, & Keating (1984), for instance, point out that career decisions in the US military, such as promotions to higher ranks through supervisors, are related to certain aspects of facial appearance of the aspirants. Also, Halford and Hsu (2013) show that more attractive CEOs coming into office are associated with a brighter future outlook by their investors and thus increasing stock prices. Moreover attractive CEOs achieve also higher acquirer returns upon acquisition announcements than their plain peers (Halford & Hsu, 2013).

Therefore, facial appearance matters not only in the job hunt, but also with regards to the career perspective: Attractive individuals have an advantage in a wide range of the industries, demographic segment and age ranges over less attractive peers, which is in line with the findings we established in chapter 2.3.1.1.1. Again, the reason that the facially attractive are privileged in that regard seems to stem from the evaluators' association of a higher capability of attractive employees.

2.3.1.2.2 Discrimination with Respect to Career Progression through Aspects of Body Gestalt

Similar to the findings outlined previously, there are clear indications that body height supports also career progression of employees with a larger body height. Body height is not only found to increase employment security (e.g., Hensley & Cooper, 1987) as well as the chances for better work-related appraisals, it is also found to be positively related to supervisory responsibilities (e.g. Herpin, 2005). Lester and Sheehan (1980), for instance, prove that the evaluations of average-sized and tall policemen by their supervisors are significantly better than

²⁶ Nonetheless, there is also evidence indicating effects for employees with attractive facial appearance for women only (Heilman & Stopeck, 1985).

EMPLOYEE DISCRIMINATION BASED ON PHYSICAL APPEARANCE

those of their short colleagues (see also Sheehan and Lester, 1980). This leads to increased career advancement opportunities for taller and average-sized officers in comparison to their shorter colleagues (see also Herpin (2005) for similar results). Thus, it comes as no surprise that the rate of promotions to managerial positions is proven to be positively related to increased body height (Melamed & Bozionelos, 1992).

The positive associations with taller employees can be explained by the circumstance that body height is associated with positive character traits supporting the perception of a higher social stand of the employee. This results in taller work force being more likely to excel in positions where traits such as social competence, dominance, adjustment, and intellectual competence are important (Collins & Zebrowitz, 1995). This is confirmed by Melamed and Bozionelos (1992) showing tall employees to be perceived rather dominant and independent. As a result, height in work places is found to be significantly related to social esteem, leader emergence, performance and success (Judge & Cable, 2004).

When it comes to career perspectives a larger body height is found to be beneficial for both, men and women. Despite controversial findings by Stieger and Burger (2010) implying some advantages for short and partial disadvantage for tall women, the majority of studies indicate a positive impact of height on the occupational success of male and female employees. Böckerman and Vainiomäki (2013), for example, investigating earnings and employment of genetically identical twins, find body height determining females' career outcomes positively. Also, Melamed and Bozionelos (1992) confirm that taller women, similar to men, are more likely to reach managerial promotions. Similarly, Judge and Cable (2004) find that taller women have more occupational success than shorter females. The prospects to prosperity on labor markets, however, are slightly lower for females than of the men.

This is again different for weight. In line with the results for accessing the labor market, overweight men are found to only moderately suffer disadvantages with regards to their career perspectives once they have found employment (Rothblum et al., 1990; Pagán & Dávila, 1997; Bordieri, Drehmer & Taylor, 1997). Nevertheless, overweight women, also similar to the results presented above, are found to be discriminated against in most studies (e.g., Brink 1988; Puhl & Brownell, 2001). Averett and Korenman (1996), for instance, provide evidence for this in US labor markets for white overweight employees.²⁷

²⁷ There is only little evidence that obese black women are discriminated against by their weight or other body-related factors.

EMPLOYEE DISCRIMINATION BASED ON PHYSICAL APPEARANCE

Overall, height and weight influence advancement of individuals in their career; men's as well as women's height is indicated in the majority of studies to have a positive impact on the individual career advancement. However, the picture looks different with regards to body weight. Whereas men's weight has, if at all, apparently a very limited impact on their career path, there is clear indication that a high body weight can be detrimental for women's ascent on the career ladder.

2.3.1.2.3 Discrimination with Respect to Career Progression through Aspects of Ethnic Type

We already described affiliation to an ethnical group to be a possible source for discrimination to enter the labor market. In particular skin color, as shown, constitutes a factor for discrimination (e.g., Maddox, 2004), in most cases to the disadvantage of darker-skinned employees. While there is great evidence to assume that this prevails also when it comes to career progression (Goddard & Wilson, 2009), there are also examples indicating evidence for the own-race bias (Rhodes et al., 2005; Burke et al., 2013; see also Langlois & Stephan, 1977). Leigh and Susilo (2009), for example, prove the skin color of democratic representatives running for political offices to influence elections in the Australian state Northern Territory: White candidates were favored in electorates with a small number of indigenous voters; darker-skinned candidates in electorates with a high indigenous population received more votes.

Nevertheless, similar to the findings with respect to the chances to initially enter the employment market, most studies find increasing disadvantages of employees with darker skin color. Wilson (2005), for instance, finds differences in the likelihood to stay employed early in the career between colored and white workers. African-American employees are significantly more likely to suffer from dismissals than white employees. Along the same lines, there have been multiple studies indicating lower employment rates (Altonji & Blank, 1999) and increased chances for long-term unemployment for colored individuals with work experience. Holzer, Offner & Sorensen (2005), for example, find a higher unemployment rate of young black men in the US, accompanied by a higher risk for long-term unemployment. Similarly, Wilson, Tienda, & Wu, (1995) reveal that black college graduates have a 2.24 times higher likelihood of involuntary unemployment compared to their white peers with the same academic level. As we have shown earlier, it seems that colored employees as a rule enter organizations at a lower hierarchical level than white work force. This, in turn, results in a lower likelihood to acquire experiences and human capital credentials essential for promotions, e.g. to managerial positions (e.g., Wilson, 1997; Sagas & Cunningham, 2005) which in turn impedes subsequent promotions and advancements.

EMPLOYEE DISCRIMINATION BASED ON PHYSICAL APPEARANCE

Similar to African-American employees there is also evidence implying a strong (negative) influence for Hispanic and Maghrebi employees by their ethnical backgrounds. Despite a decreasing tendency, work force with Hispanic origin still suffers from restricted career opportunities, in particular with respect to female workers (Reimers 1983; Mier & Giloth, 1985; Woods, 2000; Mason, 2004; Arceo-Gomez & Campos-Vazquez, 2014). Along the same lines, Aeberhardt et al. (2010) shows that French workers with at least one African parent not only experience discrimination at the hiring level, but also throughout their careers, as they are, for instance, less likely considered for promotions (see also Silberman & Fournier, 1999 and Meurs, Pailhé & Simon, 2006). Similar to discrimination against Blacks, Aeberhardt and Pougget (2007) show employees with North-African origin to suffer in particular from occupational segregation (see also Joseph, Lopez & Ryk, 2008; Duroy, 2011) implying increased difficulties for Maghrebi employees to improve socio-economically (Silberman, Alba, & Fournier, 2007).

Summing up, skin tone and race are shown to have an impact on career development. Colored employees suffer clear disadvantages because of their skin tone/race and not only have to expect curtailments in getting ahead in the workplace, but are also exposed to a higher risk for unemployment.

2.3.1.3 Compensation

2.3.1.3.1 Discrimination in Compensation through Aspects of Facial Appearance

Apart from having advantages with respect to employment chances and increased prospects of promotions, facially attractive individuals are found to also receive an above average compensation. The positive effects of facial attractiveness on compensation have been investigated and broadly confirmed on an international basis. For instance, analyzing US and Canadian household survey data, which include interviewer assessments of respondents' attractiveness, Hamermesh & Biddle (1994) show not only a premium for attractive employees and a wage penalty for unattractive workers of both genders of five to 10%,²⁸ but also an attractiveness sorting effect; thus, attractive individuals are found to seek employment in sectors that reward (facial) attractiveness. Consequently, higher earnings for attractive workers have been found across certain industries. This holds true in particular in those sectors involving a lot interpersonal and customer interactions. For instance, Lynn and Simons (2000) as well as Lynn (2009)

²⁸ The plainness penalty is slightly larger than the attractiveness premium and the effects are at least as great for men as for women (Hamermesh & Biddle, 1994). Harper (2000) quantifies the penalties for plainness to even 15% for men and 11% for women on personal compensation in Great Britain.

EMPLOYEE DISCRIMINATION BASED ON PHYSICAL APPEARANCE

find higher compensation for attractive workers in gastronomy, but also handsome sales assistants (Sachsida, Dornelles & Wagner Mesquita, 2003) reach higher compensation levels. Similarly, Arunachalam and Shah (2010) show evidence for an increased total income for attractive workers in prostitution. Also, attractive attorneys in the US are found to earn more throughout their practice (Biddle & Hamermesh, 1998).

If considered each gender separately for a facial attractiveness compensation premium, attractive women have a prospect of a higher salary progression throughout their career (Kanzawa & Kovar, 2004).²⁹ Analyzing national compensation of two European countries, Germany and Luxembourg, Doorley and Sierminska (2012), for example, find attractiveness premiums for women in particular at lower wage levels and also attractiveness premiums for men that were independent of the income level. With the help of a national survey, Borland and Leigh (2014) show very similar results for women in Australia. By revealing earnings premiums for women in the US, French (2002) confirms results of previous studies (e.g., Frieze, Olson, & Russell, 1991; Hamermesh & Biddle, 1994; Biddle & Hamermesh, 1998). Along the same lines, Hamermesh, Meng, & Zhang (2002) analyzing the effects of females' attractiveness on earnings in China also confirm a positive relationship.

On the other hand, facially attractive males are not as often subject of studies. Therefore, there are less proof points for men. Although French (2002) cannot confirm premiums for male employees, most other studies investigating compensation premiums for facially attractive men hold out the prospect of a higher salary also for handsome male employees (e.g., Doorley & Sierminska, 2012). Similarly, Roszell, Kennedy, and Grabb (1989) reveal higher earnings for attractive male employees in a national sample of Canadian work force. Moreover, Frieze, Olson and Russell (1991) find more attractive male American MBA graduates to have a higher starting salary and to earn more over time (see Fletcher (2009) for similar results regarding US high school graduates).

In summary, we assume that compensation is influenced by facial attractiveness. In fact, it seems that employees of both genders, men and women, enjoy a salary premium in the labor market, when considered facially attractive.³⁰

²⁹ On average male graduates were found to earn \$2,600 more in 1983 for each unit of attractiveness (on a five-point scale); women earned \$2,150 more.

³⁰ Interestingly, it seems generally accepted that the attractiveness effect in labor markets is due to appearance, while only a small portion is attributed to a related increased self-confidence (e.g., Möbius & Rosenblat, 2006; Leigh & Borland, 2007).

EMPLOYEE DISCRIMINATION BASED ON PHYSICAL APPEARANCE

2.3.1.3.2 Discrimination in Compensation through Aspects of Body Gestalt

There have been a number of studies proving body height to affect employee compensation positively. A higher body height has been found to be beneficial on the labor market across various geographies (e.g., Loh, 1993; Judge & Cable, 2004). Schultz (2002), for instance, analyzing national surveys in three different geographies indicates an increase of 1.5% of the salary for each additional centimeter body height in labor markets in Ghana and Brazil and an increase of 0.4% in the US for an equivalent increase in height. In urban Brazil, Thomas and Strauss (1997) also find a positive effect of body height on the compensation. Behrman and Rosenzweig (2001), applying a national twin registry as data source, confirm a positive impact of height also for American employee wages: An additional inch in body height may lead to even three to five percent increase in salary. These findings are also in line with the ones of Heineck (2005) for male subjects in Germany.³¹

While the very most studies indicate positive compensation effects for both, women and men (e.g. Loh, 1993), there seem more studies about men. Likewise, the impacts for male employees seem to be more stable (Collins & Zebrowitz, 1995). Frieze, Olson and Good (1990), for instance, find higher starting salaries and a higher compensation progression only for taller male MBA students in the US. Harper (2000) identifies a significant wage premium for rather tall and a penalty for short men in the United Kingdom of +5.9% and -4.3% respectively. Male employees in the 80-89 percentile (around 6 feet tall) earn 5.9% more than male employees with average height. Furthermore, the shortest 10% earn 4.3% less than peers with a medium body height (see also Hamermesh and Biddle (1994) for penalties for short male employees).

Despite some research with ambiguous results (e.g., Frieze, Olson and Good, 1990; Persico, Postlewaite & Silverman, 2004; Hamermesh & Biddle (1994)), various studies document advantages through a larger body height also for females. Mitra (2001), for instance, reveals salary premiums of 2.5% per each additional inch of body height for women in managerial positions analyzing national surveys in the US (see Cawley (2000) for results from a national survey in the US indicating lower work-related compensation for shorter females). Böckerman and Vainiomäki (2013) using data on Finnish twins, yet also confirm a significant height-wage premium for women.³² Overall, body height does make a difference and impacts compensation for both genders: The taller an employee, the higher the chances for a higher income.

³¹ Here, for an upper limit of about 6.4 feet one standard deviation in height is associated with a wage premium of about four percent.

³² Interestingly, Böckerman and Vainiomäki (2013) cannot confirm height-wage premiums for men.

EMPLOYEE DISCRIMINATION BASED ON PHYSICAL APPEARANCE

In contrast to height and similar to findings with regards to body weight on employment chances, weight affects in particular the compensation of women, whereas the results for men are somewhat equivocal: Overweight females suffer penalties in occupational compensation (Frieze, Olson & Good, 1990; Mitra 2001; Han, Norton & Powell, 2011) and also have higher exposure to the risk of a low household and individual income (Sarlio-Lahteenkorva & Lahelma, 1999)³³. Harper (2000) estimates the wage penalty for females to be up to five percent. Similarly, Cawley (2000) and Han, Norton & Powell (2011) found that a delta of two standard deviations affects wages of women by seven percent and that a one-unit increase in BMI for females is directly associated with a 1.83% penalty in hourly wages, respectively. Register and Williams (1990) analyzing cohort data from the US even estimate the wage penalty for 18-25 year-old females to be more than 12%. Particularly in sales and service occupations, obese women are found to suffer from a compensation disadvantage (DeBeaumont, 2009). Consequently, Averett and Korenman (1996) find obese women to have a significantly lower economic status in comparison to normal weighted women.

The results for men are not as stable as the ones for women. Although there is some evidence indicating discrimination for men when it comes to overweight and work-related compensation, there are also studies suggesting no effects by body weight on the compensation of male employees: Similar to the results for women, Averett and Korenman (1996) also found over- and underweight men to suffer slight penalties. Loh (1993) find obesity to lower men's compensation growth rate by about 5.5%. In contrast, analyzing data from a national sample in Canada, Perks (2012) even show a slight positive BMI-income relationship for male employees. Similarly, McLean and Moon (1980) indicates a small positive effect of obesity on men's income for the US. Han, Norton & Powell (2011) on the other hand, found neither a direct nor an indirect BMI wage relation for men, implying that weight has no impact on the compensation of men (see also Register and Williams (1990), Mitra, (2001), Behrman and Rosenzweig (2001) and Böckerman and Vainiomäki (2013)).

In summary, we come to the conclusion, that weight of men may stimulate less discrimination on remuneration than that of women. If a woman is considered obese, the wage is more likely to be lower to start with and develop also more sluggish. For men, we cannot say the same with reasonable certainty.

³³ The latter is also a risk for extremely thin women (Sarlio-Lahteenkorva & Lahelma, 1999).

EMPLOYEE DISCRIMINATION BASED ON PHYSICAL APPEARANCE

2.3.1.3.3 Discrimination in Compensation through Aspects of Ethnic Type

Keeping in mind the reduced chances to enter the labor market in the first place and the disadvantages with regards to career perspectives compared to equally qualified white employees, the fact that skin color also influences the compensation of employees is not surprising. Besides a few studies indicating significant advantages for colored employees in certain industries, such as American Football (Guis & Johnson, 2000)³⁴ and academia (Gordon, Morton, & Braden, 1974), the vast majority of studies investigating compensation differences between black and white employees come to the result that dark-skinned employees are discriminated against with regards to work-related compensation.

The negative impact for skin color seems to be stronger for dark-skinned women than for men, as black women experience discrimination twofold: On average black men working full-time in the United States receive about 75% of the equivalent compensation of white employees (Kim, 2009). Black women, on the other hand, are found to get 84% of the financial compensation of white female employees. However, in addition to the penalty of being colored, black females also only earn 89% of black men's average salaries (Kim, 2009). Similarly, Greenman and Xie (2008), also analyzing the US labor market, reveal compensation disadvantages for females of all 14 minority groups tested compared to respective male employees of the minorities (see also Lapidus & Figart, 1998).³⁵

However, it seems that the earnings disadvantages for Blacks are not static over the entire occupational biography, at least not for men. Compensation discrepancies are found to be greatest in the beginning of the career and to decrease as the career progresses; however, the wage level of black employees is still lower compared to the one of their white peers. Renna and King (2007) find that the unexplained wage gap between the salaries of black to white employees is 35% for the first job out of school which reduces to still 13% with five years of work experience (see D'Amico & Maxwell (1994) and Oettinger (1996) for similar results). Nonetheless, the circumstance that colored employees tend to join the work force at lower hierarchical levels and the simultaneously increasing importance of people skills prevent a further wage harmonization between black and white employees (Borghans, Ter Weel & Weinberg, 2014; see Flanagan (1974) for a similar explanatory approach focusing more in education).

³⁴ The findings regarding wage discrimination in the NFL is ambiguous. While Mogull (1973 & 1981) did not find any wages discrimination, neither among black nor among white players, Kahn (1991) found discrimination against black players.

³⁵ Greenman and Xie (2008) tested the relative earnings of Chinese, Asian Indians, Koreans, Japanese, Cubans, Other Asians, Asian-whites, Black-Asians, Filipinos, Vietnamese, Native Americans, Puerto Ricans, Mexicans and Blacks. Nonetheless, interestingly the penalties for females were largest for white women due to a higher degree of work specialization in white families compared to those of minorities.

EMPLOYEE DISCRIMINATION BASED ON PHYSICAL APPEARANCE

A reduced pay for more colored/non-white employees is also found in economies outside of the Western world. For example, for labor markets in Peru (Napo, Saavedra, & Torero, 2007), in Brazil (Valle Silva, 1984; Telles & Lim; 1998) as well as in Cape Verde (Model, 2013) darker-skinned employees have disadvantages with regards to compensation for work.

Similarly, there are also studies regarding work-related compensation for the Maghrebi population implying a reduced salary level for colored employees. Duroy (2011), for example, estimates the salary disadvantage in France between employees with three years of professional experience with North African descent and workers whose parents are both born in France to four to 12% (see also Silberman & Fournier, 2006; Joseph, Lopez & Ryk, 2008; Aeberhardt et al., 2010).

Summing up, darker-skinned employees are found to earn less than white employees. Similar to previous findings, dark-skinned women suffer more from racial discrimination on labor markets when it comes to compensation than dark-skinned men.

2.3.2 Customer Discrimination

As opposed to employer discrimination, customer discrimination is more difficult to capture empirically. As customer discrimination is limited to the consumption behavior of clients only, it has predominately been investigated in the sales and services sector in terms of buying behavior and in professional sports with respect to stadium attendance and viewership of fans (Kahn, 1991; DeBeaumont, 2009). In the following we will show that despite the existence of employer discrimination, also customers with their (buying) behavior, at least indirectly, contribute to advantages of employees deemed attractive and to disadvantages of work force with rather unfavorable physical appearance in labor markets.

2.3.2.1 Customer Discrimination through Facial Appearance

Apparently, customers associate aspects of a person standing for a product or service directly with the offered good. Kamins (1990) show that the characteristics a product or service need to be congruent with the physical appearance of the person promoting or endorsing it (for the *Match-up Hypothesis* see also Kahle and Homer (1985)). This has in particular been found to hold true in sales and service-provider encounters. Following this, research has shown, particularly in occupations with a high degree of customer interaction, such as in sales, that clients are evidently more willing to consent to sales presentations of attractive customer service personnel (e.g., Reingen & Kernan, 1993). Consequently, facially attractive personnel on average generate higher revenues. Sachsida, Dornelles and Wagner Mesquita, (2003), for example, find a reward of approximately nine percent for facially attractive sales employees. Along the same

EMPLOYEE DISCRIMINATION BASED ON PHYSICAL APPEARANCE

lines, servers in gastronomy with an attractive facial appearance are met with greater generosity as they receive more gratuities from their clients (Lynn & Simons, 2000; see also Neumark, Bank & Van Nort, 1996) for discrimination in gastronomy)³⁶.

Nevertheless, discrimination of customers towards employees due to their facial appearance is not limited to sales and also applies to professional service positions. Better-looking executives of advertising firms are, for example, found to have higher revenues (Pfann et al., 2000). Biddle and Hamermesh (1998) investigating earnings of lawyers also find customer preferences for attractive attorneys and respective higher individual income. Moreover, in capital markets attractive investment fund managers are entrusted with more capital by their customers, although this is not justified by their past investment performance (Pareek & Zuckerman, 2011).

Furthermore, the impact of customer discrimination due to facial attractiveness is also overt in the labor market of academia as well as in the one of politics. Students that can be considered customers in the labor market academia (similarly voters in the labor market politics) evaluate the classes of attractive university teachers as more effective, if they are taught by attractive instructors, as opposed to classes instructed by less attractive ones. This finding has been confirmed both, in North America (Hamermesh & Parker, 2005) and in Europe (Süssmuth, 2006; Klein & Rosar, 2005). Higher expectations regarding increased work-related performance of facially attractive individuals seem also widely imbedded in public opinion, since many empirical studies have shown advantages for politicians with attractive facial appearances over their opponents on multiple levels. Bringing them occupational advantages in the form of more voters, handsome politicians are found to be on average more appealing and are thus more likely to win seats in democratic parliaments, for instance in the federal election in Canada (Efran & Patterson, 1974), in Germany (see Klein and Rosar (2005)) for the federal election and Rosar, Klein and Beckers (2008) for elections of the German state North Rhine-Westphalia), in Finland (Berggren, Jordahl & Poutvaara, 2010) as well as in the US House of Representatives elections (Praino, Stockemer, & Ratis, 2014).³⁷ Apparently, attractive humans are perceived to be more trustworthy and believable. Thus, their audience is generally, independent of respective abilities and performances, more receptive for arguments of facially attractive individuals (see also Reingen & Kernan, 1993).

³⁶ Again, the effect is found to be stronger for attractive females than for males.

³⁷ Marwick (1988) indicates that his facial appearance brought about a decisive advantage for John F. Kennedy over his opponent Richard Nixon (p. 392-393) in the US presidential election in 1960.

EMPLOYEE DISCRIMINATION BASED ON PHYSICAL APPEARANCE

Consequently, in order to comply with client expectations, labor markets have apparently adjusted to the customer discrimination effect: Nickson, Warhurst and Dutton (2005) find in their study for the retail and hospitality sector that more than 90% of the employers consider employee appearance to be either important or even critical to business success, which is accounted for in their hiring decisions as a critical recruitment criterion. Similar results were brought to light in an investigation by Martin and Grove (2002): By asking 100 human resource professionals they found that taking pride in appearance and showing a good attitude are the two most decisive criteria for entering the hospitality industry in the US.³⁸

2.3.2.2 Customer Discrimination through Body Gestalt

Discrimination by customers is not limited to the dimensions of facial attractiveness. Employees are also shown to alter buying and consumption behavior of customers based on their physical appearance with regards to their body gestalt. However, findings of research studies regarding consequences for employees are comparable to those obtained by investigations with respect to employer discrimination: As a general rule, height is in favor and weight is to the detriment of the employee with regards to customer behavior.

