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Measuring gender differences in personalities through