In particular men's body height seems to alter behavior of customers favorably. In particular, as males' increased body height is socially connoted with masculinity, athleticism and physical attractiveness (Jackson & Ervin, 1992) as well as associated with power and a higher status (Wilson, 1968; Jackson & Ervin, 1992). Proof of this has been obtained again in politics: Taller politicians are rated *greater* and are perceived by voters to have more leadership and communication skills (Stulp et al., 2013), supporting an indirect social effect based on height. On average those candidates running for the US presidential election that are considered tall, get more popular votes than their opponents and are also more likely to be reelected (Stulp et al., 2013; see also Sorokowski, 2010³⁹). The interpretation regarding indirect effects of height is further backed by the fact that US Presidents are found to be much greater in terms of height, than the average man from their respective birth cohort.

In addition to height, employees are also found to be discriminated against by customers with regards to weight. Similar to facial appearance, various investigations also regarding the weight of employees have confirmed the above mentioned necessity for alignment between the

³⁸ A recent analysis by Warhurst et al. (2009) of the service industry illustrates that employers actively seek out to hire employees that physically represent a corporate image to customers and stakeholders. Along the same line, Koernig and Page (2002) demonstrate that consumers' attitudes toward the service provider are maximized when service-provider attractiveness is congruent with the perception of the service.

³⁹ Sorokowski (2010) confirms the relation between perceived body height and occupational status by showing that assigned body size of politicians by voters varies with their support throughout political campaigns.

EMPLOYEE DISCRIMINATION BASED ON PHYSICAL APPEARANCE

(positive) characteristics of a product or service and the physical appearance of their representatives (Kahle & Homer, 1985; Kamins, 1990), oftentimes to the disadvantage of overweight employees. As a result, these are in labor markets, despite verifiable abilities, oftentimes connoted with negative characteristics by customers, e.g. to be lazy and lacking competence (Paul & Townsend, 1995; see also Harris, Harris, & Bochner, 1982; Rothblum, Miller, & Garbutt, 1988; Bellizzi & Hasty, 2000; Sartore & Cunningham, 2007). In particular exposed to disadvantages are overweight employees in communication- and interaction intensive occupational roles (e.g., Han, Norton & Stearns, 2009): Analyzing wage differences between overweight and normal weight employees, DeBeaumont (2009) find large discrepancies in sales and service occupations. Due to the high exposure to clients and intensive customer interactions, customer discrimination may, at least partially, explain the compensation differences between overweight and normal weight staff (DeBeaumont, 2009, Han, Norton & Stearns, 2009). In fact, DeBeaumont (2009) testing penalties for female workers with regards to occupational compensation in five broad occupational categories reveal significant compensation detriments for overweight workers only in those two requiring a higher degree of client interactions, namely sales and services.

Therefore, one can conclude that as a general rule taller employees are given advantages by their customers, whereas overweight staff suffers from negative discrimination by their customers, at least in those occupations involving much personal interactions.

2.3.2.3 Customer Discrimination through Ethnic Type

In line with the presented findings of previous chapters focusing on discrimination by employers, where darker skin has been identified to affect employees predominately negatively, there is strong indication that this prevails with respect to the treatment by customers. Evidence for this has, on the one hand, been furnished by studies investigating attendance behavior of sports fans to the ethnical mix of (home) sports teams and, on the other hand, again, by analyses of occupations with intensive customer interactions, such as in retail and the services industry (e.g., Lever, Kanouse & Berry, 2005).

Investigating survey data of employers in four major metropolitan areas in the United States, Holzer and Ihlanfeldt (1998), for example, find that the racial composition of customers indirectly determines recruiting decisions: The more Caucasian customers are expected by the businesses, the better the chances for white applicants to be employed; likewise, the higher the percentage of black customers, the better chances for job seekers that are themselves of color. However, the study also reveals a lower occupational compensation of black employees (see

EMPLOYEE DISCRIMINATION BASED ON PHYSICAL APPEARANCE

also Holzer (1991) for blacks' discrimination by customers with respect to job suburbanization). As a consequence, similar to facial attractiveness, hiring decisions are apparently to a considerable degree influenced by preferences of customers regarding the ethnicity and race of sales personnel. And for good reason from a business perspective, as Leonard, Levine and Giuliano (2010) show: Analyzing demographics of sales personnel, the study reveals (moderately) higher revenues, when the ethnical background of the retail staff and the customer base in the store areas resemble each other. Similarly, Ihlanfeldt and Young (1994) find evidence for customer discrimination with respect to employment of black employees in US fast-food restaurants. Combes et al. (2016) confirm ethnic customer discrimination for African immigrants in France.

In addition to the retail and services sectors, customer discrimination with respect to racial characteristics has also been investigated in the field of sport. Research here has taken advantage of the fact that customer behavior is relatively easy traceable with respect to sports teams' revenues, but in particular regarding fans' attendance in the stadium: For instance, there has been evidence for customer discrimination in baseball (e.g., Scully, 1973, Kahn, 1991) indicating that white supporters' dislikes result in lower sales for teams with more black players. Nardinelli and Simon (1990) also found evidence for the existence of fan discrimination, using the market for baseball cards as application field. Apparently, the race of a player is directly related to the value of the card depicting the respective player. As owner and coworker discrimination can be excluded in this setting, the results confirm the hypothesis of fan discrimination. Moreover, there is also evidence for racial discrimination by customers in ice hockey. Using the example of the National Hockey League (NHL) various studies presented indication that French-Canadians are discriminated against in terms of compensation due to customer discrimination (Jones & Walsh, 1988; see also Kahn (1991)) as well as underrepresentation in NHL teams (Longley, 2003).

Most studies in sports, however, investigating the impact of customer discrimination because of athletes' racial differences have been conducted in basketball. Burdekin and Idson (1991) not only find that fans favor watching players of their own race in the National Basketball Association (NBA), the study also verifies a higher attendance in the arenas, if the racial composition of the team resembled the one of the surrounding neighborhood (see Bodvarsson and Humphreys (2013) for recent evidence of customer discrimination with regards to capital inputs for sports facility construction). Further, Kahn and Sherer (1988) find that in NBA basketball replacing one black player by an equally skilled white player would have, *ceteris pari-*

EMPLOYEE DISCRIMINATION BASED ON PHYSICAL APPEARANCE

bus, increased the attendance of home games by more than 60%. Kahn and Sherer (1988) attribute this, like the salary discrepancy of about 20% to the disadvantage of black basketball players to customer (fan) discrimination.

However, apart from racial composition of the fan base around an NBA team, there have been other approaches proving fan discrimination in basketball. Kanazawa and Funk (2001), for instance, taking advantage of Nielsen rating data prove the existence of fan discrimination in basketball and illustrated the number of viewers of broadcasted NBA games to increase, if more white players competed in the game.⁴⁰ This implies not only a higher interest for white players, but also an indirect discrimination of colored players by the audience. Similarly, Brown, Spiro and Keenan (1991) even find evidence that fan discrimination negatively affects the compensation of colored NBA players.⁴¹

2.3.3 Co-worker Discrimination

Co-worker discrimination, the remaining source for discrimination on labor markets considering Becker's (1971) model, has with respect to employees' aspects of physical appearance disproportionately less intensively been examined than employer discrimination and discrimination by customers. The most decisive reason for a lower number of studies might be the measurability of discrimination in this context. On the one hand, preferences or even resentments of employees to work with colleagues with a certain physical appearance hardly show clearly assignable effects in macro-economic data. Also, productivity losses through co-worker discrimination might be difficult to prove on the micro-economic level either. And on the other hand, employees in an existing employment contract, as a general rule, do not have any incentives to publically state individual affectations or rejections regarding the physical appearance of their co-workers, as employees otherwise may risk disciplinary measures by the employer.

Despite these difficulties there have been some studies indicating both, the existence of co-worker discrimination with respect to aspects of physical appearance as such and the confirmation of the general mode of action regarding the three dimensions of physical appearance already outlined for employer discrimination and discrimination by customers: advantages for facially attractive, tall and white employees and disadvantages for rather facially unattractive, short and colored peers. However, it needs to be stressed that the studies that do exist in this

⁴⁰ As teams with higher viewership generate more revenues through advertising sales, Kanazawa and Funk (2001) concludes this to be the reason for the compensation gap between players of different races in the NBA.

⁴¹ Nonetheless, there are various studies indicating adaptation of salaries between black and white NBA players over time (Dey, 1997; see Hamilton, (1997) and for American Football Gius and Johnson, 2000) for indications of even lower salaries of white players at the lower end of the distribution, but also for higher salaries of white players at the opposite end of the distribution).

EMPLOYEE DISCRIMINATION BASED ON PHYSICAL APPEARANCE

regard either document the results of experiments (e.g., Mulford et al., 1998; Andreoni & Petrie, 2008) and hence cannot entirely represent realistic conditions in labor markets; or, they base their analysis on statements of intent by their subjects (e.g., Jasper & Klassen, 1990) that are difficult to examine on actual applicability in reality.

2.3.3.1 Co-Worker Discrimination through Facial Appearance

Various studies provide evidence that the visibility of an interaction partner's face (e.g., Bohnet & Frey, 1999, 1999a; Burnham, 2003) and a friendly facial expression in the form of smile (Scharlemann et al., 2001) increases the tendency for collaborative behavior. However, investigations regarding increased cooperation due to facial attractiveness are scarce in true labor markets. In fact, in contrast to discrimination by employers and by customers, co-worker discrimination with respect to facial attractiveness has predominantly been indicated by experiments. For instance, Mulford et al. (1998) found people in an experimental prisoner's dilemma setup, irrespective of their gender, to cooperate more likely with attractive individuals, since they per se expect an increased willingness to cooperate from their attractive peers. Similarly, Andreoni and Petrie (2008), investigating the cooperative behavior of teammates with their attractive peers in a public goods experiment, find that colleagues behave differently in the presence of attractive peers. Comparable to Mulford et al. (1998), Andreoni and Petrie (2008) show that individuals, in interactions with attractive teammates, anticipate upfront a more cooperative behavior from the attractive colleague and are, therefore, more willing to contribute and align to the common cause. Analyzing effects of facial appearance in an experiment in the context of ultimatum bargaining games, Solnick and Schweitzer (1999) reveal similar results. They show that facial attractiveness lead to more collaborative behavior towards attractive teammates, since the expectation of a reciprocal behavior increases.

Considering gender differences, Solnick and Schweitzer (1999) show in particular attractive men to benefit from increased collaborative behavior (see also Solnick, (2001)), as fellow players of both genders are more likely to cooperate with attractive men than with women.⁴² However, the findings regarding genders are controversial: Scharleman et al. (2001) show that smiling females can expect more collaboration from male colleagues. Nonetheless, the same study also implies disadvantages for kindly looking females when exposed to a female teammate. Thus, facial attractiveness may also be a disadvantage for females in some circumstances.

⁴² This finding is consistent with Solnick (2001) as well as Eckel and Grossman (2001) who independent of physical attractiveness prove a higher collaborative behavior towards male teammates.

EMPLOYEE DISCRIMINATION BASED ON PHYSICAL APPEARANCE

As a result, it seems too early to make a relevant statement about potential gender differences in the context of co-worker discrimination. Here as for the entire topic of co-worker discrimination as a whole, further research is needed, in particular in real-life settings.

2.3.3.2 Co-Worker Discrimination through Body Gestalt and Ethnic Type

Similarly, research with respect to discrimination, positive as well as negative, due to a colleagues' body gestalt or ethnicity is very limited. Nonetheless, the sparse evidence that does exist indicates confirmation of the effects presented for employer and customer discrimination. Jasper and Klassen (1990) analyzed the personal and social perceptions towards obese individuals. Among other things, the study investigated the desire to work with overweight people and revealed a remarkable reluctance to team up with overweight individuals.⁴³ Along with findings regarding weight in the context of employer as well as customer discrimination, the results are more considerable for obese women than for overweight men. Thus, in terms of collaboration overweight women are also seen more critically by (potential) colleagues than men. As we concluded above, overweight employees do face discrimination of which women are seemingly more impacted than men. With regards to height we cannot provide a feasible result about co-worker discrimination.

Regarding co-worker discrimination based on ethnic type, Kahn (1991) (see also Okrent and Wulf (1989) as well as Tygiel (1997)) presented anecdotal evidence in baseball.⁴⁴ However, as there is, at least to our knowledge, no academic study to this effect, we cannot conclude for sure discrimination by co-workers with regards to ethnic type.

2.4 CONCLUSION

Academic research has in particular proven physical appearance with respect to facial attractiveness, body gestalt and ethnic type of employees to influence labor market outcomes. Interestingly, in none of these dimensions a uniform and universally accepted measurement approach has been developed. To the contrary, new findings and the application of digital data processing, as for example in the case of measuring facial symmetry, rather lead to the development of additional and alternative methods to assess human physical appearance.

⁴³ The literal question asked was: "How much would you like to work with the person you read about on a 3-mo. work project?"

⁴⁴ When Jackie Robinson, the first black player in the Major League Baseball (MLB), entered the league, several of his teammates at the Brooklyn Dodgers protested against his line-up. One teammate even preferred to leave to team rather than to play with Robinson in one squad. Moreover, Dodgers' opponent, the St. Louis Cardinals, threatened to go on strike before competing with a team setting up a black player.

EMPLOYEE DISCRIMINATION BASED ON PHYSICAL APPEARANCE

However, despite the fact that the question, which characteristics determine attractiveness and what the best measures are to assess these is far from being decided, there is no doubt that physical appearance matters for employees in labor markets in all three dimensions facial attractiveness, body gestalt and ethnic type. It is undisputed, for instance, that facial attractiveness contributes positively to success in work-related settings. Facially attractive employees do not only have higher chances for employment, facial attractiveness seems also to influence career perspectives and the compensation of employees positively, as facially attractive employees are more likely to be promoted and earn higher incomes. While there is some indication for a taste-base advantage, facial attractiveness is predominately associated with higher professional competence, abilities and skills. Interestingly, this holds not only for employers, but to a comparable extent also for customers and co-workers. All three stakeholder groups have been shown to be influenced with regards to the perception of an employee's performance by his/her facial appearance, independent of the actually rendered performance. In fact, there is clear indication that employers and customers apply facial appearance unconscious of actual abilities as determinates for anticipated future performance. Thus, at least employers and customers tend to interact preferably with facially attractive employees, as they anticipate an increased performance or superior service from them. The effect of employees' facial appearance, similar to most other aspect of physical appearance, on co-workers' behavior, particularly with respect to collaboration outside experimental settings, has not been in focus of academic research. Here further research is urgently necessary.

Similar to facial attractiveness, employees' body gestalt also makes a difference with regards to labor market opportunities. Tall employees have also an advantage on the labor market. Both, tall men and women have increased chances for occupation as well as for promotions, since evidently body size is connoted with an increased social standing and represents strength. The positive discrimination of tall employees of both genders is also confirmed with respect to customers and to some extent also for coworkers. Nonetheless, while men and women are with respect to facial attractiveness and size treated fairly comparably, this is different with regards to weight. Whereas overweight women suffer remarkable disadvantages regarding likelihood of employment, career perspectives and compensation, weight drawbacks, if at all existing, are clearly less pronounced for men. Customers, however, seem to take a critical attitude towards both, overweight men and women.

Likewise, with regards to ethnicity of employees, we also found clear indications for discrimination in various cultural settings. However, the mode of action of discrimination through employees' ethnicity seems to diverge between employers and customers. While with

EMPLOYEE DISCRIMINATION BASED ON PHYSICAL APPEARANCE

respect to employment, career perspectives and compensation a darker skin tone is found to be predominantly detrimental for employees, results regarding customer discrimination are not as clear-cut. Yet, there is indication confirming disadvantages for employees with darker skin by customers as well. However, there is also evidence that clients prefer, and grant advantages to sales personnel, that resemble themselves with respect ethnic background. Employers seem to have recognized this and concede to their customers' will, for instance in recruiting and staffing decisions.

Although Becker's (1971) framework was established decades ago, it has been confirmed by multiple studies. Discrimination on the labor market can originate by employers, customers and co-workers for all aspects of physical appearance. The observation that employers are willing to comply with customer demands also with regards to personnel decisions, even more suggests that appearance-related discrimination of employees originates from various stakeholder groups, at least from both, employers and customers.

While there have been various studies about discrimination on labor markets with respect to physical appearance, there are some aspects that deserve closer scientific attention. In particular, we see three main areas: First, although it seems certain that both employers as well as customers drive discrimination based on physical appearance of employees, criteria that promote either employer or customer discrimination remain undetected. In order to further grasp employee discrimination a deeper understanding of the circumstances supporting the formation of prejudices of employees' stakeholders would be beneficial.

Second, as indicated above, in contrast to employer and customer discrimination, discrimination by co-workers is surprisingly scarcely been explored scientifically. Even though there are some studies that seem to confirm the findings around employers and customers at large also for co-workers, the research base available at present is still not satisfactory for final judgments in this regard. In particular, so far it remains unclear, if co-workers also outside of experimental settings in real labor market contexts are more willing to collaborate more with colleagues they find physically appealing, than with other co-workers. Therefore, future research would benefit from investigating the impact of attractiveness on co-workers' willingness to cooperate particularly in true working environments. I intend to shed light on this with the third research paper in this dissertation (chapter 4).

And third, until now there have been very little studies investigating labor market-related discrimination outside the framework proposed by Becker (1971). This is surprising, keeping in mind that the explicit importance of external stakeholders, in addition to internal stakeholders, such as supervisors, co-workers and customers, has been documented since the mid-

EMPLOYEE DISCRIMINATION BASED ON PHYSICAL APPEARANCE

1980s (Freeman, 1984). As a result, we account for this in the subsequent second research paper of this dissertation (chapter 3), where we investigate whether employees' physical appearance may also influence decision making of peers and external stakeholders.

DOES ATTRACTIVENESS STILL MATTER IF PERFORMANCE COMES INTO PLAY?

3 DOES ATTRACTIVENESS STILL MATTER IF PERFORMANCE COMES INTO PLAY? – AN ASSESSMENT OF THE ATTRACTIVENESS STEREOTYPE IN PROFESSIONAL SOCCER⁴⁵

3.1 INTRODUCTION

There is consensus in academic research regarding the positive impacts of an attractive physical appearance in working environments. Attractive individuals seem to have more occupational success and are treated more favorably than their less attractive peers. More attractive employees, for instance, have better chances to enter the labor market (Ruffle & Shtudiner, 2010; Lopez Boo, Rossi & Urzúa, 2013)⁴⁶, have better career perspectives (Chung & Leung, 1988; Frieze, Olson, & Russell, 1991; Biddle & Hamermesh, 1998; Pareek & Zuckerman, 2011) and receive a higher work-related compensation (Doorley & Sierminska, 2012; Scholz & Sicinski, 2015; Borland & Leigh, 2014).

Various studies have investigated the relation between employees' physical appearance and performance; particularly, whether more attractive employees are in fact more capable than their less attractive peers. Most studies conducted in this area have not identified capability advantages of the attractive work force (Möbius & Rosenblatt, 2006; Andreoni & Petrie, 2008; Pareek & Zuckerman, 2011; Deryugina & Shurchkov, 2013).⁴⁷ Thus, more attractive individuals do not necessarily perform better than less attractive individuals. Nevertheless, they are generally associated with higher performance.

In fact, according to the concept of the *attractiveness stereotype* others perceive physically attractive employees more capable and assess their performance to be superior (Dion, Berscheid & Walster, 1972), despite there being rarely any hard evidence backing this perceptions.⁴⁸ Various studies, e.g. in labor-related contexts, have also shown that individuals treat more attractive employees more favorably (Reingen & Kernan, 1993; Lynn & Simons, 2000; Lynn, 2009), meet them with more attention (Langlois et al., 1987; Samuels & Ewy, 1985) and have more trust in them (Pareek & Zuckerman, 2011) for no apparent reason. Moreover, as some research suggests, individuals in labor markets are even more likely to be guided in their behavior by their attractive counterparts (Andreoni & Petrie 2008; Deryugina & Shurchkov,

⁴⁵ Ulrich, F., Schmidt, S. L., & Torgler, B. (2016). Does Attractiveness still Matter if Performance Comes into Play? - An Assessment of the Attractiveness Stereotype in Professional Soccer. Unpublished Working Paper.

⁴⁶ See Bertrand and Mullainathan (2004) regarding chances of job applicants with different ethnic backgrounds.

⁴⁷ Only very few studies can prove increased performance of physically attractive individuals with respect to individual, measurable and work-related contributions (Ross & Ferris, 1981; Postma, 2014).

⁴⁸ Instead of the nowadays common term *attractiveness stereotype* Dion et al. (1972) used the expression *what is beautiful is good stereotype*.

DOES ATTRACTIVENESS STILL MATTER IF PERFORMANCE COMES INTO PLAY?

2013) and are, to a certain degree, even prone to base their decision making in favor of attractive individuals (Reingen & Kernan, 1993). So, the existence of the attractiveness stereotype in labor markets seems generally recognized and scientifically undisputed. Appendix Table 1 provides an overview of selected studies on the effects of physical attractiveness in work-related settings.

Nevertheless, there have been indications of increasing doubts about the general applicability of the attractiveness stereotype lately. Recent laboratory experiments have shown that in situations characterized by complete information about others' performance, individuals apparently do not base their behavior towards others on their physical appearance, but rather on their actual performance. The investigations by Deryugina and Shurchkov (2013) and by Andreoni and Petrie (2008) supply evidence in this regard: Both studies show their experiment participants to grant premiums to their respective facially attractive counterparts, if information of the counterparts' performance and contributions is unrevealed. However, if the raters in the two test settings are able to reasonably assess their counterparts' performances, the beauty premium disappears. In fact, participants in the experiment are rather found to base their decisions on the actual performance of their counterparts'. As these studies indicate that attractive individuals are not necessarily deemed superior per se, but only under certain circumstances, namely when actual performance is nontransparent and not accessible, they raise certain doubts about the acknowledged universal application of the attractiveness stereotype.

Until now however, these findings have only been obtained in laboratory experiments outside work-related settings. Hence, they do not incorporate true occupational performance. While in the mentioned experimental studies performance of (attractive) employees is measurable, transparent and clearly assignable to an individual, this is not the case in most real-life labor market research settings. For most evaluators in studies investigating attractiveness-driven advantages for appealing employees in real occupational settings it is rather questionable, if a reliable assessment of counterparts' performance is possible at all, and if so, whether evaluators can take it adequately into account: Work-related performance is in most studies nontransparent, impossible to measure reliably and difficult to assign to a single individual (e.g., Ruffle & Shtudiner, 2010; López Bóo, Rossi, & Urzúa, 2013). In fact, as stakeholders in most studies are required to perform instant assessments of (attractive) employees (Deryugina & Shurchkov, 2013) and since an adequate performance measurement would require time, high efforts and costs (Pareek & Zuckerman, 2011), it cannot be ruled out that raters rather base their assessments on the obvious, namely the physical attractiveness of the evaluation subjects, as opposed to take actual performance into account.

DOES ATTRACTIVENESS STILL MATTER IF PERFORMANCE COMES INTO PLAY?

As a result, real-life research studies have so far fallen short answering the question whether individuals in labor markets ground their assessments on attractiveness or base their judgments rather on transparently assessable actual performance, which would ultimately imply a remarkable limitation to the generally acknowledged attractiveness stereotype.

This paper intends to shed light on this question by analyzing the behavior of two employee stakeholder groups in a labor market where performance is individually assignable, measureable and transparent. Specifically, this paper analyzes the entire labor market of the Bundesliga, Germany's top-tier soccer competition and one of the most prestigious sports leagues worldwide. In order to examine, the guiding question of this research paper, we take advantage of the award Fußballer des Monats (English: "Player of the Month"; hereafter POM) that was bestowed in the Bundesliga over a time period of seven consecutive seasons. For the course of this investigation we take the results of the POM award, being comprised of the voting of the Bundesliga team captains, thus players' peers, and the interested non-professionals, as proxy for occupational success.

The remainder of this article is structured into five more chapters: The following chapter 3.2 introduces our field of application, the POM award and the German Bundesliga in more detail. In chapter 3.3 we analyze the peer voting, the first stage of each award round. Chapter 3.4 focuses on the analysis of the second award stage, namely the public voting. General implications are presented in chapter 3.5, followed by chapter 3.6 where we address limitations and provide our view on further research need. Finally, the paper concludes with chapter 3.7.

DOES ATTRACTIVENESS STILL MATTER IF PERFORMANCE COMES INTO PLAY?

3.2 THE SETUP OF THE PLAYER OF THE MONTH AWARD

In order to examine the guiding question we choose the field of sports as field of application. By investigating soccer as a labor market, we do not only take advantage of the favorable conditions of sport for organizational as well as behavioral research (Pfeffer & Davis-Blake, 1986; Day, Gordon, & Fink, 2012), but also of the fact that, in contrast to most other labor markets, performance here is visible and therefore transparent and rather easy to measure. Furthermore, through the determining characteristics of professional soccer, e.g. that its rules are clearly detailed and enforced by referees, performance in this labor market is standardized and comparable among employees. Moreover, it is beneficial to our investigation that relevant performance in soccer can be delivered in a limited period of time in a predefined setting only, namely during game time on the pitch. As a consequence individual employees' performances can be observed rather easily in this labor market.

One expression of acknowledging performance within the labor market soccer is the context of the POM award⁴⁹ in the Bundesliga, Germany's top-tier soccer league,⁵⁰ which we apply as field of application. During the seven consecutive Bundesliga seasons between 2003/04 and 2009/10 the POM award procedure was administered on a monthly basis in two sequenced steps, the peer votes and the public voting: In the peer voting round in each award month all 18 captains of the Bundesliga teams were asked to nominate one player each. In order to get the captains' opinion on which player to nominate for the POM award, the award-bestowing media reached out to the players individually, as a general rule right after the last game of an award month, and requested an on the spot nomination of a peer player, without reasoning by the nominator. In a second step, the nationwide public was asked to vote by phone or online

⁴⁹ An equivalent in the corporate world could, for instance, be an award, like *Employee of the Month*.

⁵⁰ With the season running from August to May and a winter break between mid-December and mid-/ end-January, the league consists of 18 teams playing each other twice per season; one home and one away game per fixture totalling in 34 game days per season. During the seven seasons under consideration, 2003/04 - 2009/10, the Bundesliga has experienced a steady growth, both in terms of revenues, and audience relevance as well as in terms of media coverage (e.g. DFL Deutsche Fußball Liga GmbH, 2013). Every game in the respective period was broadcasted live at least in pay-TV (some also in free TV). And after each game specialized sport programs and nationwide news formats several times showed summaries and discussions in publicly available free TV. During the seven season period under consideration 82.2 m visitors saw Bundesliga games in the stadium. Hence, during the seven season period on average every German resident saw at least one game of the Bundesliga in person in the stadium. Appendix Figure 1 shows the progression of fans visiting games in the Bundesliga during the seven seasons 2003/04 to 2009/10. As a result, the Bundesliga can be considered to be a truly public event and a matter of public interest in Germany. Due to the extensive public demand for soccer in the Bundesliga both in the stadium and via TV the performance of the players on the pitch can be considered to be publically available and transparent. The public interest in the Bundesliga and its events is also obvious taking the steady revenue growth of the league into account. In this regard the revenues from advertising and from the sale of media rights are particularly remarkable. Providing data of these two revenue streams as well as on the overall revenue progression of the league Appendix Figure 2 shows growing public demand and interest in the Bundesliga.

DOES ATTRACTIVENESS STILL MATTER IF PERFORMANCE COMES INTO PLAY?

for one player out of the three who have gained the most team captains' votes in the peer voting. Participation in the public voting was not restricted and involved no cost. However, in contrast to the peer voting, the public voting had a direct link to the physical appearance of the candidates: TV, internet and print media advertisements promoting the award and stimulating public participation in the vote (see Appendix Figure 3) displayed portrait pictures of the three players standing for election each month along with an introductory brief about each player.⁵¹

The POM award was jointly tendered and administered by independent and overarching institutions: a sports magazine, a sports TV channel and the German National Soccer Association (Deutsche Fußball Liga - DFL). The award itself was heavily advertised through multiple media channels, in particular by the bestowing institutions, which ensured public awareness for the award procedure and presentation.

In total, the POM award was presented in 65 award months by the tendering institutions.⁵² Thus, we investigate the impact of physical attractiveness on the success of 1,361 players from the perspective of two different stakeholder groups while taking more than 57,714 player performance observations into account. As a result, analyzing the context of the POM award, one can assume we analyze an entire labor market.

We apply the results of the POM award as proxy for personal occupational success of the players enabled by other stakeholders on their labor market. Due to the natural setup of the POM award, we, at least to our knowledge, are first to be able to investigate the question whether different labor market stakeholder groups are in fact guided by the attractiveness stereotype or rather driven by actual work-related performance given that it is transparently assessable.

Against the backdrop of the attractiveness stereotype one would expect advantages for attractive players in both voting stages of the award, regardless of the availability of performance data. To investigate this, we will analyze the two voting rounds separately, starting with the first award stage in each POM award month, the peer voting.

⁵¹ The portrait pictures of the players used in the internet and TV promotions are to a great extent the same ones used for assessing the players' physical appearance parameters applied in this research paper.

⁵² The award was not bestowed in months between seasons and sometimes suspended during winter break for a month or two.

DOES ATTRACTIVENESS STILL MATTER IF PERFORMANCE COMES INTO PLAY?

3.3 THE PEER VOTING**3.3.1 Theoretical Considerations****3.3.1.1 General Derivation**

According to classical concepts of rationality, rational decisions are based on all information available (von Neumann & Morgenstern, 1947; Simon, 1955; Simon, 1957; Becker, 1978). In situations, however, where resources and information are limited, various studies have shown heuristics to be supportive and very effective in human decision making by providing cognitive shortcuts or cognitive rules of thumb (Simon, 1955; Gigerenzer & Todd, 1999; Gigerenzer & Brighton, 2009; Gigerenzer & Goldstein, 1996; Martignon, Katsikopoulos & Woike, 2011). The application of heuristics ensures time-efficient decision making when only a reduced amount of relevant information is available (Kunda, 1999). According to Gigerenzer and Selten (2001) decision making is highly influenced by available or rather easily accessible heuristics that are applied situation-specific, like an adaptive tool box.

Mindful of the associated limited amount of reliable information on actual performance of others in the working life, it is consistent to assume that heuristics are also applied in occupational settings. This has been shown in particular in situations on labor markets where individuals are required to evaluate others with respect to their performance or performance potential (Jackson & Ervin, 1992; Pager, Western & Bonikowski, 2009; Han, Norton & Stearns, 2009; see also Gigerenzer & Goldstein, 2009). In alternative to difficult assessments of (actual) performance, evaluations are made on more obvious and easier accessible measures, such as physical appearance (Chung & Leung, 1988; López Bóo, Rossi, & Urzúa, 2013).

The application of heuristics when time and verifiable information is limited has also been proven with peer sportsmen (Bennis & Pachur, 2006; Bar-Eli, Avugos & Raab, 2006; Oskarsson, Van Boven, McClelland & Hastie, 2009). Both, on and off the pitch, athletes ground their situation assessments and consequently their decisions and choices of action on a few cues, rather than on detailed analyses of all information available. This applies to various types of sports, e.g. to baseball (McLeod & Dienes, 1993; 1996; McLeod, Reed & Dienes, 2001; Shaffer & McBeath, 2002; Gigerenzer, 2004), to handball (Johnson & Raab, 2003), to tennis (Serwe & Frings, 2006; Scheibehenne & Bröder, 2007) and to handball (Johnson & Raab, 2003⁵³).

⁵³ Applying handball as field of application, Johnson and Raab (2003) show that in team sports, players, when it comes to decision making involving peer players under time constraints, are guided by heuristics. Players are shown to resist evaluating multiple options in a situation on the pitch, simply due to time constraints. Therefore, they favor those options coming to their mind first. Thus, applying this *take-the-first heuristic* (Johnson & Raab, 2003, see also Gigerenzer & Goldstein, 2009) has proven rewarding for athletes, which ultimately incentivizes repeated application (Johnson & Raab, 2003).

DOES ATTRACTIVENESS STILL MATTER IF PERFORMANCE COMES INTO PLAY?

As a result and given the circumstance that captains in the peer voting of the POM award were asked spontaneously with the expectation of an instant response regarding their nomination of a peer player, it seems reasonable to assume that the selection process was also influenced by heuristics, namely by physical appearance. This seems the more plausible keeping in mind that captains have to evaluate roughly 900 player game observations per award month and are only allowed to nominate one peer.⁵⁴

Attractive people, thanks to their outer appearance, are shown to initially attract more attention in situations of human interactions, i.e. people pay more attention to more attractive persons (Langlois et al., 1987; Samuels & Ewy, 1985).⁵⁵ Moreover, Maner et al. (2003) document that observers in addition exhibit enhanced recognition memory about them. Furthermore, the attention span of other people for attractive individuals is longer than with less attractive ones. As a result, above average attractive people are more likely to be memorized and their actions are more likely to be remembered by others (Chaiken, 1979). We will next investigate the role of physical attractiveness in the peer voting by a most comprehensive analysis of players' appearance; not only by their facial attractiveness, but also by the players' body gestalt and their ethnic type.

3.3.1.2 Facial Attractiveness

Since the face carries the most weight in the perception of humans (Wade, Irvine & Cooper, 2004, p. 1083; see also Wade, 2000 and Scholz & Sicinski, 2015), facial attractiveness can be seen as the most important determinant in the assessment of human attractiveness. Apparently, a variety of facial features contribute to the overall evaluation of facial attractiveness (Hoss & Langlois, 2003); not one most important facial feature can be emphasized, but their concurrence is important (Cunningham, 1986).⁵⁶ Perrett et al. (1999) found symmetric faces to contribute positively to attractiveness evaluations.⁵⁷ Valentine, Darling & Donnelly (2004)

⁵⁴ There were 58,826 player game observations of Bundesliga players and 65 award rounds during the seven seasons. From discussions with Bundesliga club officials we know that Bundesliga teams spend a large part of their preparation time for next Bundesliga games with video analyses of previous games of the next opponent teams. Thus, the association of performance with the physical appearance of opponent players is intuitive.

⁵⁵ The higher attention regarding attractive people is even objectively measurable by the means of an increased level of the hormone testosterone (Roney, Mahler & Maestripieri, 2003).

⁵⁶ No one characteristic of physical appearance determines attractiveness alone: Cunningham (1986) measured the relative size of 24 facial features in 50 female faces. Positively correlated with attractiveness ratings were the neonate features of large eyes, small nose, and small chin, the maturity features of prominent cheekbones and narrow cheeks, and the expressive features of high eyebrows, large pupils, and large smile.

⁵⁷ Building upon early findings of Galton (1879), Langlois and Roggman (1990) introduced their thesis that averageness is attractive in the early 1990s. Hence, they claim that composite faces are more attractive than the 'component faces' selected to create them (see also Rhodes & Tremewan, 1996; Rhodes et al., 1999 and Hoss & Langlois, 2003).

DOES ATTRACTIVENESS STILL MATTER IF PERFORMANCE COMES INTO PLAY?

found both effects of facial geometry and symmetry, independently determining and contributing to perceived attractiveness.

Also in sports, facial symmetry has been proven to be a determining factor in evaluation processes. For example, Berri et al. (2011) presents evidence that sportsmen with facial attractiveness, measured by assessing their facial symmetry, achieve greater monetary compensation. Apparently, facially attractive quarterbacks in the American National Football League (NFL) are assessed to be more productive as they are paid greater salaries by their clubs. Moreover, there are further examples in academic research where facially attractive athletes are seen as more proficient, e.g. in professional cycling (Postma, 2014), professional tennis (Bakkenbüll & Kiefer, 2014) and, again, American football (Williams, Park & Wieling, 2010).

Consequently, similar to other labor markets, we assume facially attractive players in the Bundesliga to benefit from the attractiveness stereotype, as we expect the performances of players with a high degree of facial symmetry to be evaluated better than the ones of players with less facial symmetry. Thus, we expect these players to be more successful in the peer voting of the POM award.

3.3.1.3 Body Gestalt

Since one "cannot limit the beauty of people to facial attractiveness" (Loureiro, Sachida, & Cardoso de Mendonça, 2011, p. 258) the consideration of overall physical attractiveness characteristics must include other aspects, such as the body gestalt of an individual. A number of studies have demonstrated that height in particular is associated with both, physical attractiveness and occupational success by peers. Alicke, Smith and Klotz (1986), for instance, show body attractiveness to have a similar influence as facial attractiveness on the judgment of overall attractiveness of peers. Apparently, based on recent research, body height, as one means of physical appearance, implies higher chances for personal occupational forthcoming, as taller men are perceived to be more competent by their peers and to have more success in their professional careers (Herpin, 2005). In fact, taller men do not only have better chances in the hiring process, they also earn more than shorter men do (Frieze, Olson, & Good, 1990; Persico, Postlewaite, & Silverman, 2004⁵⁸; Heineck, 2005).

⁵⁸ Persico, Postlewaite, & Silverman (2004) found the height premium to be related to teenage height and therefore suggest that social effects might be an important channel for the emergence of access compensation of tall individuals. Moreover, the teenage height premium is partially mediated by a participation in high school sports and clubs. Both findings may strengthen the assumption of advantages of taller individuals both in interactive and physically intense labor market.

DOES ATTRACTIVENESS STILL MATTER IF PERFORMANCE COMES INTO PLAY?

In the context of sport, height seems the most determining factor among players in this labor market, when it comes to body gestalt.⁵⁹ In fact, height has been identified as one decisive advantage in sports, be it in basketball (Gift & Rodenberg, 2014), in rowing (Holway & Guerci, 2012) or in athletics (Wattie et al., 2014). Consequently, body height is presumably quite likely to be attributed with higher performance by peers, also in soccer, as many tackles are held in the air and taller players have advantages in their attempts to score header goals (Rosar, Hagenah & Klein, 2010). Consequently, we hypothesize a positive impact of body height on the peer voting outcome of the POM award.

3.3.1.4 Ethnic Type

In order to increase the quality of results with regards to the impact of physical appearance on the outcomes of the POM award, we also take the players' ethnic type into account, hence their skin color as well as their hair color. Research has seen some efforts investigating physical appearance premiums (or discounts) through the affiliation to skin color by peers. The majority of studies examining the relationship between skin color and attractiveness found predominantly white faces to be viewed more attractive (e.g., Wade et al., 2004; Kramer, Sharma & Jones, 2013). Similarly, Van den Berghe and Frost (1986) documenting a universal preference for light skin color, also indicate higher prospects of success for light-skinned peers.

Independent of the validity of a general preference in favor of white individuals or the alternative explanation, the hypothesis of an own-race bias, (Rhodes et al., 2005; Burke et al., 2013; see also Langlois & Stephan, 1977⁶⁰), light-skinned colleagues in many labor markets enjoy distinct advantages (Wilson, Tienda, & Wu., 1995; Darity & Mason, 1998; Tomaskovic-Devey, Thomas & Johnson, 2005; Pager & Shepherd, 2008, Kim, 2009), e.g. an increased amount of work-related authority (Smith, 2002)⁶¹. Thus, mindfully that the vast majority of team captains in the Bundesliga were Caucasian, allows for the anticipation, that light-skinned players had advantages in the POM award peer voting.

This seems to hold true against the backdrop of findings in the field of sport. Berri and Simmons (2009) not only find black athletes on the quarterback position in the NFL to be underrepresented, but also that some of their skills are not adequately compensated. Moreover,

⁵⁹ Alternative measures, such as relations of height and weight, e.g. BMI, as occasionally used in attractiveness research, are not appropriate for application here, since individuals' body weight fluctuate too strongly over time and thus cannot be accounted for appropriately.

⁶⁰ Langlois and Stephan (1977) found evidence for ethnocentric attractiveness evaluations of Anglo and Mexican-American children regarding other children.

⁶¹ See also Arce, Murguia and Frisbie (1987) for evidence of a higher socioeconomic status of Caucasians in Western societies.

DOES ATTRACTIVENESS STILL MATTER IF PERFORMANCE COMES INTO PLAY?

the circumstance that black quarterbacks, at least in the upper half of the salary distribution, experience disadvantages in their compensation, indicates that also industry experts, namely representatives of the clubs, are guided by aspects of physical appearance and are not immune to appearance biases through skin color.

Similar to the skin tone, also a person's hair color may indicate ethnic type. Along the lines of traditional evolutionary psychology, various studies have identified men's dark hair to signal positive traits. Apparently, dark hair seems to be associated with maturity and stability and hence influences the perceived look of men positively. Dark-haired men are perceived to be more attractive (Etcoff, 2000) and also favored by colleagues. They are also perceived to be more mature, but also smarter, more reliable and more successful (Lawson 1971; Matz, Kane & Ryan, 2007) than peers with lighter hair.⁶² Kalisch and Fischbach (2009) confirm the assumption for a preference of dark men's hair for the German-speaking region in central Europe.⁶³ Moreover, Hinsz, Stoesser and Matz (2013) find, irrespective of geographic influences, preferences of peers with respect to dark hair of men.

Based on the presented literature, we hypothesize also positive impacts for players with particular characteristics of their ethnic type on the peer voting. In particular, we expect advantages for players with rather light (white) skin and dark hair.

3.3.2 Empirical Model

Success in the peer voting stage of the POM award is determined by a nomination to the second voting round, hence being among those three players who had gained the most captains' votes.

We evaluate the influence of physical appearance on occupational success using a binary probit model where NOMINEE is the dependent variable and represents whether or not a player was nominated by the Bundesliga team captains to the next award round in the respective award month. NOMINEE takes a value of 1, if a player is designated for the next round and a value of 0 otherwise. More precisely, our full model specification for the analysis of the team captains' voting behavior is as follows:

$$\Pr(\text{NOMINEE}_i = 1) = \Phi(\beta_0 + \beta_1 \text{FACE}_i + \beta_2 \text{GESTALT}_i + \beta_3 \text{SKIN}_i + \beta_4 \text{BLACK}_i + \beta_5 \text{BROWN}_i + \beta_6 \text{DIRTYBLOND}_i + \beta_7 \text{RED}_i + \beta_8 \text{BLOND}_i)$$

⁶² See Ramachandran (1997) and Johnston (2010) for results regarding female hair colors.

⁶³ In a recent large-scale German single study in which 7,430 German speaking singles participated, dark hair was very famous: 48.9% of the participating females preferred a male partner with brown hair, 24.4% were in favor of a black-haired partner (Kalisch & Fischbach, 2009).

DOES ATTRACTIVENESS STILL MATTER IF PERFORMANCE COMES INTO PLAY?

$$\begin{aligned}
& + \beta_9 \text{ PERFORMANCE}_i + \beta_{10} \text{ RELTEAMPERF} + \beta_{11} \text{ AGE}_i \\
& + \beta_{12} \text{ PRIORGAMES}_i + \beta_{13} \text{ LOYALTY}_i + \beta_{14} \text{ GERMAN}_i \\
& + \beta_{15} \text{ GOALKEEPER}_i + \beta_{16} \text{ DEFENDER} + \beta_{17} \text{ MIDFIELDER}_i \\
& + \beta_{18} \text{ STRIKER}_i + \varepsilon_i
\end{aligned} \tag{1}$$

The first eight independent variables in the model are all measures of physical appearance: FACE is a measure of facial geometry depicting facial attractiveness. It is objectively measured applying web-based photo analysis software provided by anaface.com that has also been applied in similar research settings recently (e.g. Halford & Hsu, 2013; Hoegel, Schmidt, & Torgler, 2015). The software allows the calculation of an attractiveness score based on facial symmetry ranging between 1 and 10.⁶⁴ To eliminate measurement errors to the highest degree possible, we asked four raters to individually execute the necessary course of action applying anaface.com and took the mean of their respective picture scores for the analysis (see also Hoegel, Schmidt, & Torgler, 2015)⁶⁵. Regarding the players' body gestalt as a potential determining factor, we include GESTALT to the model. While being an obvious and distinct characteristic of a person's physical appearance, GESTALT is a measure for the players' body height in centimeters. Data were made available by the sports data provider Impire AG, the official data provider of the Bundesliga during the entire course of the seven seasons under consideration. In order to investigate the explanatory contribution of players' ethnic types to the award result, we add SKIN and the hair color variables BLACK, BROWN, DIRTYBLOND⁶⁶, RED and BLOND to the model. SKIN for each player was, similar to FACE, determined by four raters independently applying the in the field of dermatology accepted six-point Fitzpatrick

⁶⁴ The software first requires uploading photographs of persons' faces to be evaluated and then to place 17 markers at different predefined facial landmarks. The software measures distance ratios such as the one of nose to ear length, the ratio of nose width to face width, the ratio of mouth width to nose width, the ratio of face width to face height or the ratio of eye width in comparison to inner ocular distance (Halford & Hsu, 2013) while ignoring appearance features such as eye, skin and hair color or body-related features such as body height. Furthermore, avoiding distortions by picture layout such as background and color vs. black-and-white mentioned by Hamermesh and Parker (2005) we took advantage of a single source, namely the official website of the sports magazine Kicker, one of the overarching institutions which organized the POM award. From this website we obtained the vast majority of the player portrait pictures that were in the absolute majority also in accordance with the players' official autograph cards. Moreover, our overall approach ensures comparability of the overall conditions such as high picture resolution or a straight and relaxed look directly into the camera lens (Hoegel, Schmidt, & Torgler, 2015).

⁶⁵ Hoegel, Schmidt, & Torgler (2015) followed a comparable approach: They asked two independent raters to evaluate two player photographs with the anaface software.

⁶⁶ This variable comprises dirtyblond as well as middle brown hair.

DOES ATTRACTIVENESS STILL MATTER IF PERFORMANCE COMES INTO PLAY?

scale (Fitzpatrick, 1988) measuring the lightness of the players' skin.⁶⁷ A very light skin (represented by Fitzpatrick skin type I) accounts for a value of 1. An extremely pigmented skin (represented by Fitzpatrick skin type VI) accounts for the value of 6. All other skin types account for values between 1 and 6, respectively. The variable SKIN represents the simple mean of the four raters' assessments of the players' skin types. Likewise, the hair color of the Bundesliga players was also evaluated by four independent raters.⁶⁸ In line with Fitzpatrick (1988) and Johnston (2010)⁶⁹, the raters were instructed to assign players the hair color categories black, brown, middle brown/dirty blond, red and blond which are all added as dichotomous variables to the model.

As the POM award is supposed to reward the best player within an award month, players' accomplishments on the soccer field need to be accounted for in our model. We approximate players' individual performance during an award month by adding the variable PERFORMANCE. Having complete performance data of all players in any Bundesliga game on the pitch of the season 2003/04 to 2009/10 available, we focus on those 57,714 player performance data points attributable to a month in which the POM award was bestowed. In order to be able to compare the individual player performances in each award month, we take the average of the performance scores, also provided by Impire, for each player of every game the player played during a month in which the POM award was bestowed as reference for individual performance.⁷⁰ The performance scores for each player in each game in an award month are based on 67 predefined single performance measures.⁷¹ This results in a total of 20,810 average player award month PERFORMANCE observations.

⁶⁷ Basis for the assessment was a publication by the Australian Government (2011). The document visualizes the six Fitzpatrick skin types by a photograph of individuals representing each skin type. Based on this manual the raters were asked to assign each player on the basis of individual portrait photographs to a Fitzpatrick skin type. The manual of the Australian Government (2011) can be found in the Appendix, Figure 7.

⁶⁸ In the very few cases the four raters did not reach a consistent verdict regarding the players' hair color, a fifth independent rater brought about a final decision.

⁶⁹ In addition to our categories Johnston (2010) additionally distinguishes *blond* and *light blond*.

⁷⁰ Since some game days took place right after the season start or the winter break as well as immediately before the winter break or season's end, they were not captured in an award month.

⁷¹ The performance score for each player in a game is comprised from 29 performance variables that are independent of the position of the player (examples of performance variables independent of the position are whether the *team won the respective game*, whether the player saw a *yellow* or a *red card* or lost the *crucial tackling immediately before a goal against*). Moreover, there are specific performance measures for each of the four positions goalkeeper (ten additional performance variables; examples are *number of goals against*, *number of crosses saved* and *number of penalties saved*), defender (ten; examples are *number of tacklings won*, *number of long passes* and *number of assists for shots outside the box*), midfielder (nine; examples are *number of assists*, *number of assists for shots inside the box* and *number of tacklings taken*) and striker (eight; examples are *number of ground tacklings won*, *number of header tacklings won* and *number of team goals*) and thus part for the performance score calculation of each player irrespective of the position on the pitch. Hence, the performance score takes position-independent and position-specific variables into account. The performance evaluations were accomplished by four professional Impire raters per Bundesliga game, two live in the stadium and two reevaluating

DOES ATTRACTIVENESS STILL MATTER IF PERFORMANCE COMES INTO PLAY?

As the results of the peer voting could have been influenced by the performance and success of players' teams, the variable `RELTEAMPERF` captures the accomplishments of the clubs during the award months. `RELTEAMPERF` takes the expectable performance level into account and represents the discrepancy between the average points a team collected during a game in an award month and the point average the team earned during a game in the previous season.⁷²

`AGE` and `PRIORGAMES` are measures for the players' experience, as there might be tendencies for the captains to assign veteran peer players with more Bundesliga experience an advantage in the peer voting. Thus, while `AGE` captures the players' age in years at the end of the respective award month, the variable `PRIORGAMES` represents the number of games the players have played in the Bundesliga so far. Since team captains could be tempted to reward peer players for their loyalty for a club, instead of real performance on the pitch, we control for `LOYALTY`. This variable is a measure of the loyalty of the players towards their current teams and accounts for the number of games the players have played for their clubs in the Bundesliga. Likewise, the dichotomous variable `GERMAN` captures the players' nationalities and takes a value of 1 if the respective player has the local nationality (German) and 0 otherwise. We add this variable in order to account for the fact that the own-race bias (e.g., Rhodes et al., 2005; Kelly et al., 2005; Burke et al., 2013) mentioned above, is not only bound to the players' physical appearance, but also by their origin.

Moreover, the dichotomous position variables `GOALKEEPER`, `DEFENDER`, `MIDFIELDER` and `STRIKER` capture the position of the players on the pitch and hence their corresponding role on the field. By including these variables we control for potential captains' biases with regards to players' roles and responsibility on the pitch, e.g. due to the fact that strikers on average score more goals than, for instance, goalkeepers or defenders. Each position variable takes a value 1, if the player is deployed on the respective playing position and a value of 0 otherwise. The variable `CLUB` accounts for club-fixed effects and measures preferences or resentments regarding the club affiliation of a player. `AWARD_ROUND` accounts for award

game situations afterwards on tape. All performance measures were then aggregated and by the use of a predefined algorithm converted into a player's performance score per game. Consequently, we use the performance scores as proxy of *actual* PERFORMANCE of the players in the Bundesliga during the seasons under consideration.

⁷² Effects through team promotions and relegations were accounted for by assessing the points for the first promoted team (leader of Bundesliga 2 at the end of the season) with the number of points collected by the best relegated Bundesliga team of the past season. Similarly, the points collected by the second-worst team of the previous season served as expectation for the second best team in Bundesliga 2 during the former season. And so forth, if applicable.

DOES ATTRACTIVENESS STILL MATTER IF PERFORMANCE COMES INTO PLAY?

rounds and may take values between 1 and 65. By controlling for this variable we take potential effects associated to certain award month into consideration. Table 3.01 provides a summary of the descriptive statistics of the peer voting.

Table 3.01 Descriptive Statistics of the Peer Voting

Dependent Variable			M	SD	MIN	MAX
NOMINATION ¹	Nomination to the public voting (Yes = 1; 0)		0.0093		0	1
Independent Variables						
FACE	Average facial symmetry score of four raters		7.5554	0.5076	5.3050	8.9100
GESTALT	Body height in centimeters		183.2018	6.4119	164	202
SKIN	Average facial symmetry score of four raters		2.6278	1.2524	1	6
Hair						
BLACK	Player's hair color (Black = 1; 0)		0.2619		0	1
BROWN	Player's hair color (Brown = 1; 0)		0.4442		0	1
DIRTYBLOND	Player's hair color (Dirtyblond/middle brown = 1; 0)		0.1059		0	1
RED	Player's hair color (Red = 1; 0)		0.0069		0	1
BLOND	Player's hair color (Blond = 1; 0)		0.1809		0	1
PERFORMANCE	Average of performance scores for games in award month		5.8131	1.1064	0.8000	10.0000
RELTEAMPERF	Discrepancy between the average points player's team collected during a game in award month and point average the team earned on average during a game in the previous season		-0.0185	0.7115	-1.8529	2.1176
PRIORGAMES	Number of games played in Bundesliga		78.289	78.6628	0	555
LOYALTY	Number of prior games for the current own team		1076.472	1120.62	1	7996
AGE	Player's age in years at game day		26.7802	4.1215	16.9972	40.6027
GERMAN	Player's nationality (German = 1; 0)		0.4342		0	1
Position						
GOALKEEPER	Player's position is goalkeeper (Goalkeeper = 1; 0)		0.0662		0	1
DEFENDER	Player's position is defender (Defender = 1; 0)		0.2969		0	1
MIDFIELDER	Player's position is midfielder (Midfielder = 1; 0)		0.4256		0	1
STRIKER	Player's position is striker (Striker = 1; 0)		0.2111		0	1

In order to evaluate the influence of the individual attributes of physical appearance on the peer voting stage of the POM award, we run a total of eight different specifications considering a variety of potentially influential variables. While we initially, in specifications (1) to (4), consider all four dimensions representing physical attractiveness separately, we provide in

DOES ATTRACTIVENESS STILL MATTER IF PERFORMANCE COMES INTO PLAY?

specification (5) an analysis including all eight attractiveness variables. Subsequently, we increase the scope of the observation by augmenting the number of independent variables in each consecutive specification. By doing so, we test for stable explanatory contributions to the results of the peer voting. Thus, specification (6) additionally includes individual player performance, while specification (7) incorporates also measures regarding the relative team performance, the control variables regarding player's experience as well as variables representing their loyalty, nationality, position-fixed and club-fixed effects. In addition, specification (8) takes the effect related to the respective award round into account. Finally, specification (9) only incorporates those variables that have had a significant effect in previous specifications. It contains variables regarding players' hair color, their individual performance as well as the relative performance of the players' teams, their position on the pitch and fixed effects with respect to players' clubs and award rounds.

3.3.3 Results

As Table 3.02 depicts, in the analyses between the dependent variable NOMINEE and the different variables representing physical appearance in specifications (1)-(4) none of the appearance variables shows a statistically significant effect. Likewise, we cannot report significant effects of appearance variables for specification (5), where we combine all appearance-related variables in one analysis, with one exception, namely a slight positive impact ($p < .10$) for players with dirtyblond/light brown hair.

DOES ATTRACTIVENESS STILL MATTER IF PERFORMANCE COMES INTO PLAY?

Table 3.02 *Probit Model of the Peer Voting*

Dependent Variable	NOMINATION									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
FACE	-0.0470 0.0823				-0.0198 0.0921	0.0392 0.1057	0.0570 0.0906	0.0519 0.0890		
GESTALT		0.0060 0.0067			0.0060 0.0069	-0.0037 0.0064	-0.0032 0.0066	-0.0032 0.0064		
SKIN			0.0278 0.0273		0.0833 0.0533	0.0815 0.0555	0.0749 0.0477	0.0701 0.0471		
Hair ⁷³										
BLACK				Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	
BROWN				0.0734 0.1087	0.2141 0.1660	0.1962 0.1593	0.1910 0.1298	0.1899 0.1227	n.s.	
DIRTYBLOND				0.2100 0.1310	0.3818 [†] 0.1970	0.3924 [†] 0.2057	0.4794** 0.1814	0.4949** 0.1718	0.3619*	
BLOND				-0.0169 0.1189	0.1822 0.2002	0.2101 0.1856	0.3238 [†] 0.1665	0.3309* 0.1597	n.s.	
PERFORMANCE						0.8522*** 0.0435	0.7905*** 0.0462	0.8272*** 0.0490	0.8213*** 0.0502	
RELTEAMPERF							0.3146*** 0.0523	0.3516*** 0.0537	0.3567*** 0.0535	
PRIORGAMES							-0.0004 0.0008	-0.0004 0.0008		
LOYALTY							-0.0000 0.0000	-0.0000 0.0000		
AGE							0.0001 0.0164	0.0013 0.0164		
GERMAN							0.0981 0.0942	0.1103 0.0923		
Position										
GOALKEEPER							Ref.	Ref.	Ref.	
DEFENDER							-0.4134 [†] 0.2067	-0.3949 [†] 0.2016	-0.3976* 0.1828	
MIDFIELDER							-0.0186 0.1862	0.0171 0.1820	n.s. 0.1820	
STRIKER							0.5063** 0.1939	0.5461** 0.1908	0.5517** 0.1589	
CLUB FEs	NO	NO	NO	NO	NO	NO	YES	YES	YES	
ROUND FEs	NO	NO	NO	NO	NO	NO	NO	YES	YES	
Observations	20810	20810	20810	20666	20666	20666	19675	19675	19675	
Cluster	1361	1361	1361	1351	1351	1351	1268	1268	1268	
McFadden's R ²	0.000	0.001	0.001	0.003	0.008	0.319	0.381	0.390	0.388	
Observations correctly classified	99.06%	99.06%	99.06%	99.06%	99.06%	99.02%	99.00%	99.00%	98.99%	

Abbreviations and notes: Not significant (n.s.); Reference category (Ref.); Robust standard errors in bold. †, *, ** and *** indicate statistical significance at the 10% ($p < .1$), 5% ($p < .05$), 1% ($p < .01$) and .01% ($p < .001$) level, respectively

Nonetheless, we observe a constant positive effect of individual player PERFORMANCE on the outcome whether a player is nominated by the team captains in all specifications this variable is incorporated ($p < .001$ in specifications (6)-(9)). Likewise, we find a similar effect of relative team performance in all specifications to which we include the variable RELTEAMPERF ($p < .001$ in all specifications (7)-(9)).

⁷³ The variable RED hair was omitted in the model.

DOES ATTRACTIVENESS STILL MATTER IF PERFORMANCE COMES INTO PLAY?

Apparently, the control variables representing the experience of the players (variables AGE and PRIORGAMES), their loyalty (LOYALTY) as well as indicating the players' nationality (GERMAN) do not reveal any statistically significant influence on the captains' decision which player to nominate for the POM award (specifications (7) and (8)).

Interestingly, however, as depicted by specifications (7)-(9), the position a player is deployed on, does influence the selection behavior of the Bundesliga team captains: While GOALKEEPER being the reference variable in the analysis, it seems that STRIKERS have a higher chance to be nominated to the next round than players on other positions ($p < .01$ in all specifications (7)-(9)). To the contrary, DEFENDERS are less likely to be selected for the public voting stage of the POM award by the team captains ($p < .1$ in specifications (7) and (8); $p < .05$ in specification (9)).

Especially since selection processes per se are very difficult to predict, the quality of our model can be seen as favorable. This holds in particular against the backdrop of the fact that in this case, as mentioned, captains could choose from a myriad of players each award month. In particular with respect to the increase in McFadden's R^2 in specifications (6) - (9), it becomes obvious that PERFORMANCE is not only a decisive factor for team-captains' decision making, but consequently also improves the validity of the model remarkably.

3.4 THE PUBLIC VOTING

3.4.1 Theoretical Considerations

3.4.1.1 General Derivation

There is indication that sports fans, when it comes to evaluations of and expectations towards performance base their reasoning on information cues they have available. Many studies have proven that sport fans, similar to athletes, base their judgments on heuristics, too. This has been shown in the prediction of game outcomes in basketball (Heit, Price & Bower 1994; Todorov, 2003), in assessing ice hockey players' career performance (Snook & Cullen, 2006), forecasting the results of grand slam tennis tournaments (Serwe & Frings, 2006; Scheibehenne & Bröder, 2007) as well as assessing the throwing accuracy of basketball players (Gilovich, Vallone & Tversky, 1985). Also, lay sports fans in soccer use heuristics for their assessments. Gröschner and Raab (2006), investigating the behavior of fans in the Bundesliga as well as in the FIFA World Cup 2002, find soccer fans applying heuristics to make even more accurate predictions than soccer experts (see also Andersson, Edman & Ekman, 2005). Similarly, Pachur and Biele (2007), analyzing the European Soccer Championships 2004, prove that non-profes-

DOES ATTRACTIVENESS STILL MATTER IF PERFORMANCE COMES INTO PLAY?

sionals in soccer apply heuristics often and successfully for their forecasts regarding performance and game outcomes (see also Ayton, Önköl and McReynolds (2011) for the application of heuristics in the English Football Association trophy).

Mindful of the circumstance that the soccer fans participating in the POM award were provided with a direct link to players' appearance, namely by portrait pictures of the three nominees in the respective award round, aspects of physical appearance may guide evaluation decisions also for non-professional fans. Similar to our analysis of the peer voting, in the following we provide a comprehensive analysis taking the three dimensions of physical appearance, facial attractiveness, body gestalt and ethnic type into account.

3.4.1.2 Facial Attractiveness

Various studies have proven that facial appearance can serve as an indicator for expected performance and guide decision making for non-professionals who are obliged to form opinions and to make decisions in limited time and with incomplete information. This may lead to choosing individuals that seem to have characteristics signaling a certain performance level. For instance, it has been shown in occupational settings that facially attractive individuals seem to evoke trust, resulting in preferences for these individuals (Hamermesh & Biddle, 1994; Ruffle & Shtudiner, 2010; Pareek & Zuckerman, 2011; López Bóo, Rossi, & Urzúa, 2013). Therefore, the decision maker dares a leap of faith regarding expected performance based on the chosen applicants' facial attractiveness. The effect of trusting attractive individuals has also been proven in politics, where attractive politicians were more likely successfully running for a democratic office (Efran & Patterson, 1974; Marwick, p. 392, 1988; Klein & Rosar, 2005; Hamermesh, 2006), and in presumably free markets, where attractive corporate leaders coming into office caused rising share prices of their companies (Halford & Hsu, 2013).

Facial attractiveness has also proven to influence assessments and decision making in sports-related contexts with regards to supporters. For instance, Postma (2014) finds facial attractiveness to signal endurance to observers of the cycling sport, thus stressing the importance of facial attractiveness in the light of performance anticipation in sports.⁷⁴ Investigating soccer, Hoegle, Schmidt, & Torgler (2015), explore the effect of facial attractiveness of sports stars on fans' perceptions and reveal that the assessment of players' skills and capabilities is biased

⁷⁴ The study relates physical appearance directly with actual performance provision in sports: Respondents of both genders rated better cyclists to be more facially attractive.

DOES ATTRACTIVENESS STILL MATTER IF PERFORMANCE COMES INTO PLAY?

by facial symmetry.⁷⁵ Therefore, similar to the peer voting, we expect a positive relationship between facial attractiveness, measured by facial symmetry, and the chances to be successful in the public voting of the POM award.

3.4.1.3 Body Gestalt

Similar to peers, body height is also associated with increased attractiveness, prestige and performance abilities by independent laypersons. In fact, males' large body height is socially connoted with masculinity, athleticism and physical attractiveness by independent raters (Jackson & Ervin, 1992) as well as associated with power and a higher status (Wilson, 1968; Jackson & Ervin, 1992). For example, taller politicians are rated to have certain greatness about them which manifests itself in being perceived to have more leadership and communication skills (Stulp et al., 2013).

Also in sports, independent persons attribute body height with increased performance; laypersons assume, for instance, better performance of taller soccer players through their physical conditions, as they may engage more effectively in challenges in the air (Rosar, Hagenah & Klein, 2010). Hence, we anticipate also a positive relationship between body height and the results in the public voting of the POM award.⁷⁶

3.4.1.4 Ethnic Type

The influence of skin color on forming an opinion in the absence of complete information and under time constraints is for laypersons rather ambiguous and follows the theoretical considerations for peers discussed above. It seems that laypersons do have preferences and tend to favor persons with a particular skin color (Lever, Kanouse & Berry, 2005). However, the preference depends on circumstances and situations. Again, there is the tension between the own-race bias (Langlois & Stephan, 1977; Rhodes et al., 2005; Leigh & Susilo 2009; Burke et al., 2013) and the anticipated universal preference for white individuals that has been proven in labor market situations (Bertrand & Mullainathan, 2004; see also Arceo-Gomez & Campos-Vazquez, 2014).

Despite predominately conducted for females, the vast majority of research activities on the behavior towards individuals with certain hair colors show advantages for blond women and dark-haired men. In situations where blond females or dark-haired males seek assistance or

⁷⁵ Hoegle, Schmidt, & Torgler (2015) evaluating fans' perception on soccer stars' personal characteristics show a positive significant effect of the evaluation of behavior, skills and personality of soccer players based on their facial attractiveness, in terms of facial symmetry.

⁷⁶ It must be noted, however, that in contrast to facial attractiveness and ethnic type, for height the mentioned advertisements depicting players' portrait pictures do not represent a visual cue in favor of physical appearance.

DOES ATTRACTIVENESS STILL MATTER IF PERFORMANCE COMES INTO PLAY?

support, also unfamiliar persons are more supportive (Guéguen, 2012; Guéguen & Lamy, 2013) or generous (Price, 2008; Lynn, 2009) than towards persons with other hair colors. Consequently, we expect players with rather light skin and dark hair to be more successful in the public voting of the POM award.

3.4.2 Empirical Model

In comparison to the peer voting, the independent variables of the public voting remain unchanged. However, the dependent variable changes to WINNER. It represents whether or not a player preselected in the peer voting round gained the most fan votes and hence was elected POM. WINNER takes a value of 1, if a player is awarded POM in the respective award month and a value of 0 otherwise. The setup of the POM award, 65 award rounds with three nominated players out of which one winner per award month is selected, results in 195 observations in this award stage.

As we apply the same analysis approach as in the peer voting, we use the identical setup of specifications, except that we, for obvious reasons, do not consider a control variable for award-round-fixed effect. Thus, we also abstain from an equivalent to specification (8) in this analysis. Table 3.03 depicts the summary of the descriptive statistics of the public voting.

DOES ATTRACTIVENESS STILL MATTER IF PERFORMANCE COMES INTO PLAY?

Table 3.03 Descriptive Statistics of the Public Voting

Dependent Variable		M	SD	MIN	MAX
WINNER	Election to POM (Yes = 1; 0)	0.3333		0	1
Independent Variables					
FACE	Average facial symmetry score of four raters	7.5222	0.5253	5.9175	8.6425
GESTALT	Body height in centimeters	183.8718	6.4311	168	196
SKIN	Average facial symmetry score of four raters	2.7500	1.2412	1	6
Hair					
BLACK	Player's hair color (Black = 1; 0)	0.2256			
BROWN	Player's hair color (Brown = 1; 0)	0.4666		0	1
DIRTYBLOND	Player's hair color (Dirtyblond/middle brown = 1; 0)	0.1589		0	1
RED	Player's hair color (Red = 1; 0)	0.0000		0	1
BLOND	Player's hair color (Blond = 1; 0)	0.1487		0	1
PERFORMANCE	Average of performance scores for games in award month	7.8174	0.6933	5.9666	10.0000
RELTEAMPERF	Discrepancy between the average points player's team collected dur- ing a game in award month and point average the team earned on average during a game in the pre- vious season	0.6424	0.6367	-1	2.1176
PRIORGAMES	Number of games played in Bun- desliga	93.1615	83.9064	1	417.5
LOYALTY	Number of prior games for the current own team	1073.4900	1136.4560	27.5000	5916.0000
AGE	Player's age in years at game day	26.4171	3.8311	18.5863	37.1342
GERMAN ¹	Player's nationality (German = 1; 0)	0.4410		0	1
Position					
GOALKEEPER	Player's position is goalkeeper (Goalkeeper = 1; 0)	0.0923		0	1
DEFENDER	Player's position is defender (Defender = 1; 0)	0.0769		0	1
MIDFIELDER	Player's position is midfielder (Midfielder = 1; 0)	0.3487		0	1
STRIKER	Player's position is striker (Striker = 1; 0)	0.4820		0	1

3.4.3 Results

As Table 3.04 shows, again, we do not observe stable, statistically significant effects of any physical appearance variable. In line with the peer voting, the physical appearance of the players does not seem to have an influence on the decision making of the public in the context of the POM award at all. This holds true for specifications analyzing appearance variables separately (specifications (10)-(13)), for the analysis of all appearance variables combined (specification (14)) and for the analyses incorporating control variables (specification (15) and (16)).

In contrast, and also similar to the results of the peer voting, individual PERFORMANCE is the only variable with a stable effect on the dependent variable WINNER throughout all specifications of our model containing the variable ($p < .05$ in specification (15) and

DOES ATTRACTIVENESS STILL MATTER IF PERFORMANCE COMES INTO PLAY?

(16); $p < .01$ in specification (17)).⁷⁷ Furthermore, it is interesting to note that team performance is apparently not at all relevant for the fans' voting behavior and hence, as opposed to individual performance, does not determine the outcome of the winner selection.

The only control variable with a slight significant effect is GERMAN. Hence, domestic Bundesliga players enjoy a slight advantage over their foreign peers, in the public voting. None of the remaining control variables depict a significant impact on the public voting of the POM. Neither the variables controlling for players' experience (AGE and GAMESPRIOR), nor their loyalty (LOYALTY) influenced the public voting with statistical significance. Moreover, and also in contrast to the peer voting, player positions did not play a role as a selection criteria for the soccer fans either. Nevertheless, the quality of the model is reduced compared of the peer voting model, but at least specification (16) reaches a McFadden's R^2 value beyond .2 and can thus be considered acceptable.

⁷⁷ With a p-value of 0.055 in specification (11) PERFORMANCE nearly reaches significance level.

DOES ATTRACTIVENESS STILL MATTER IF PERFORMANCE COMES INTO PLAY?

Table 3.04 Probit Model of the Public Voting

Dependent Variable	WINNER							
	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
FACE	-0.0746 0.1653				-0.0642 0.1655	-0.0228 0.1732	-0.0993 0.2389	
GESTALT		-0.0248 [†] 0.0148			-0.0239 0.0150	-0.0200 0.0149	-0.0319 0.0243	
SKIN			0.0070 0.0734		0.0854 0.0995	0.1018 0.0997	0.0579 0.1163	
Hair ⁷⁸								
BLACK				Ref.	Ref.	Ref.		
BROWN				0.2936 0.2604	0.4256 0.3161	0.4539 0.3143	0.0120 0.3949	
DIRTYBLOND				0.3875 0.2917	0.5932 0.3829	0.6473 [†] 0.3808	-0.2839 0.4405	
BLOND				0.2751 0.3062	0.5101 0.3818	0.6525 [†] 0.3826	0.5484 0.5029	
PERFORMANCE						0.2888* 0.1400	0.4235* 0.1762	0.4737** 0.1582
RELTEAMPERF							0.1849 0.2032	
PRIORGAMES							-0.0006 0.0024	
LOYALTY							0.0001 0.0001	
AGE							-0.0727 0.0544	
GERMAN							0.5232 [†] 0.2972	0.4111 [†] 0.2211
Position								
GOALKEEPER							Ref.	
DEFENDER							-0.9814 0.7076	
MIDFIELDER							0.0119 0.4930	
STRIKER							0.0488 0.4883	
CLUB FEs	NO	NO	NO	NO	NO	NO	YES	YES
Observations	195	195	195	195	195	195	175	175
Cluster	65	65	65	65	65	65	65	65
McFadden's R ²	0.001	0.012	0.000	0.008	0.024	0.041	0.233	0.165
Observations correctly classified	66.67%	66.67%	66.67%	66.67%	66.15%	69.74%	73.71%	74.86%

Abbreviations and Notes: Reference category (Ref.); Robust standard errors in bold. †, *, ** and *** indicate statistical significance at the 10% ($p < .10$), 5% ($p < .05$), 1% ($p < .01$) and .01% ($p < .001$) level, respectively.

3.5 GENERAL DISCUSSION

Based on our findings one can conclude that the attractiveness stereotype does not hold regardless. Apparently, physical appearance does not always determine protagonists' success on the labor market; certain conditions have to be met.

In our setting physical appearance plays a different role than in other research setups examining the effects of attractiveness on individuals' demeanor towards attractive employees.

⁷⁸ The variable RED hair was omitted in the model.

DOES ATTRACTIVENESS STILL MATTER IF PERFORMANCE COMES INTO PLAY?

Contrary to our expectations, we do not find any evidence supporting the widely accepted supposition that physical appearance influences individual occupational recognition. In fact, the outcome of both voting stages of the POM award is almost entirely independent of the physical appearance of the candidates. Physical appearance in the context of the POM award neither played a role for peer players (team captains), nor for the soccer-interested participants in the public voting. As a result, physically attractive protagonists did not have an advantage in the setting of the POM award over their peers.

Mindful of various studies proving increased success in labor market settings for employees deemed attractive, this result is indeed surprising. Bearing in mind the multitude of performance observations to evaluate by both, peers and public⁷⁹, anchoring the nomination decisions on physical appearance aspects of the players, would have been plausible: For team captains, since they were obliged to make an instant judgment about the best of roughly 300 peers during an award round and for the interested public, mindful of the visual cue they were provided with in the process of the second POM voting stage.

What did show an effect in both election stages, however, is players' performance. This variable showed a stable statistical effect on the result of the respective success parameters. Consequently, the performance of the players, as opposed to their physical appearance, determined the outcome of the POM award to a considerable degree. Given our research setup that both, peers and soccer non-professionals were able to recognize players' performance on the pitch, we can conclude that both player stakeholder groups were also able to distinguish between high and lower performances of the protagonists on the pitch. But most importantly, we can infer that they based their individual selection behavior on their performance observations of the Bundesliga players.

This finding, however, is remarkable given the current status of appearance research. Mindful that in our setting job-related performance was to the highest degree possible transparent and measureable, the decisive difference to similar studies revealing contrary results, we conclude that physical appearance may only be applied as a means to evaluate employees' performance capabilities in situations where an assessment of actual performance is difficult or impossible, e.g. when it is too time-consuming, extremely costly or too complex. In situations on labor markets, however, where effective performance data is available or can reasonably well be inferred, as in the case of professional soccer, physical attractiveness apparently loses

⁷⁹ Per award month there were as a rule between 3 and 5 games of 18 teams with each team having up to 14 different players on the pitch.

DOES ATTRACTIVENESS STILL MATTER IF PERFORMANCE COMES INTO PLAY?

the function of a (supposed) indicator for assigned performance. In these situations individuals take protagonists' actual performance as basis for their assessments as well as reference for their behavior. Consequently, physical appearance in these settings no longer plays the role of a proxy, e.g. for anticipated performance. Since we obtain similar findings for peers as well as for the interested public, we can infer that our results are independent of the individual relationship of the stakeholder groups to the labor market. Hence, the expertise of and exposure to soccer in this case did not influence the outcome.

While Andreoni and Petrie (2008) as well as of Deryugina and Shurchkov (2013) have already indicated limits to the attractiveness stereotype in the context of available performance data, we are first to prove its limits for real-life labor markets. Even though our results restrict the explanatory power of physical appearance and call for a critical reassessment of the widely accepted attractiveness stereotype, we specified the conditions needed for it to influence individual judgments. As a result, one may see our findings supporting a possible extension of the perspective towards the attractiveness stereotype and of the attractiveness research as such. Nonetheless, our findings doubtlessly call for further research backing our results.

3.6 LIMITATIONS AND FURTHER RESEARCH

As mentioned, our results are supposed to be viewed as starting point for further investigations regarding the impacts of individual physical appearance in real labor market settings. In particular, we see four areas where further investigations would be beneficial in this context:

First, despite having controlled for a multitude of outwardly visible cues of physical appearance and for various control variables, there is the possibility that appearance cues in soccer may be more holistic and rather be based on, e.g. athletics and physical flexibility. Potentially, conclusions on players' performance are also based on the way a player moves, e.g., motion sequence or running style, rather than static characteristics of physical appearance. Thus, investigating this dimension in further research efforts would complement our findings.

Second, we focused our consideration on a field of application of one entire, but a rather specialized labor market, namely top-tier professional male soccer in Germany. Despite various advantages, all outlined in the course of this research paper, our investigations focus on male subjects only. A similar research setup investigating an invariably female labor market or, even more related to the majority of settings in most other labor markets, one with interactions of individuals of both genders, would further benefit the understanding of the attractiveness stereotype. This holds true in particular keeping in mind different preferences regarding certain as-

DOES ATTRACTIVENESS STILL MATTER IF PERFORMANCE COMES INTO PLAY?

pects of physical appearance between females and males (Melamed & Bozionelos, 1992; Averett & Korenman, 1996; Sarlio-Lahteenkorva & Lahelma, 1999; Judge & Cable, 2004; Han, Norton & Stearns, 2009; Steiger & Burger, 2010).

Third, against the backdrop of our results further research is also required regarding the investigated sector. The findings of Hamermesh and Biddle (1994), Biddle and Hamermesh (1998) and Mocan and Tekin (2010) reveal that the degree of individual attractiveness advantages varies by industry and occupation. In fact, it would be very interesting to gain more insights whether or not the attractiveness stereotype under the condition of transparent performance provision prevails in other occupations and sectors. In particular, investigations in industries where employees tend to sort (themselves and others) based on physical appearance into certain sectors or positions (Hamermesh and Biddle, 1994; Biddle & Hamermesh, 1998) and where an attractive physical appearance has a productivity enhancing effect, also promise to reveal further valuable insights.

And fourth, taking the impact of physical appearance of on peers' willingness to collaborate into account is another dimension attractiveness research would benefit from. While so far likewise only investigated in the context of research experiments (e.g., Mulford et al., 1998; Andreoni & Petrie, 2008), the question whether players' are more likely to work with more attractive colleagues or rather prefer to collaborate with peers with a measurably greater performance potential has so far widely been neglected for application fields in real labor markets. Whereas this question is beyond the scope of this research study, I will investigate this question in the consecutive chapter 4 of this dissertation.

3.7 CONCLUSION

To our knowledge, this research paper is the first one to observe the impacts of physical attractiveness on occupational success taking two different evaluation panels, in an entire, real-world employment market of a distinct industry over various years into account. Unlike the vast majority of research endeavors investigating effects of physical attractiveness on employees' occupational success, we selected a field of application where work-related performance is transparent and measurable with regards to objective key performance indicators as well as comparable among co-workers. Having assessed attractiveness objectively in multiple dimensions and having controlled for performance in a likewise objective fashion, we find that attractive individuals do not enjoy benefits over their less attractive peers, when it comes to work-related evaluations. Thus, the attractiveness stereotype, in contrast to the widespread opinion

DOES ATTRACTIVENESS STILL MATTER IF PERFORMANCE COMES INTO PLAY?

of large parts of the research community on physical attractiveness, cannot be applied universally. We demonstrated this in situations where all evaluating instances were able to assess performance contributions. In contrast, we find both, peers and the public, to orientate their evaluation and hence their final judgments on a *fair* assessment of actual performance rather than on the physical appearance of the evaluatees. As a result, we could show that if performance of protagonists is measurable and transparent, there is no imperative for a bias with regard to the physical appearance of protagonists. We conclude that under the circumstances of transparently assessable individual performance physical appearance loses its function as a proxy for assigned performance. Thus, individuals on the labor market rather ground their behavior on the assessable actual performance of the protagonists.

4 DOES PHYSICAL APPEARANCE IMPACT COLLABORATIVE BEHAVIOR OF PEERS? – AN ANALYSIS OF A LABOR MARKET⁸⁰

4.1 INTRODUCTION

Evaluations among humans with respect to their physical appearance are a daily reality in many situations, most of the time to the advantage of attractive individuals.⁸¹ Attractive people are believed to have more socially desirable personalities than less attractive peers, live happier lives, lead happier marriages, are deemed to be more competent spouses and overall are more successful (Dion, Berscheid & Walster, 1972; see also Langlois et al., 2000). Moreover, handsome individuals are not only assigned with positive attributes and characteristics, but their mistakes and mishaps are also treated with a higher degree of leniency (Bassili, 1981; Rosar, Klein & Beckers, 2008; Rosar, Hagenah & Klein, 2010). In addition, others seem to show a higher willingness to collaborate with attractive people. Mulford et al. (1998), for instance, find people in a prisoner's dilemma experiment to cooperate more often with attractive individuals. Furthermore, Andreoni and Petrie (2008), investigating the cooperative behavior of teammates with their attractive peers in a public goods experiment, find an altered behavior of peers in the presence of attractive interaction partners. In effect, teammates seem to be more willing to contribute and cooperate with attractive peers.

Nonetheless, the question whether attractiveness boosts collaboration and inspires peers to show more cooperative behavior also in labor market settings, has, so far, only narrowly been addressed in academic research. Research shows that in working environments in particular, people are in favor of individuals that are deemed handsome. Attractive physical appearance is frequently associated with an anticipation of higher skills (Dion, Berscheid & Walster, 1972; Efran & Patterson, 1974; Chung & Leung, 1988; Klein & Rosar, 2005; Hamermesh, 2006; Pareek & Zuckerman, 2011). Attractive employees have also evidently advantages over their colleagues which manifests, e.g. in a greater peer-recognition (Chaiken, 1979; Biddle & Hamermesh, 1996; Maner et al., 2003) and increased career opportunities (Hamermesh & Biddle, 1994; Ruffle & Shtudiner, 2010; Lopez Boo, Rossi & Urzúa, 2013; Borland & Leigh, 2014). However, although generally people in labor markets seem to alter their behavior in

⁸⁰ Ulrich, F., Schmidt, S. L., & Torgler, B. (2016). Does Physical Appearance Impact Collaborative Behavior of Peers? - An Analysis of a Labor Market. Unpublished Working Paper.

⁸¹ This holds true for biology (e.g. Wilson, 1975), sociology (e.g. Udry & Eckland, 1984; Klein & Rosar, 2005), economics (e.g. Pareek & Zuckerman, 2011; Halford & Hsu, 2013) and in particular for psychology (e.g. Wilson, 1968; Dion et al., 1972; Symons, 1979; Buss, 1994).

DOES PHYSICAL APPEARANCE IMPACT COLLABORATIVE BEHAVIOR OF PEERS?

favor of attractive individuals, there is (if any) only little external validity regarding collaborative behavior (cf. chapter 2): Either it has been proven that more attractive individuals enjoy advantages in working environments, without proving though a more collaborative behavior by their peers; or it was shown that attractive people can be certain to be met with more collaborative behavior in laboratory environments.

In fact, a systematic analysis in an actual occupational setting involving real professional tasks has, as far as we are aware, not yet taken place. Respectively, the question whether colleagues, when their own livelihood depends on it, prefer collaborating with physically attractive peers rather than with ones that have in the recent past demonstrated above average performance, remains widely unaddressed.⁸² Potential reason for the scarce examination of collaborative behavior in labor market settings may be that willingness to cooperate is not easy to define, hard to compare among colleagues/peers and difficult to measure reliably under real-world conditions.

Consequently, in this study we explore the relationship between physical appearance and cooperative behavior of peers in a real-world labor market that meets these requirements. As field of application of our research we select the team sport soccer and test whether the physical appearance of players influences the behavior of their peers with respect to cooperativeness. Due to the fact that "the world of sports mirrors the world of work" (Keidel, 1987, p. 591) sport in general, and soccer as application domain in particular, for various reasons offers a favorable setting for this investigation: First, sports sets a background where relevant cooperative behavior due to its fixed rules can only be demonstrate in a predefined setting, making the relevant behavior rather easy to define (Berman, Down & Hill, 2002, p. 20; Wolfe et al., 2005).⁸³ Second, behavior is, without great cost -due to pre-existing key performance indicators, such as in soccer, the number of fouls committed, the distance ran per game or the number of successful passes to teammates played- reliably measurable (Bloom, 1999, p. 25). Third and as a result of the above, behavior of protagonists is not only traceable and "relatively easy to interpret" (Pfeffer & Davis-Blake, 1986, p. 76), but also comparable among various players in the labor market soccer. Fourth, examinations over an extend period of time are also relatively easily possible (Bloom, 1999, p. 25). And fifth, roles and responsibilities in sport are rather easy

⁸² Moreover, there has not yet been a study distinguishing job-related tasks among employees with the same profession in order to gain deeper insights into the precise circumstances of a potential collaboration effect due to physical appearance.

⁸³ For soccer, this holds true due to the limited play time of 90 minutes and the comprehensive body of rules regulating the game (DFB, 2015).

DOES PHYSICAL APPEARANCE IMPACT COLLABORATIVE BEHAVIOR OF PEERS?

to characterize and to define, e.g. in soccer by player positions on the field. We take advantage of these favorable conditions for behavior research and analyze comprehensively the labor market of presumably one of the most competitive sports leagues in the world, i.e. the Bundesliga, Germany's top-tier soccer league.⁸⁴

The remainder of this paper is organized in six chapters. The subsequent chapter 4.2 sets the theoretical basis of this study. Then, in chapter 4.3 we present our data and the empirical model. After we present our results in chapter 4.4, we discuss them in chapter 4.5. In chapter 4.6 we address limitations and provide our view on further research necessary. Finally, we conclude our study in chapter 4.7.

4.2 THEORETICAL CONSIDERATIONS REGARDING APPEARANCE-RELATED COOPERATIVE BEHAVIOR IN THE BUNDESLIGA

4.2.1 State of Research Regarding Cooperative Behavior towards Attractive Co-workers

Attractiveness research has shown that more attractive employees have more occupational success than less attractive individuals. Specifically, recent research studies reveal various advantages in different stages throughout a working life: Firstly, attractive individuals have, for instance, increased chances to enter the labor market in the first place, as they are more likely to be invited to job interviews (Ruffle & Shtudiner, 2010; Lopez Boo, Rossi & Urzúa, 2013).⁸⁵ Secondly, once recruited, attractive individuals seem to have better opportunities to make a career, as they are more likely to be promoted to powerful positions in comparison to their less attractive peers (Frieze, Olson, & Russell, 1991; Biddle & Hamermesh, 1998; Pareek & Zuckerman, 2011). Thirdly, more attractive employees gain on average both, a higher individual (Doorley & Sierminska, 2012; Scholz & Sicinski, 2015) as well as a higher family income (Averett & Korenman, 1996; Borland & Leigh, 2014). Finally, attractive individuals seem also somehow to trigger altered behavior by others, as, e.g. customers' propensity to spend (Sachsida, Dornelles & Wagner Mesquita, 2003; Reinigen & Kernan, 1993) and their generosity (Lynn & Simons, 2000) increases in the presence of attractive retail personnel. In addition, attractive individuals are met with more confidence and trust in sales conversations and are

⁸⁴ The Bundesliga hosts 18 teams, which all play each other twice during a season, totaling in 34 game days per season.

⁸⁵ See Bertrand & Mullainathan (2004) regarding chances of job applicants of different ethnic backgrounds.

DOES PHYSICAL APPEARANCE IMPACT COLLABORATIVE BEHAVIOR OF PEERS?

treated more favorably (Biddle & Hamermesh, 1998; Pfann et al., 2000; Pareek & Zuckermann, 2011).⁸⁶

Furthermore, there is indication that attractive individuals may alter also the behavior of co-workers, as attractive appearance apparently fosters collaborative behavior of peers and colleagues.⁸⁷ In various studies, may it be in the context of ultimatum game experiments (Solnick & Schweitzer, 1999), in public goods experiments (Andreoni & Pertie, 2008) or in prisoner's dilemma games (Mulford et al., 1998), attractive individuals are met with more cooperative behavior.⁸⁸ Additionally, research has also brought to light an altered expectation by interaction partners towards attractive individuals. In accordance with Social Expectancy Theory (Vroom, 1964; Oliver, 1974) and Status Characteristics Theory (Berger et al., 1972; Wagner and Berger 1997), e.g. Andreoni and Pertie (2008) found that "the beauty premium is not due to the actions of attractive people, but seems to be due to the expectations of how attractive people will behave" (p. 89). This implies that peers are only more willing to cooperate with more attractive individuals, since they themselves expect a greater outcome of the interaction. Consequently, the collaborative behavior of individuals in the presence of attractive colleagues may not have its root cause, for instance in altruism towards their attractive peers, but in an anticipated reciprocal collaborative behavior that is hoped to lead to higher individual outcomes. As a consequence, attractiveness maybe, similar to the results in chapter 3 of this dissertation, be applied as an indicator for assumed actions in the future due to the lack of other verifiable information that may alternatively guide decision making.

The investigations regarding this aspect have so far, however, predominantly been conducted on experimental setups. In fact, external validity through studies analyzing impacts of attractiveness on collaboration in real-world settings is rather scarce. Accordingly, this makes inferences for real-world labor market settings rather difficult and brings about various shortcomings, for at least five reasons:

⁸⁶ We also glean from existing attractiveness research that people pay more attention to attractive individuals (Langlois et al., 1987; Samuels & Ewy, 1985), they treat attractive individuals in a nicer way (Benson et al., 1976) and with leniency and indulgences (Bassili, 1981; Rosar, Hagenah & Klein, 2010). Moreover, people trust attractive individuals more quickly (Reingen & Kernan, 1993; Pareek & Zuckerman, 2011).

⁸⁷ The sheer identification of a counterpart alone is shown to boost collaborative behavior (Bohnet & Frey, 1999, 1999a; see also Burnham, 2003). Similarly, Sell and Wilson (1991) show more information about the counterparts to boost collaborative behavior in public goods experiments.

⁸⁸ Similarly, Scharleman et al. (2001) provide indication that a kind facial expression fosters collaborative behavior in one-time interactions.

DOES PHYSICAL APPEARANCE IMPACT COLLABORATIVE BEHAVIOR OF PEERS?

1. Experiments investigating behavior are settings that by definition exclude long-term consequences of the actions taken in the artificial environment. Hence, subjects, in contrast to real-life labor markets, do not take the future impact of their decisions into account; long-term considerations are not incorporated (Take-mura, 1993; Danzis & Stone-Romero; 2009).
2. The actions and decisions carried out in experiments seldom represent true work-related ones. Cooperative behavior in real-life labor markets is most of the time bound to the actual work assignments, rather than to collaboration in prisoners' dilemmas, ultimatum games or public goods experiments. This may limit the explanatory power of the insights gained therewith (Sell & Wilson, 1991; Mulford et al., 1998; Solnick & Schweitzer, 1999; Andreoni & Pertie, 2008).
3. Since "natural-world encounters are often not one-time affairs" (Mulford et al., 1998, p. 1588) experiments fall short representing the true conditions on labor markets. Here, as opposed to the setup in an experiment (Bohnet & Frey; 1999, 1999a; Solnick & Schweitzer, 1999; Andreoni & Pertie, 2008), colleagues know each other and also their respective strengths and weaknesses well. This is not the case in most experimental settings.
4. As a consequence of above, experiments are likely to fall short representing the steady state of human relationships, as experiments, as a rule, focus on spontaneous reactions to a visual cue (Danzis & Stone-Romero; 2009; Tsai, Huang & Yu, 2012). Besides being more complex, relationships in labor markets have, in most instances developed over time and are built on reciprocal interrelationships. Thus, incorporating reciprocal reactions to each other's behavior in a research setting would come much closer to real-life conditions.
5. Employees in true labor markets must be assumed to follow a decision making regarding their individual forthcoming. While the risk associated with a decision to trust an attractive individual by behaving collaboratively is rather low in experimental settings (Solnick & Schweitzer, 1999; Scharleman et al., 2001), this is different in real-world labor markets. In an experimental setting the livelihood of the decision maker is not impacted, while in the real world decisions carry more weight. Decisions, if taken wrongly in true working environments, may also bring about negative consequences for the deciding person. Also, since true performance abilities are, as a rule, not transparent in experiments, incorporating others' abilities into the decision making in real settings seems not only logical,

DOES PHYSICAL APPEARANCE IMPACT COLLABORATIVE BEHAVIOR OF PEERS?

but in line with theoretical considerations, such as Social Expectancy Theory, that have been applied explaining collaborative behavior in experiments.

Consequently, we will investigate the apparently so far unaddressed question, whether employees in real-life labor markets are still willing to cooperate more with attractive peers, given that they know their colleagues and hence their individual reciprocal cooperative behavior as well as their performance abilities. In doing so, we take advantage of the, in this regard, favorable conditions of soccer and investigate the cooperative behavior with respect to physical appearance in the German Bundesliga.

4.2.2 Impacts of Physical Appearance on Collaborative Behavior

In this research we do not limit our analysis to only one, but take into account multiple aspects of physical appearance. The vast majority of studies investigating the relation between cooperative behavior and attractiveness only focus on one aspect of physical appearance, namely facial attractiveness (Mulford et al., 1998; Solnick & Schweitzer, 1999; Andreoni & Petrie, 2008; Danzis & Stone-Romero; 2009). Since the decision whether to cooperate or not, is normally taken with the entire counterpart being visible, taking other appearance features into consideration is therefore necessary (Loureiro, Sachside, & Cardoso de Mendonça, 2011). As a consequence, to provide a to the highest degree possible comprehensive analysis of impacts due to physical appearance on collaborative behavior, we take, in addition to facial attractiveness, also players' body gestalt as well as their skin tone into consideration. All three aspects of physical appearance have recently been proven to be critical to the assessment of humans' physical appearance in academic literature (Persico, Postlewaite, & Silverman, 2004; Heineck, 2005; Leigh & Susilo, 2010; López Bóo, Rossi, & Urzúa, 2013; Scholz & Sicinski, 2015; Gehr-sitz, 2014). Moreover, as we will outline in the following, there is sufficient reason to believe that all three aspects foster collaborative behavior of peers.

4.2.2.1 Facial Attractiveness

As the face carries the most weight in the perceptions of human beings (Wade et al., 2004, p. 1083), facial attractiveness is in the vast majority of studies investigating the impacts of physical attractiveness the most distinctive characteristic of appearance (Berscheid & Walster, 1974; Symons, 1995; Wade, 2000; Scholz & Sicinski, 2015). In fact, there are various reasons suggesting that facial attractiveness fosters collaborative behavior among colleagues:

First, as mentioned above, it is scientifically widely undisputed that performances of facially attractive individuals, especially those on the labor market, are evaluated more favorably than performances of their less attractive peers (Hamermesh & Parker, 2005; Süßmuth,

DOES PHYSICAL APPEARANCE IMPACT COLLABORATIVE BEHAVIOR OF PEERS?

2006; Klein & Rosar, 2005; López Bóo, Rossi, & Urzúa, 2013; Scholz & Sicinski, 2015; Gehrsitz, 2014). Many empirical studies investigating the influence of facial attractiveness in work-related environments unveil results suggesting a relation between an attractive facial appearance and increased perceived performance (Ross and Ferris, 1981; Umberson & Hughes, 1987; Biddle & Hamermesh, 1998). There are various studies proving more favorable performance assessments for facially attractive athletes in sports. Berri et al. (2011), for instance, investigating the compensation of quarterbacks in the National Football League (NFL), proves higher performance evaluations of facially attractive players by their clubs, since salary advantages of facially attractive players over less attractive peers sustain even after controlling for players' performance. Further studies, again, in American football (Williams, Park & Wieling, 2010), professional cycling (Postma, 2014) as well as in professional tennis (Bakkenbüll & Kiefer, 2014) come to similar findings.

Second, there is the attractiveness treatment advantage (Rosar, Klein & Beckers, 2008). As attractive people are verifiably treated more politely (Reingen & Kernan, 1993) and more courteously in comparison to less attractive individuals (Mulford et al., 1998; Solnick & Schweitzer, 1999), receive more support and are helped more often (Benson, Karabenick & Lerner, 1976; Harrell, 1978). Consequently, attractive players may also receive a more favorable treatment, e.g. in the form of more collaborative behavior on the soccer pitch.

Third, there may also be an advantage through the attractiveness attention boost effect (Rosar, Klein & Beckers, 2008) for facially attractive players due to an increased perception. It has been documented that attractive individuals receive more attention especially in personal interactions, than less attractive persons (Rosar, Klein & Beckers, 2008).⁸⁹ Maner et al. (2003), for instance, show observers of human interactions to pay more attention to facially attractive individuals and to exhibit enhanced recognition memory about them (see also Dion & Berscheid, 1974). As a result, actions, and in particular performance, of facially attractive individuals are more likely to be remembered by others (Chaiken, 1979). Thus, if good actions on the pitch of facially attractive teammates attracts greater attention and leads to increased recognition memory about them, it is also likely that the good performances of facially attractive players in the Bundesliga resonate longer. This ultimately may trigger teammates' collaborative decision making in favor of their attractive co-players.

⁸⁹ This effect is objectively measurable by an increased level of the hormone testosterone of people when an attractive person is present (Roney, Mahler & Maestripieri, 2003).

DOES PHYSICAL APPEARANCE IMPACT COLLABORATIVE BEHAVIOR OF PEERS?

Yet a fourth reason that may lead to more collaborative behavior is that facially attractive individuals are not only assigned with positive attributes and characteristics, but their mistakes and mishaps are also treated with a higher degree of leniency (Bassili, 1981; Rosar, Hagenah & Klein, 2010). Through this *attractiveness glamour effect* (Rosar, Klein & Beckers, 2008) undesired behavior of attractive people, if at all debunked, is more likely to be excused and softened. Meaning, the evaluators use other, external influences that seem outside of the sphere of control of the attractive individuals, to rationalize such undesired behavior (Dion et al., 1972).⁹⁰ As a consequence, attractive individuals are evaluated more positively compared to less attractive peers (Langlois et al., 2000; Wuensch & Moore, 2004)⁹¹ which may also lead to the overestimation of attractive teammates' performance on the soccer field. If, for instance, intercepted passes, missed opportunities in front of the goal or the likes of attractive players -in the context of soccer the equivalent to mistakes and mishaps- are perceived less important or severe, their teammates may be more cooperative towards attractive players in next encounters. As a consequence, based on the current state of attractiveness research we hypothesize, that individuals with increased facial attractiveness are met with more collaborative behavior by their teammates.

4.2.2.2 Body Gestalt

Despite that facial attractiveness is most commonly used as measure of human attractiveness in academic research (Scholz & Sicinski, 2015, p. 1), there is a broad consensus that one "cannot limit the beauty of people to facial attractiveness" (Loureiro, Sachsida, & Cardoso de Mendonça, 2011, p. 258; see also Liu & Sierminska, 2014). In fact, there is reason to believe that a person's higher body height though social effects within groups also results in increased cooperative behavior of others.

In fact, remarkable body height seems to lead to a higher perceived status. Body height has particularly been identified to be beneficial for men on the labor market, as taller individuals are found to enjoy benefits in the recruiting process as well as with respect to the overall com-

⁹⁰ This effect is even verified to be present in situation of jurisdiction leading to more and stricter verdicts if subjects are confronted with attractive plaintiffs (Kulka & Kessler, 1978) and to more lenient sentences if exposed to attractive defendants (Downs & Lyons, 1991; Efran, 1974; Sigall & Ostrove, 1975). Sigall and Ostrove (1975) prove milder verdicts only in crimes unrelated to the physical attractiveness of the accused, e.g. burglary as opposed to swindle.

⁹¹ This behavioral pattern seems innate: Langlois and Stephan (1977) found that attractive children are perceived by their peers lower on meanness and violence than less attractive children. Along the same lines, Dion and Berscheid (1974) show that young children's physical attractiveness is related to peers' perception of their social behavior.

DOES PHYSICAL APPEARANCE IMPACT COLLABORATIVE BEHAVIOR OF PEERS?

compensation level regardless of actual performance (Frieze, Olson, & Good, 1990; Persico, Postlewaite, & Silverman, 2004; Heineck, 2005). Taller men are proven to be more successful in their professional career overall, but also to be more competent by their peers (Herpin, 2005). Males' large body height is apparently socially connoted with masculinity, athleticism and physical attractiveness (Jackson & Ervin, 1992) as well as associated with power and a higher status (Dannenmaier & Thumin, 1964; Wilson, 1968; Jackson & Ervin, 1992).⁹² As a result, according to the *Status Characteristics Theory* (Berger et al. 1972; Wagner and Berger 1997) players' higher body size may be perceived as a diffuse status characteristic "that generalizes to the expectation of cooperative behavior" (Mulford et al., 1998, see also Umberson & Hughes, 1987; Jackson, Hunter & Hodge, 1995). This may result in collaboration of teammates with their taller peers. As a consequence, we hypothesize an increased collaborative behavior of teammates in the Bundesliga towards their taller peers in their team.

4.2.2.3 Ethnic Type

Since "the race of a face represents a superordinate category" relative to other social categories (Kramer, Jones & Sharma, 2013, p. 1; see also Kelly et al., 2005), the consideration of a player's ethnic background as an aspect of his physical appearance is also imperative. Research regarding general human preferences with respect to skin tones has not yet reached agreement. There is, on the one hand, the hypothesis of a *universal preference for light skin* (e.g. van den Berghe and Frost, 1986), as rather light-skinned individuals are sensed to be *better* in character as opposed to people with darker skin (Zebrowitz, Montepare & Lee, 1993). White people are rated to be socially competent, significantly warmer and overall more attractive, whereas individuals with rather dark skin are predominately thought to be more dominant as well as more masculine and mature (Wade et al., 2004). As a result, individuals with light skin do enjoy advantages in some labor markets (Bertrand & Mullainathan, 2004; see also Arceo-Gomez & Campos-Vazquez, 2014), as they are more likely to be employed (Heckman, 1998; Altonji & Blank, 1999; Bertrand & Mullainathan, 2004; Arceo-Gomez and Campos-Vazquez (2014; 2014a) and are more likely to have better chances for career progress (Wilson, 1997; Holzer, Offner & Sørensen, 2005; Goddard & Wilson, 2009).

However, there is also the hypothesis of the *own-race bias*. Various studies have revealed preferences for individuals with the own respective skin tone (e.g., Rhodes et al., 2005;

⁹² For example, taller US presidents are rated as 'greater' and are assigned with more leadership and communication skills (Stulp et al., 2013, p. 159), which supports an indirect social effect based on height. Interestingly, elected US presidents are found to be indeed much taller than the average man from the same birth cohort (Stulp et al., 2013).

DOES PHYSICAL APPEARANCE IMPACT COLLABORATIVE BEHAVIOR OF PEERS?

Kelly et al., 2005; Burke et al., 2013; see also Zebrowitz, Montepare & Lee, 1993), implying general predilections for individuals with the same respective ethnical background. This holds in particular with regards to interpersonal exchange, such as collaborative behavior. Franzoi (1995), for instance, confirms attractiveness preferences for whites in Western cultures (see also Kramer, Jones and Sharma (2013)). Thus, based on the own-race bias, preferences towards interpersonal behavior depend to a considerable degree on the circumstances of the situation and on the (ethnic background of the) involved individuals.

Various studies have provided evidence for racial discrimination also in the field of sport (see Kahn (1991) for a review of the respective literature especially of the 1990s). Hoang and Rascher (1999), for instance, show black athletes having prospects for a shorter career and a lower salary in professional basketball than their white teammates (see also Hamilton, 1997). Similarly, there is discrimination in American football, in particular on the quarterback position, as dark-skinned players are underrepresented on this position and discriminated against when it comes to compensation (Berri & Simmons, 2009).⁹³

The fact that we investigate the impact of physical appearance on performance in a central European country with predominately white individuals, leads to anticipated advantages of players with brighter skin from both, from the perspective the own-race bias and the approach of universal preference for brighter skin tones. Findings in the field of sport seem to substantiate this. Thus, we hypothesize that players with rather light skin tone are more likely to be favored for cooperation in the Bundesliga.

4.3 METHODOLOGY AND EMPIRICAL MODEL

4.3.1 Methodology and Measurements

4.3.1.1 Bundesliga as Field of Application

We examine the collaborative behavior of all players in the German Bundesliga. The analysis is applied to a period of seven consecutive years, from 2003/04 to 2009/10, and takes performances of 1,108 players in 2,142 Bundesliga games into account. Moreover, with soccer we selected a labor market where physical appearance may not influence productivity inherently (Rosar, Hagenah & Klein, 2010), as occupation-specific effects (e.g., Harper 2000) as well as effects derived from occupational sorting (e.g., Hamermesh & Biddle, 1994) are not to be expected. Analyzing the interactions of soccer players playing with one another in dedicated

⁹³ There is also evidence for fan discrimination of black athletes (e.g., Fort & Gill (2000); Kanazawa, Funk (2001); Burdekin et al. (2005)).

DOES PHYSICAL APPEARANCE IMPACT COLLABORATIVE BEHAVIOR OF PEERS?

teams, we can assume that the subjects know each other and their respective, individual strengths and weaknesses well. As a result, one can be certain, that players' behavior is, on the one hand, the consequence of experiences of various prior interactions while, on the other hand, takes also potential effects on expected future behavior into account. Moreover, mindful of the fact that due to physiological reasons soccer players have only a limited time period to develop their careers,⁹⁴ the rather low number of job positions in this industry and the few occasions players can demonstrate relevant performance,⁹⁵ decisions, in particular the ones under investigation in this study, are often decisive not only for the success of the own team, but also for the future occupational forthcoming of the individual player.

4.3.1.2 Measurement of Physical Appearance

Various studies in the field of facial attractiveness research have revealed facial symmetry to be a very good representation of facial attractiveness (e.g. Thornhill & Gangestad, 1999; Perrett et al., 1999; Valentine et al., 2004, Halford & Hsu, 2013; Hoegele, Schmidt, & Torgler, 2015), in particular since the concurrence of facial aspects constitutes the attractiveness of a face rather than single aspects (Cunningham, 1986). Therefore, we approximate players' facial attractiveness by assessing their facial symmetry. We objectively determine a facial symmetry score for each player by applying anaface.com, a photograph analysis software, that requires placing 17 markers on the uploaded facial portrait picture. The software measures distance ratios, such as the one of nose to ear length or the ratio of nose width to face width (see also Halford & Hsu, 2013) while ignoring other appearance features, such as skin color or body-related features, such as body height. Being a standard facial attractiveness measure in recently published studies with only few raters (e.g. Halford & Hsu, 2013; Hoegele, Schmidt, & Torgler, 2015), we asked four independent raters to assess the players' facial attractiveness by the anaface.com application in order to eliminate measurement errors to the highest degree possible (Hoegele, Schmidt, & Torgler, 2015⁹⁶). Furthermore, avoiding distortions by picture layout such as background and color versus black-and-white mentioned by Hamermesh and Parker (2005), we took advantage of a single source, namely the official website of the sports magazine Kicker (www.kicker.de). From this website we obtained the vast majority of the player portrait pictures that were in the absolute majority also identical with the players' official autograph

⁹⁴ There is no soccer player actively playing in the Bundesliga younger than 16 and older than 40 years (see descriptive statistics of AGE in table 3.01)

⁹⁵ Each team can employ a maximum of 14 players per game. The Bundesliga is comprised by 18 teams playing each other twice per season; one home and one away game per fixture totaling in 34 game days per season.

⁹⁶ Hoegele, Schmidt, & Torgler (2015) also took four scores per player into account. In contrast to our approach, they applied two raters generating two anaface symmetry scores each per player.

DOES PHYSICAL APPEARANCE IMPACT COLLABORATIVE BEHAVIOR OF PEERS?

cards. Moreover, our overall approach ensures comparability of the overall conditions, such as high picture resolution or a straight and relaxed look into the camera.

Data for the players' body height have been provided by Impire AG, the official data provider of the Bundesliga during the observation period. As this measure can be considered constant with full-grown adults, we applied the provided measure for the players over the entire evaluation period.

In order to determine the players' skin tone we apply the in the field of dermatology highly accepted six-point Fitzpatrick scale (Fitzpatrick, 1988). Similar to the assessment of facial attractiveness, we assessed the skin score for each player on the Bundesliga pitch during the seven year period under investigation by the help of four independent raters. The raters were asked, with the aid of a publication of the Australian Government (2011) depicting reference photographs of all six Fitzpatrick skin types (see Appendix Figure 4), to assign each player photograph a Fitzpatrick skin score.

4.3.1.3 Measurement of Collaborative Behavior

As it is the ultimate aim in a soccer game to score more goals than the opposing team and while being a low-scoring game, actions in the goal area of a soccer pitch are of particular importance: Decisions in the goal area often make the difference between victory and defeat. Thus, collaboration in front of the goal can be seen as most important in the game of soccer. Thus, we investigate the collaboration of teammates towards their attractive peers in these decisive situations. Having on hand various different behavior parameters, also provided by Impire AG, for all players over the entire investigation period, we focus our analysis on the last passes prior to a goal scoring opportunity (GSO).⁹⁷ Thus, we proxy relevant collaborative behavior of Bundesliga players towards their more attractive teammates by investigating, whether they pass the ball in the most important game situations to attractive teammates rather than to ones that have been proven to be *on a roll*, namely that have demonstrated outstanding performance in the recent past for the team.

4.3.1.4 Measurement of Performance

Recent performance of a player is measured by 67 different performance variables also collected for each player in all games during the seven seasons and likewise made available by Impire AG. These performance indicators are the basis of an aggregated performance score for

⁹⁷ For GSO we account for *goal from inside the box*, *goal from outside the box*, *goal-scoring chance inside the box*, *goal-scoring chance outside the box* and *clear-cut chance without goal attempt*.

DOES PHYSICAL APPEARANCE IMPACT COLLABORATIVE BEHAVIOR OF PEERS?

each player in each Bundesliga game, ensuring a quantitative and objective performance measurement within this distinct labor market. The performance score for each of the four player positions constitute of two sets of performance variables: First, there are 29 performance variables that are independent of the position of the player and thus part for the performance score calculation of each player irrespective of the position on the pitch.⁹⁸ Second, there are specific performance variables for each of the four positions goalkeeper⁹⁹, defender¹⁰⁰, midfielder¹⁰¹ and striker¹⁰². Hence, the performance score takes position-independent and position-specific variables into account. The performance evaluations were accomplished by four professional Impire AG raters per Bundesliga game, two live in the stadium and two reevaluating game situations afterwards on tape. All performance measures were then aggregated and by the use of a predefined algorithm converted into a player's performance score per game. Consequently, we use the performance scores as proxy of actual performance of the players.

4.3.2 Empirical Model and Variables

We analyze the impact of physical appearance on collaborative behavior of Bundesliga players towards their teammates using ordinary least squares (OLS) with robust standard errors. In the model we treat each individual as a cluster. Our baseline specification has the following structure:

$$\begin{aligned} \text{GOAL SCORING OPPORTUNITIES}_i = & \beta_0 + \beta_1 \text{PERFORMANCE}_i + \beta_2 \text{MINUTES}_i \\ & + \beta_3 \text{FACE}_i + \beta_4 \text{GESTALT}_i + \beta_5 \text{SKIN}_i \\ & + \beta_6 \text{AGE}_i + \beta_7 \text{GERMAN}_i \\ & + \beta_8 \text{LOYALTY}_i + \beta_9 \text{POSITION}_i + \varepsilon_i, \quad (1) \end{aligned}$$

⁹⁸ Examples of performance variables independent of the position are whether the *team won the respective game*, whether the player saw a *yellow* or a *red card* or lost the *crucial tackling immediately before a goal against*

⁹⁹ For goalkeepers there are ten additional performance variables. Examples are *number of goals against*, *number of crosses saved* and *number of penalties saved*

¹⁰⁰ For defenders there are also ten additional performance variables. Examples are *number of tacklings won*, *number of long passes* and *number of assists for shots outside the box*

¹⁰¹ For midfielders there are nine additional performance variables. Examples are *number of assists*, *number of assists for shots inside the box* and *number of tacklings taken*

¹⁰² For strikers there are eight additional performance variables. Examples are *number of ground tacklings won*, *number of header tacklings won* and *number of team goals*

DOES PHYSICAL APPEARANCE IMPACT COLLABORATIVE BEHAVIOR OF PEERS?

where GOAL SCORING OPPORTUNITIES (GSO) is the dependent variable and represents the number of situations per game the individual Bundesliga player was put in the situation that he can make an attempt to score a goal, thus where he received the final, decisive pass.¹⁰³

In the following we outline the independent variables of our models. First we will introduce our three variables representing physical attractiveness. We then detail our control variable for players' individual performance and demonstrate how we control for the fact that players get substituted in soccer. After that, we outline our variables with which we control for the experience of the players'. Finally, we introduce the variables for players' nationality, their positions on the pitch as well as for seasonal and club-fixed effects.

4.3.2.1 Physical Attractiveness Variables

We account for physical attractiveness in this model by applying the variables FACE, GESTALT and SKIN. FACE represents the simple mean of the facial symmetry scores assessed by the four independent raters applying anaface.com (e.g. Halford & Hsu, 2013; Hoegel, Schmidt & Torgler, 2015) and may take values between 1, a very unsymmetrical, hence unattractive face, to 10, a favorable facial symmetry, thus a very attractive face. GESTALT represents the players' body size and is measured in centimeters on the metric scale for all players in scope of our analysis. The variable SKIN represents the skin tone of the players on the Fitzpatrick scale with values between 1, a very light skin (Fitzpatrick skin type I), and 6, an extremely pigmented skin (Fitzpatrick skin type VI). Similar to FACE, SKIN represents the simple mean of the assessments of our four raters for each player.

4.3.2.2 Control Variables

As it can be taken for granted, that players in the competitive Bundesliga want to be successful in each game, collaborating, i.e. passing decisive, final balls, to players who recently displayed good performance on the pitch appears comprehensible. As a result, we control for individual recent performance by the variable PERFORMANCE. Being the average of the performance scores of the last five games the player made in the Bundesliga in the particular season,¹⁰⁴ it is a proxy for the current performance level of the player. PERFORMANCE may take values between 0, for poor, and 10, for outstanding performance.

¹⁰³ In order to exclude effects through multicollinearity in our model, we conducted pairwise correlation analyses for all five components of GSO. We only found quite weak correlation.

¹⁰⁴ In addition to the average of the last five games, we also ran regression analyses with the performance scores of the very last game of the player in the Bundesliga as well as with the averages of the last two, three and four games as robustness checks. All analyses revealed results similar to the analysis of the 5-game average.

DOES PHYSICAL APPEARANCE IMPACT COLLABORATIVE BEHAVIOR OF PEERS?

In order to account for the fact that up to three players per team per game may get substituted which up front would reduce the likelihood of collaboration through a sheer time constraint, we control for the players' time on the pitch by the variable MINUTES. MINUTES can take values from 1, a one minute playtime in the respective game, to 90, indicating that the player played a game from the kick-off to the end.

We also control for possible effects based on the players' experience and experience-related status in their teams by the variables AGE and LOYALTY. AGE¹⁰⁵ represents the players' age in years at the respective game days and accounts for possible experience-related advantages, e.g. for older players compared to younger ones. Further, we want to control for effects that are bound to the length of time the players' have been playing in a team. The underlying assumption we account for is, that players with a rather long tenure with a particular team, may have achieved a certain social standing within a team structure that may alter also collaborative behavior towards them. Hence, we control for these aspect by adding the variable LOYALTY representing the number of prior games the player has accomplished for his current team.

As we also need to account for the possibility that the own-race bias (e.g., Rhodes et al., 2005; Kelly et al., 2005; Burke et al., 2013) mentioned above, is not only driven by the appearance of the respective player, i.e. his skin tone, but also by his origin, we include the dichotomous variable GERMAN. It takes the value 1, if the player has the local (German) nationality and 0 otherwise.

In addition, as players have distinct roles and responsibilities on the soccer field and play different positions, the likelihood of receiving the distinct, final pass prior to a goal scoring opportunity varies accordingly. Consequently, we control for the players' position by including respective variables. Possible positions are GOALKEEPER, DEFENDER, MIDFIELDER and STRIKER. All four possible characteristics of player positions are consecutively added as dichotomous variable to the model.¹⁰⁶

In order to account for time-related and team-inherent effects, we also consider the variables SEASON and CLUB, respectively. With the inclusion of SEASON we control for possible collaboration changes over time in the Bundesliga as a whole, e.g. through the application of different game-related tactics. Finally, accounting for the variable CLUB, controls for special conditions and particularities, e.g. special tactical orientations and approaches that are bound to the players' teams. Descriptive statistics for the key variables are reported in Table 4.01.

¹⁰⁵ As we discover a quadratic effect in the variable AGE, we account for this in our model.

¹⁰⁶ Later, we will provide a robustness check by conducting regressions analyses for the single player positions separately.

DOES PHYSICAL APPEARANCE IMPACT COLLABORATIVE BEHAVIOR OF PEERS?

Table 4.01 Descriptive Statistics of Key Variables

Dependent Variable		M	SD	MIN	MAX
GSO	Cumulated number of passes resulting in: goal from inside/outside the box, goal-scoring chance inside/outside the box and clear-cut chance without goal attempt	1.0141	1.3625	0	15
ATTEMPTS	Cumulated number of passes to goal from inside the box, goal from outside the box, goal-scoring chance inside the box and goal-scoring chance outside the box	1.0085	1.3571	0	15
GSOwo	Number of passes to goal-scoring chance outside the box	0.0056	0.0751	0	2
Independent Variables					
PERFORMANCE	Average performance score past five games in the respective season	6.0059	0.8666	3.2200	9.6600
MINUTES	Number of minutes played in the a game	71.9299	28.4008	1	90
FACE	Average facial symmetry score of four raters	7.5566	0.5065	5.3050	8.9100
GESTALT	Body height in centimeters	183.3074	6.4545	164	202
SKIN	Average facial symmetry score of four raters	2.6150	1.2363	1	6
LOYALTY	Number of prior games for the current own team	51.1110	54.0604	0	428
AGE	Age in years at game day	26.8702	4.0486	16.9287	40.5698
GERMAN ¹	Nationality of player (German = 1; 0)	0.4336		0	1
Position					
GOALKEEPER	Player's position is goalkeeper (Goalkeeper = 1; 0)	0.0740		0	1
DEFENDER	Player's position is defender (Defender = 1; 0)	0.3102		0	1
MIDFIELDER	Player's position is midfielder (Midfielder = 1; 0)	0.4121		0	1
STRIKER	Player's position is striker (Striker = 1; 0)	0.2035		0	1

Notes: n = 52,671 player game observations of 1,108 players. All figures are from the seasons 2003/04-2009/10. Author calculations. Data provided by Impire AG, with exception for FACE and SKIN which are collected by four independent raters.

The analysis of the degree of influence on Bundesliga players' physical appearance on their collaborative behavior proceeds by the help of six specifications. Specifications (1), (2) and (3), all contain several introduced independent variables as well as controls for season-fixed and club-fixed effect. The only difference among these three specifications is the dependent variable: In Specification (1), as introduced above, the explained variable is GSO. In specification (2) as depended variable we focus only on final passes in situations where the player made a real attempt to score a goal.¹⁰⁷ Thus this contains situations with an even higher potential

¹⁰⁷ This comprises the following situations: goal from inside the box, goal from outside the box, goal-scoring chance inside the box and goal-scoring chance outside the box

DOES PHYSICAL APPEARANCE IMPACT COLLABORATIVE BEHAVIOR OF PEERS?

to score. Specification (3) is the complementary. Here, we focus only on final passes to situations leading to clear-cut chance but without goal attempts.

In the remaining specifications (4)-(6) we ran regressions analyses for each position separately. In doing so, we orientate ourselves on basic specification (1). Hence, we keep GSO as depended variable and incorporate all independent variables with the exception of position. In specification (4) we only ran the analysis for defenders, in specification (5) only for mid-fielders and, finally, in specification (6) only for strikers.

4.4 RESULTS

Drawing on the literature presented in chapter 4.2, we hypothesize an increase in the collaborative behavior players are met with, once they exhibit certain aspects of physical attractiveness, such as FACE, GESTALT or SKIN. In Table 4.02 we present the results of our model.

DOES PHYSICAL APPEARANCE IMPACT COLLABORATIVE BEHAVIOR OF PEERS?

Table 4.02 *Physical Appearance as Determinant of Collaborative Behavior*

Sample Dependent Variable	ALL			Defender	Midfielder	Striker
	GSO	ATTEMPTS	GSOws	GSO	GSO	GSO
	(1)	(2)	(3)	(4)	(5)	(6)
PERFORMANCE	0.1580*** 0.0160	0.1565*** 0.0159	0.0014*** 0.0004	0.0949*** 0.0163	0.1583*** 0.0257	0.1369*** 0.0254
MINUTES	0.0165*** 0.0004	0.0164*** 0.0004	0.0000*** 0.0000	0.0058*** 0.0002	0.0147*** 0.0005	0.0269*** 0.0007
FACE	-0.0013 0.0376	0.0000 0.0375	-0.0013 [†] 0.0008	-0.0197 0.0374	0.0063 0.0680	-0.0049 0.0597
GESTALT	0.0074* 0.0032	0.0075* 0.0032	-0.0001* 0.0000	0.0128*** 0.0032	-0.0013 0.0053	0.0179*** 0.0048
SKIN	0.0034 0.0178	0.0035 0.0177	-0.0001 0.0003	0.0189 0.0184	-0.0080 0.0299	0.0051 0.0260
AGE	0.0770* 0.0348	0.0774* 0.0347	-0.0003 0.0009	0.0212 0.0443	0.2221*** 0.0590	0.1278 [†] 0.0751
AGE*AGE	-0.0016** 0.0006	-0.0016** 0.0006	0.0000 0.0000	-0.0004 0.0008	-0.0045*** 0.0010	-0.0027* 0.0013
GERMAN	-0.0005 0.0392	-0.0003 0.0391	-0.0001 0.0008	0.0175 0.0337	0.0115 0.0682	0.0415 0.0679
LOYALTY	-0.0007* 0.0002	-0.0007* 0.0002	0.0000 0.0000	-0.0001 0.0003	-0.0011 0.0004	0.0005 0.0007
Position						
GOALKEEPER	Ref.	Ref.	Ref.			
DEFENDER	0.7033*** 0.0410	0.7005*** 0.0410	.0027** .0008			
MIDFIELDER	1.6203*** 0.0545	1.6096*** 0.0543	.0106*** .0011			
STRIKER	2.3527*** 0.0612	2.3416*** 0.0612	.0111*** .0012			
SEASON FEs	YES	YES	YES	YES	YES	YES
CLUB FEs	YES	YES	YES	YES	YES	YES
Observations	52,671	52,671	52,671	16,456	21,652	10,662
Clusters	1,108	1,108	1,108	512	813	404
Prob > F	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
R ²	0.3039	0.3028	0.0053	0.0679	0.1567	0.2995

Abbreviations and notes: Goal scoring opportunity (GSO); Goal scoring opportunity without shot (GSOws); Reference category (Ref.); Robust standard errors in bold. †, *, ** and *** indicate statistical significance at the 10% ($p < .10$), 5% ($p < .05$), 1% ($p < .01$) and .01% ($p < .001$) level, respectively.

The first two independent variables, PERFORMANCE and MINUTES, indicate stable statistical effects throughout all specifications (all at $p < .001$ level) on GSO. This implies that the collaborative behavior towards players increases with higher previous PERFORMANCE. Thus, the better players have performed in the recent past, the more final passes they can expect to receive leading to a GSO. Our analysis reveals, in fact, a rather strong effect of performance. An increase of the performance average of the last five games by one grade point, increases, ceteris paribus, in our base specification (specification (1)), one can expect .16 additional final pass leading to a GSO in a game. Furthermore, the positive statistical effect of MINUTES is also plausible; the longer players are on the pitch, the more likely they are to receive a final pass to a GSO.

DOES PHYSICAL APPEARANCE IMPACT COLLABORATIVE BEHAVIOR OF PEERS?

Nevertheless, the results for the independent variables depicting physical appearance are surprising. Contrary to our hypotheses, we neither observe a statistically significant effect for FACE, nor for SKIN. As a result, apparently collaborative behavior in the Bundesliga does not depend on how facially attractive a peer player is. Likewise, Bundesliga players do not seem to care either about the skin type of their teammates. At least they do not base the decision whom to provide the final pass for a GSO with. The results for FACE and SKIN are consistent in all specifications. Both our robustness checks, the distinction between those GSO that ultimately lead to a goal attempt (specification (2)) and those that did not (specification (3)) reveal very similar results. Also, the distinction between players' positions does not reveal any impact, neither of FACE, nor of SKIN on collaborative behavior of Bundesliga players.

However, regarding the third appearance variable, GESTALT, we do find a positive effect in our base specification (1) (at $p < 0.05$ level). Despite the fact, that these results confirm our initial hypothesis regarding the impact of players' body height on collaborative behavior in terms of final passes towards them, the effect size is only moderate. Also regarding our two robustness check analyses, the results are mixed: Whereas we find statistical significance in both specifications (2) and (3), we determine even a small negative effect in specification (3). Nonetheless, also the results with respect to the different player positions are inconsistent (specifications (4)-(6)). While we can confirm a positive impact of GESTALT with regards to the collaborative behavior towards defenders and strikers (both at $p < 0.001$ level), the impact of GESTALT on the willingness to cooperate towards midfielders is even negative, even though if not statistically significant.

Likewise, the two variables depicting the players' experience, namely AGE and LOYALTY, depict also inconsistent results. We find in specification (1) and (2) a significant quadratic effect (at the 0.05% level) for AGE implying that players towards the midst of their careers, to be precise about at age 23.4, have the highest chances to be met with relevant collaborative behavior by their teammates.¹⁰⁸ Nonetheless, we can only confirm this effect with statistical significance for midfielders (at $p < 0.001$ level) and for strikers (at $p < 0.05$ level), but not for defenders, if player positions are examined separately. With respect to LOYALTY, the likelihood to receive decisive passes for GSO and ATTEMPTS seem to reduce the longer the tenure with the own team, at least for specification (1) and (2) (both at the 0.05% level). Thus, interestingly, the more games the player has played for his current club, the lesser the likelihood to

¹⁰⁸ The likelihood of receiving decisive passes prior to GSO and ATTEMPTS is lower when players are younger, hence in the beginning of their careers, and also decreases once they grow older, namely towards the end of their careers.

DOES PHYSICAL APPEARANCE IMPACT COLLABORATIVE BEHAVIOR OF PEERS?

be met with collaborative behavior in the form of final decisive passes to GSO and ATTEMPTS, although the effect size is quite small.¹⁰⁹ However, it must be pointed out that this effect is not robust over the regression analysis for the single positions (specifications (4) - (6)).

Finally, the nationality of a player does not seem to make any difference with regards to collaboration in decisive situations in the Bundesliga. We cannot provide any indication, neither in the base specification (1), nor in the robustness analyses (specifications (2) - (6)).

Overall with respect to the most important variables of this study, namely the measures of physical appearance, we can state quite constant results, if we compare the results of the base specification (1) with those altering in the dependent variable (specification (2) and (3)) or looking at player positions separately. Moreover, mindful of the reported R², the quality of the model can be judged as fairly good.

4.5 DISCUSSION

Our results are, at first sight, surprising. Against our hypotheses, neither in our models incorporating all Bundesliga players at once, nor in any of our models for players' positions on the pitch, we find impacts through players' facial attractiveness on the likelihood to be met with a more collaborative behavior from their peers. Similarly, there is also no indication that the players' skin tones determine the teammates' decision to increase collaboration, as we also neither can report statistically significant effects of players' skin tones in the analysis for all players independent of their position, nor for ones on any single position.

However, this seems slightly different for height. Players' body height is the only appearance-related variable in our model with at least some significant effect on the collaborative behavior of the Bundesliga players' teammates. Nonetheless, the effect is far from being stable over all our specifications and also rather small in those regression analyses where it does have a significant impact. If, as hypothesized, the body height of the players had an impact on the players' status in their teams, we would have expected a stable effect independent of the players' positions. However, mindful that we only can report a statistically significant impact of defenders and strikers on experienced collaborative behavior and conscious of defenders as well as strikers being considerably taller compared to midfielders,¹¹⁰ an interpretation with regards to physical (performance) advantages of taller players seems more convincing: Defenders and strikers are more likely to score (header) goals, which makes it plausible why they are put in

¹⁰⁹ In specification (1), the likelihood of receiving a final pass for a goal attempt more decreases, *ceteris paribus*, by about 0.07% per game the player has accomplished for his current club.

¹¹⁰ The average height of a midfielder in our sample is 181 centimeters. The average height of defenders and strikers in our data set is 185 and 184, respectively.

DOES PHYSICAL APPEARANCE IMPACT COLLABORATIVE BEHAVIOR OF PEERS?

the limelight by their colleagues. Thus, taking all results of the three analyzed appearance dimensions together, we cannot confirm that "beauty matters" (Rosar et al., 2008, p. 64) in our study.

To the contrary, for players in the Bundesliga, we can state that at least to a considerable degree beauty or rather physical appearance does not matter, as opposed to performance. The recent performance of their teammates does in all six specifications have a very robust impact on the collaborative behavior Bundesliga players are met with (all at $p < 0.001$ level). In truth, it seems that the (current) state of a player's performance, as opposed to physical appearance, determines whether a player is considered for decisive collaboration by teammates. The better a player had performed recently, the more likely that his teammates collaborated with him and gave him the opportunity to score a goal.

However, our results only superficially contradict the current state of attractiveness research; it rather puts it into concrete terms and expands its scope. Certainly, most studies, generally conducted in an experimental setting, investigating the relationship between the physical appearance and cooperative behavior come to the result that co-workers prefer collaborating with rather attractive colleagues. But very likely due to self-interest and in order to maximize their own outcome and success:

In experimental settings the level of information regarding the protagonists on their fellow players is low. Hence, subjects have only limited information about their co-probands and their performance as well as little time to get to know more about them. The most obvious information available is the physical (in most cases the facial) appearance of fellow players (Mulford et al., 1998; Solnick & Schweitzer, 1999; Andreoni & Pertie, 2008). Thus, in these settings certain aspects of physical appearance, following the line of argument of the attractiveness stereotype (Dion et al., 1972), seem to hold out the prospect of a better performance of co-workers (Efran & Patterson, 1974; Chung & Leung, 1988; Klein & Rosar, 2005; Hamermesh, 2006) and a more reciprocally collaborative behavior (Oliver, 1974; Darley & Fazio, 1980). In order to maximize their own chances to success, it is not surprising that probands choose to collaborate with teammates that are physically attractive, i.e. teammates with whom they associate greater performance abilities.

In contrast to other research studies, in our setting, however, the protagonists did have a higher variety of information on their teammates at their disposal. For example, for our analysis we can reasonably claim that in the Bundesliga teammates know each other, their strengths, weaknesses and collaborative behavior, as they have interacted with one another multiple times prior to the observations. Even more important, teammates know about the current performance

DOES PHYSICAL APPEARANCE IMPACT COLLABORATIVE BEHAVIOR OF PEERS?

of their peers and, as indicated by the results of our analysis, apparently make the expectations of positive results, i.e. whether the teammate is likely to score a goal, the decisive criterion of whether or not to cooperate with him, i.e. providing him with the last pass. This argument is also in line with our results regarding players' body height of the players. Passing players on the pitch look out for teammates that due to their radiuses of movements and higher reach are more likely to score goals. Consequently, it appears comprehensible that Bundesliga players prefer cooperating with players who have shown very strong performance and hence hold out the prospect of success for themselves rather than with those who teammates that are attractive.

4.6 LIMITATIONS AND FURTHER RESEARCH

Despite the rather clear results derived from our study, we think that further research regarding the impact of physical appearance on collaborative behavior in real working environments is necessary. In particular, we see the need for more research investigations in three dimensions.

First, as we are among the first ones investigating the impact of physical appearance on collaborative behavior among true colleagues, there is definitely a need to investigate whether our results are transferable to other labor markets. It is worth noting that in our setting it was recent performance that had a significant impact on collaborative behavior. Hence, for future research setups in this regard it is important to likewise select a setting where protagonists are also relatively easy able to assess the current performance level of their peers. Moreover, it would also be interesting to investigate the research question in a setting that is less competitive than high-performance sport. It would be insightful to see, if past performance still prevails as main determinant for collaborative behavior, if the dimension of occupational success carries less importance for the employee.

Second, with incorporating not only facial attractiveness, but also body height and skin tone as additional aspects of physical appearance, we are complementing other studies investigating the impact of physical appearance on collaborative behavior. As discussed earlier, most studies are limited to facial appearance. Nonetheless, investigating the effects of other aspects of appearance, such as hair color or eye color, on collaborative behavior would further improve the research validity.

Third, although we have reached already a remarkable coefficient of determination with our model, there is no doubt about the fact that there are more factors determining collaborative behavior in soccer than the current performance level, the colleagues' roles and responsibilities and their body height. In fact, it is to be expected that the determinants leading to collaborative

DOES PHYSICAL APPEARANCE IMPACT COLLABORATIVE BEHAVIOR OF PEERS?

behavior, or preventing it, may vary with respect to labor markets particularities. Of particular interest seem the interpersonal relationships between the subjects in this context. Even though in our study we ensured for developed relationships between the players, controlling for details about the exact relations the subjects had to one another would benefit the further understanding of collaborative behavior in real-world labor market settings.

4.7 CONCLUSION

There is evidence, that aspects of physical appearance are in general applied as an indicator for assumed actions in the future, such as expected performance or anticipated reciprocal collaborative behavior. This seems to hold true, in particular in situations that are characterized by a lack of other verifiable information which may alternatively guide individuals' decision making. Nevertheless, as we have shown in the context of soccer, this may change in situations where more relevant information becomes available. Investigating the collaborative behavior in the most important situations in the German Bundesliga, namely the last passes prior to a goal attempt opportunity, we found very little indication that physical appearance has an impact on collaborative behavior of teammates. In this study, we show that decision making with respect to collaborative behavior is rather guided by the (current) performance level of the potential collaboration partner. Thus, if more relevant information supporting informed decision making is available, the less likely individuals base their collaborative behavior on physical appearance. Thus, similar to our results from chapter 3, we again found indication that protagonists apply attractiveness as criterion for decision making only, if no better indication is available.

CONCLUSION

5 CONCLUSION

5.1 OVERALL SUMMARY

The objective of this dissertation was to investigate which stakeholders under which circumstances on actual labor markets (as opposed to experimental research settings) are sensitive to physical appearance of employees. In order to achieve this objective I broke this overarching topic over the course of the analyses down into three research questions:

1. What is the current state of research with regards to the treatment of employees based on their physical appearance?
2. Does the attractiveness stereotype in labor markets prevail, even if individual performance is transparent?
3. Does the physical appearance of employees in real labor market settings determine the willingness for collaboration of their peers?

I addressed each research question in one separate research paper. While all stand-alone papers contain both, a detailed discussion of results as well as the identification of needs for further research endeavors, in this section I will complement them by a high-level summary of major results of this thesis.

In my first research paper I conducted an extensive review of the relevant literature, including a comparison of relevant attractiveness measures as well as an analysis of the impacts of employee discrimination by the three main employee stakeholder groups, namely employers, customers and co-workers, comprised by over 300 relevant publications. Based on the review, we derived that physical appearance may have a remarkable impact on employee' opportunities on labor markets. Being the most determining characteristics of human physical appearance, academic research has in particular found facial attractiveness, body gestalt and ethnic type to determine the behavior of employers, customers and co-workers towards employees. An attractive facial appearance, for instance, is of advantage for employees with respect to all three stakeholder groups. Facially attractive employees cannot only expect increased opportunities granted by their employers, but also a more favorable (buying) behavior of their customers as well as indications for increased willingness for cooperation by co-worker. With regards to body gestalt, we find that similar to facial attractiveness taller employees on average can expect benefits, at least from employers and customers. The results regarding body weight, however, vary with regards to employees' gender. In general, men tend to suffer remarkably less from weight-related discrimination on labor markets than women. Customers, however, tend to dis-

CONCLUSION

criminate against overweight female and male employees. Finally, we found indication for discrimination of employees with a darker skin tone. While the impact of racial discrimination is unequivocal for employers, the results regarding customer discrimination are ambiguous and strongly situation-dependent. Interestingly, in none of the three dimensions of physical appearance a uniform and universally accepted measurement approach has been developed. In contrast, there are various for each dimension, each with advantages and disadvantages. Going forward, it is to be expected that the number of measurement approaches due to new opportunities in digital data processing rather increases than decreases.

In my second research paper, I assess the question whether advantages for physically attractive individuals in work-related settings prevail, if individual performance is measurable and publicly available. In doing so, I analyzed the two stage award process of the Player of the Month in the Bundesliga, the German top-tier soccer league. Applying an extensive and for the purpose of the research question favorable set of data, I was able to circumvent the critical constraint that in most studies proving the existence of an attractiveness stereotype, an adequate assessment of attractive individuals' performance is, if at all possible, very difficult for subjects. Despite analyzing multiple characteristics of physical appearance -facial attractiveness, body height, skin tone as well as hair color- I did not find any indication that the physical appearance of the players standing for election for the award influenced its outcome. To the contrary, there was no effect through the attractiveness stereotype ascertainable, neither for the peer voting, nor for the public stage of the award. In contrast, the in context of my research setting measurable individual performance of the Bundesliga players drove the award results. As a result, peers and the interested public, as voters responsible for the award outcomes, did not apply players' physical appearance as decisive criterion for their voting behavior, but players' actual performance. I derive that due to the transparent performance of the players in the Bundesliga, physical attractiveness loses its function as a proxy for (assigned) performance resulting in an orientation along actual player performance in both stages of the Player of the Month award.

My third research paper addresses whether employees in real labor markets tend to collaborate more likely with physically attractive co-workers rather than with ones that have recently proven high performance. Again, I took advantage of the favorable conditions of soccer in the German Bundesliga and analyzed the behavior of players in the most decisive situations, namely those in close proximity to the opposing goal. To be more precise, I analyzed whether the physical appearance of players, as in my second research paper assessed in various dimensions, influences their peers whether or not to provide the last decisive pass prior to a goal scoring opportunity. I found that this is not the case. Peers' collaborative behavior is rather

CONCLUSION

influenced by the current performance levels of their teammates. I concluded that the explanation for the lack of impact of physical appearance lies in the protagonists' state of knowledge regarding their teammates' relevant characteristics for their own success. Peers' may, out of sheer self-interest, neglect the physical appearance of their teammates in the collaboration decision, as they have more relevant information with respect to their own benefit available, namely the performance level of their teammates. As a consequence, players choose to collaborate with teammates that recently provided superior performance for their team. Their physical appearance is irrelevant.

Summing up, the three research papers provide clear answers to all three outlined research questions: First, physical appearance has a great impact on the demeanor employees are met with on the labor market by employers, customers and co-workers. This holds true in particular with respect to facial attractiveness, body gestalt and ethnic type. Second, we found evidence that the attractiveness stereotype does not prevail in labor markets, if individual performance is transparent; it is rather performance that drives individual success. And third, we did not find any evidence that physical appearance of employees in real labor markets influences cooperative behavior; a higher individual performance level of the co-workers rather leads to an increased willingness for collaboration.

5.2 RESEARCH CONTRIBUTION AND FUTURE DIRECTIONS

Overall, my dissertation contributes to the existing research in multiple dimensions: First, the present work assembles the extant literature on employee discrimination in labor markets through aspects of physical appearance. Second, it structures and assesses the consequences of appearance-related discrimination for employees by various employee stakeholder groups (employers, customers, co-workers) and by a variety of different appearance aspects (facial attractiveness, body height, body weight, skin color). Third, my dissertation not only challenges the generally acknowledged attractiveness stereotype in labor market settings, but also provides proof for its limits. Moreover, a hypothesis for conditions essential for it to work is derived. Finally, my dissertation sheds light on the so far scientifically unaddressed question whether collaboration among co-workers in occupational settings is fostered by attractive physical appearance.

Apart from content-related contributions, this dissertation also contributes to the existing literature by indicating areas for further research. First, while employer and customer discrimination on labor markets are rather well-explored scientifically, this is not the case for co-worker discrimination. In particular the question remains unanswered, whether also co-workers

CONCLUSION

tend to discriminate against, based on the physical appearance of their peers. Although there have been some studies on facial attractiveness in this regard, research, in addition to the content of this dissertation, in particular addressing body-related appearance aspects as well as appearance aspects determined by the ethnic type would be beneficial.

Second, while the multilayered differences among employees of varying physical appearance are outstandingly well proven, confirmed and documented the link between actual performance as opposed to perceived performance has been rather neglected in the academic perspective. Presumably, one decisive reason may be the difficulty of objectively measuring job-related performance in a way that it is comparable among employees, and even among employees of different tasks and responsibilities.

Third, there are limitations to the attractiveness stereotype that cannot be neglected. These insights call for further research in various forms. For instance, with respect to investigating those conditions further that ultimately led to the evaluation of the peers and the public along actual performance and consequently resulted in the absence of the attractiveness stereotype. This requires also the analysis of further labor markets where employee performance as well as individual work-related success is transparent and measureable. Especially it appears reasonable to investigate labor markets in another industry and with both, male and female employees.

Fourth, it is essential to increase also the research base with regards to the influence of physical appearance on the collaborative behavior of colleagues in real labor markets. As discussed previously, to our knowledge we are among the first to investigate this topic, apart from studies analyzing results from experimental settings. Further studies on this topic are in particular needed to substantiate our research results presented in this dissertation.

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APPENDIX

APPENDIX

Appendix Table 1: Overview on attractiveness stereotype research in work-related settings

Authors	Year	Country	Evaluees	Decision authority	Attractiveness rater(s)	Attractiveness reference	Attractiveness assessment	Method	Real-life/experiment	Result regarding attractiveness	Performance control
Efran & Patterson	1974	Canada	Parliamentary candidates	Voters of federal election	High school students	Facial photographs	subjective	Effect evaluation of facial appearance on chances to win a seat in a parliament	Real-life	Attractive candidates on average with more votes	no
Dipbove et al.	1977	US	Job applicants	Student interviewers	Prior research	Facial photographs	subjective	Interviewer conducted bogus job interviews	Experiment	Qualified, male and attractive candidates were preferred	no - except for resume
Cash et al.	1977	US	Students	Personnel consultants	Students	Facial photographs	subjective	Effect evaluation of physical attractiveness on job suitability ratings	Real-life experiment	Physical attractiveness affects personnel decisions favoring good-looking applicants	no
McLean & Moon	1980	US	Survey participants	Labor market	Survey participants	Weight self-assessment	subjective	Effect evaluation of weight data and income	Real-life	No earnings-depressant effect due to obesity	no
Ross & Ferris	1981	undisclosed	Employees	Labor market	Researchers and faculty members	Facial photographs	subjective	Effect evaluation of physical attractiveness on performance and salaries	Real-life	Physical attractiveness related to performance and salaries	yes - based on employee performance evaluations and partly supervisor ratings
Mazur, Mazur, & Keating	1984	US	Military personnel	Career decision-making body	Students	Facial photographs	subjective	Effect evaluation of facial appearance on promotion to higher military ranks	Real-life	Correlation between facial appearance and military rank	no
Riggio & Throckmorton	1988	US	Students	Students	Students	Third party evaluation	subjective	Interviewee evaluation with effect measurement of i.a. physical attractiveness	Experiment	Strong influence of subjects' appearance on assessments	no - except interview video
Frieze et al.	1991	US	MBA graduates	Labor market	Independent judges	Facial photographs	subjective	Effect evaluation of physical attractiveness on personal incomes	Real-life	Higher starting salaries for men and higher earnings later for attractive women and men	no
Zebrowitz, Tenenbaum & Goldstein	1991	US	Job applicants	Students	None	Facial photographs	subjective	Effect evaluation of facial maturity and gender on hiring recommendations	Experiment	Discrimination based on gender and facial appearance, esp. "babyfacedness"	yes - based on grade averages
Reingen & Kernan	1993	undisclosed	Students	Students	Independent judges	Facial photographs	subjective	Assessment of impressions of the photographed persons	Experiment	Attractive persons are associated with selling effectiveness traits	no
Reingen & Kernan	1993	undisclosed	Students	Students	Independent judges	Facial photographs	subjective	Mock sales calls influenced by letters with salesman picture	Experiment	Attractive salesmen more likely to granted demo appointments and to sell	no
Reingen & Kernan	1993	US	Students	Charity donors	Independent students	Facial photographs	subjective	Effect evaluation of physical appearance on charity generosity	Experiment	Attractive solicitors get a higher proportion of pedestrians to donate	no
Hamermesh & Biddle	1994	US/Canada	Household survey participants	Labor market	Household interviewers	None - estimation by interviewers	subjective	Effect evaluation of physical appearance on earnings	Real-life	Positive impact on earnings, penalty for below-average looks	no

APPENDIX

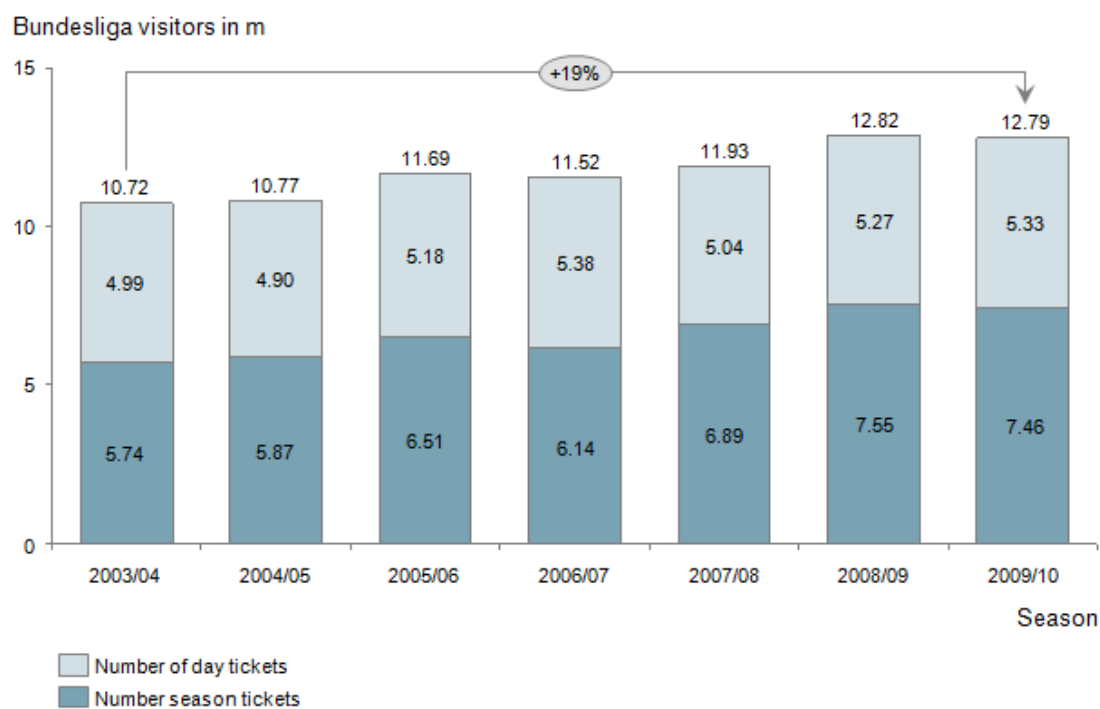
Averett & Korman	1996	US	Survey participants	Labor market	Survey participants	Weight and height self-assessment	subjective	Effect evaluation of weight data and income	Real-life	Obese women with lower family incomes, results for men weaker and mixed	no
Biddle & Hamermesh	1998	US	Law students/attorneys	Labor market	Independent judges	Facial photographs	subjective	Effect evaluation of law school graduates' physical appearance on later earnings	Real-life	Better-looking attorneys earn more - private sector with better-looking attorneys	no - except for compensation data
Mulford et al.	1998	undisclosed	Experiment participants	Experiment participants	Experiment participants	Assessment of all by all	subjective	Effect evaluation of physical attractiveness on others' willingness to cooperate	Experiment	Subjects rather enter play and cooperate with attractive persons	no
Harper	2000	Great Britain	Birth cohort	Labor market	Teachers	None - estimation by teachers	subjective	Effect evaluation of physical appearance on earnings	Real-life	Small premiums on attractiveness, penalty for plainness	no
Pfann et al.	2000	The Netherlands	Members of an associations of advertising firms	Labor market	Independent judges	Facial photographs	subjective	Effect evaluation of advertising firm executives' physical appearance on their firms' revenues	Real-life	Advertising firms with better-looking executives have higher revenues	no
French	2002	US	Employees	Labor market	none	Self-assessment	subjective	Effect evaluation of physical attractiveness on personal income	Real-life	Earnings premiums for attractiveness for women, but not for men	no
Sachsidat et al.	2003	Brasil	Shopping mall salespeople	Labor market	Interviewers	None - estimation by interviewers	subjective	Effect evaluation of salespersons' physical appearance on wages	Real-life	Attractive salespeople earn above average, but also higher productivity	no - except partially for commission
Persico, Postlewaite, & Silberman	2004	Great Britain/US	Birth cohorts	Labor market	Birth cohorts	Height self-assessment	subjective	Effect evaluation of body height on wage progression	Real-life	Taller employees receive a compensation premium	no
Hamermesh & Parker	2005	US	University teachers	Undergraduate students	Students	Facial photographs	subjective	Effect evaluation of university teachers' physical appearance on student instructional ratings	Real-life	Instructors who are viewed as better looking with higher instructional ratings	no - expect for student instructional ratings
Heineck	2005	Germany	Survey participants	Labor market	Survey participants	Height self-assessment	subjective	Effect evaluation of height on income	Real-life	Height wage premium for male workers from West Germany	no
Möbius & Rosenblat	2006	Argentina	Mock "workers"	Mock "employers"	High school students	Facial photographs	subjective	"Employers" determine wages of "workers" performing a maze-solving task	Experiment	Beauty premium and higher confidence level for attractive workers	yes - but not close to job task
Süssmuth	2006	Germany	University teachers	Students	Students	Facial photographs	subjective	Effect evaluation of university teachers' physical appearance on student instructional ratings	Real-life	Attractiveness of teachers has weak impact on the evaluation outcomes	no - expect for student instructional ratings
Klein & Rosar	2005	Germany	University teachers	Students	Independent judges	Facial photographs	subjective	Effect evaluation of university teachers' physical appearance on student instructional ratings	Real-life	Attractive lecturers with better evaluations of their courses	no - expect for student instructional ratings
Andreoni & Petrie	2008	US	Experiment participants	Experiment participants	Independent judges	Facial photographs	subjective	Observation of cooperation with attractive individuals	Experiment	Beauty premium disappears when information on individual contributions is overt	yes - but no job-related performance
Rosar et al.	2008	Germany	Constituency candidates	Voters of federal election	Members of an online panel	Web survey based on photographs	subjective	Effect evaluation of facial appearance on chances to win a seat in a parliament	Experiment	Attractive constituency candidates have higher chances to be elected	no
Fletcher	2009	US	High school students	Labor market	Single rater	Personal evaluation	subjective	Effect evaluation of high school graduates' physical attractiveness on their wage progression	Real-life	Attractive high school graduates with earnings premium and higher ability level	no

APPENDIX

Johnston	2010	US	Survey participants	Labor market	Survey participants	Self-assessment of hair color	subjective	Effect evaluation of hair color on wage progression	Real-life	Blond women receive a wage premium; their spouse's wages are higher	no
Ruffle & Shudiner	2010	Israel	Students/employees	Recruiting employers	Independent judges	Facial photographs	subjective	Effect evaluation of physical attractiveness on employee recruiting callbacks	Real-life experiment	More employer callbacks to attractive men; women without picture with higher callback rate	no
Han, Norton & Powell	2011	US	Birth cohorts	Labor market	Birth cohorts	Height and weight self-assessment	subjective	Effect evaluation of body height and weight on wage progression	Real-life	Wage penalty for over-weight women, none for men	no
Loureiro, Sachsida, & Cardoso de Mendonça	2011	Brasil	Employees	Labor market	none	Self-assessment	subjective	Effect evaluation of physical appearance characteristics on wage progression	Real-life	Disability, low weight and height and visible dental problems affect wages negatively	no
Pareek & Zuckerman	2011	International	Hedge fund managers	Investors	Independent judges	Facial photographs	subjective	Effect evaluation of physical appearance on entrusted capital	Experiment	Hedge fund managers whose photographs are rated as more trustworthy attract greater fund flows	yes - controlling for past performance
Doorely & Siermiska	2012	Germany & Luxembourg	Survey participants	Labor market	Partially interviewers	Interviewer assessment and self-assessment	subjective	Effect evaluation of physical appearance on earnings	Real-life	Attractiveness premiums for both men and women; men with a stronger effect	no
Deryugina & Shurchkov	2013	US	Students	Students	Students	Facial photographs	subjective	3 realistic working tasks combined with wage bids for variously attractive "workers" by "employers"	Experiment	Beauty premium in a bargaining task, but when true abilities are unveiled premium disappears	yes - but for selected tasks only
López Bóo, Rossi, & Urzúa	2013	Argentina	Real and manipulated photos	Recruiting employers	none	Manipulation of photographs	subjective	Effect evaluation of physical attractiveness on employee recruiting callbacks	Real-life experiment	Attractive people receive more and sooner employer callbacks	no
Halford & Hsu	2013	US/ international	CEOs of S&P 500 companies	Investors	Anaface.com score	Web photo analysis application	objective	Effect evaluation of physical attractiveness on shareholder value	Real-life	Attractive CEOs associated with better stock returns around their first day in office	no
Scholz & Sicinski	2015	US	School cohort	Labor market	Independent judges	Facial photographs	subjective	Effect evaluation of school cohort students' physical appearance on their wage progression	Real-life	Attractive male high school graduates have higher subsequent earnings	no
Gehrsitz	2014	Germany	Survey participants	Labor market	Interviewer	Interviewer assessment	subjective	Effect evaluation of physical attractiveness on labor supply and income	Real-life	Attractiveness increases employment probabilities and associated with higher spousal income and employment	no
Borland & Leigh	2014	Australia	Survey participants	Labor market	Partially interviewers	Interviewer assessment and self-assessment	subjective	Effect evaluation of physical attractiveness on household income	Real-life	Beauty significantly affects total household income	no
Postma	2014	International	Professional cyclists	not applicable	Public	Public rating of attractiveness	subjective	Effect evaluation of physical attractiveness on performance	Real-life	Riders that performed better were more attractive	yes

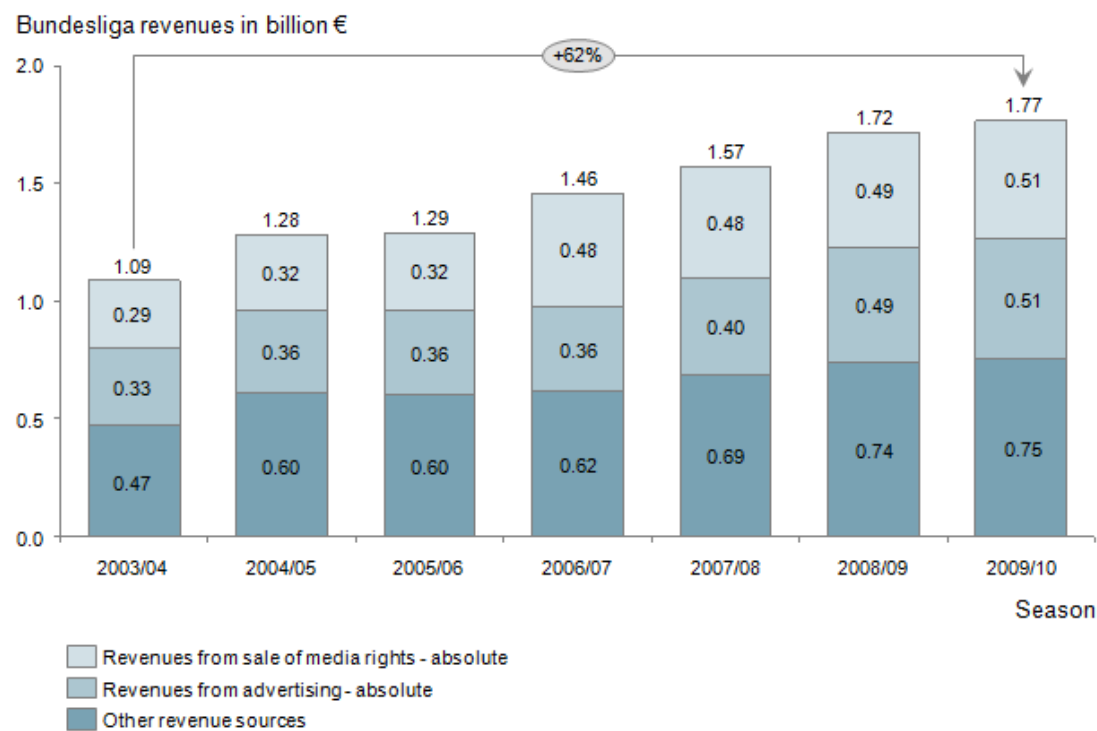
APPENDIX

Appendix Figure 1: Visitors in the German Bundesliga



Source: (DFL Deutsche Fußball Liga GmbH, 2013)

Appendix Figure 2: Sources of revenues of the Bundesliga



Source: (DFL Deutsche Fußball Liga GmbH, 2013)

APPENDIX

Appendix Figure 3: Fußballer des Monats Online Example




Fußballer des Monats | Oktober

Mehr Informationen

- Startseite
- Jetzt abstimmen
- Die bisherigen Sieger
- So läuft die Wahl
- So erfahren Sie, wer die Wahl gewonnen hat
- So können Sie gewinnen
- Das gibt's zu gewinnen
- Teilnahmebedingungen
- Impressum

Dejagah, Lucio und Olic stehen zur Wahl

Wählen SIE den Fußballer des Monats!

Für die ganz fetten Schlagzeilen sorgen andere. Aber diese drei sind für ihre Teams nicht minder wichtig. Diego, Ribery, van der Vaart - Stars, die ständig im Mittelpunkt stehen. Die bei der von kicker, DFL und DSF ausgerichteten Wahl zum Fußballer des Monats im Oktober aber keine große Rolle gespielt haben.

Die Bundesliga-Kapitäne, die einmal im Monat ihre Favoriten vorschlagen, setzen auf drei ganz andere Profis - weniger glamourös, aber nicht weniger wichtig. Zur Wahl stehen:



Ashkan Dejagah (21), der Deutsch-Iraner, der sich vom Wirbel um seine Absage für das U-21-Länderspiel in Israel nicht negativ beeinflussen ließ und für Wolfsburg starke Leistungen brachte. Für Ashkan Dejagah wählen Sie 0137 - 989 21 - 11 oder SMS an 82 822 mit dem Kürzel "Spieler 1"



Lucio (29), der brasilianische Nationalspieler, der beim FC Bayern defensiv wie offensiv für viele Akzente sorgte. Für Lucio wählen Sie 0137 - 989 21 - 22 oder SMS an 82 822 mit dem Kürzel "Spieler 2"



Ivica Olic (29), der kroatische Auswahlstürmer, der seinem Ruf als "Kilometerfresser" gerecht und immer wichtiger für Bayern-Verfolger HSV wird. Für Ivica Olic wählen Sie 0137 - 989 21 -33 oder SMS an 82 822 mit dem Kürzel "Spieler 3"

Jetzt sind die Fans gefragt: Stimmen Sie ab per Telefon (0,50 Euro pro Anruf aus dem Festnetz der DTAG), SMS (0,49 Euro pro Nachricht; Digame) oder Internet-Voting, die Adresse: www.fussballer-des-monats.de. Weitere Informationen gibt es auch auf DSF-Videotextseite 360. Bis Mittwoch, 12 Uhr, können Sie abstimmen - und gewinnen!

Als Hauptpreis laden wir den Gewinner zur Ehrung des Fußballers des Monats ein. Anschließend können Sie während des Bundesligaspiels einem kicker-Redakteur und dem DSF über die Schulter schauen. Weitere Preise: drei handsignierte Trikots des Fußballers des Monats.

Source: Award website (<http://www.fussballer-des-monats.de>)

APPENDIX

Appendix Figure 4: Fitzpatrick Skin Type Australian Government



Australian Government
 Australian Radiation Protection
 and Nuclear Safety Agency

Fitzpatrick Skin Type

The most commonly used scheme to classify a person's skin type by their response to sun exposure in terms of the degree of burning and tanning was developed by Thomas B. Fitzpatrick*, MD, PhD. Examples are given below.

* Fitzpatrick, T.B. (1988) The validity and practicality of sun reactive skin types I through VI. Arch Dermatol 124: 869-871.

Eye colour 0. Light colours 1. Blue, gray or green 2. Dark 3. Brown 4. Black	Do you turn brown? 0. Never 1. Seldom 2. Sometimes 3. Often 4. Always	Score <div style="background-color: #008000; color: white; padding: 2px; margin-bottom: 5px;">0-6</div> <div style="background-color: #008000; color: white; padding: 2px; margin-bottom: 5px;">Skin Type I</div> Always burns, never tans (pale white skin)	
Natural hair colour 0. Sandy red 1. Blond 2. Chestnut or dark blond 3. Brown 4. Black	How brown do you get? 0. Never 1. Light tan 2. Medium tan 3. Dark tan 4. Deep dark	<div style="background-color: #008000; color: white; padding: 2px; margin-bottom: 5px;">7-13</div> <div style="background-color: #008000; color: white; padding: 2px; margin-bottom: 5px;">Skin Type II</div> Always burns easily, tans minimally (white skin)	
Your skin colour (unexposed areas) 0. Reddish 1. Pale 2. Beige or olive 3. Brown 4. Dark brown	Is your face sensitive to the sun? 0. Very sensitive 1. Sensitive 2. Sometimes 3. Resistant 4. Never have a problem	<div style="background-color: #008000; color: white; padding: 2px; margin-bottom: 5px;">14-20</div> <div style="background-color: #008000; color: white; padding: 2px; margin-bottom: 5px;">Skin Type III</div> Burns moderately, tans uniformly (light brown skin)	
Freckles (unexposed areas) 0. Many 1. Several 2. Few 3. Rare 4. None	How often do you tan? 0. Never 1. Seldom 2. Sometimes 3. Often 4. Always	<div style="background-color: #008000; color: white; padding: 2px; margin-bottom: 5px;">21-27</div> <div style="background-color: #008000; color: white; padding: 2px; margin-bottom: 5px;">Skin Type IV</div> Burns minimally, always tans well (moderate brown skin)	
If you stay in the sun too long? 0. Painful blisters, peeling 1. Mild blisters, peeling 2. Burn, mild peeling 3. Rare 4. No burning	When was your last tan? 0. +3 months ago 1. 2-3 months ago 2. 1-2 months ago 3. Weeks ago 4. Days	<div style="background-color: #008000; color: white; padding: 2px; margin-bottom: 5px;">28-34</div> <div style="background-color: #008000; color: white; padding: 2px; margin-bottom: 5px;">Skin Type V</div> Rarely burns, tans profusely (dark brown skin)	
		<div style="background-color: #008000; color: white; padding: 2px; margin-bottom: 5px;">35+</div> <div style="background-color: #008000; color: white; padding: 2px; margin-bottom: 5px;">Skin Type VI</div> Never burns (deeply pigmented dark brown to black skin)	

Images sourced from iStockphoto

* The information published here is not intended to take the place of medical advice. Please seek advice from a qualified health care professional.

Source: Website Australian Government (<http://www.arpana.gov.au/RadiationProtection/solaria/online/05/07.html>)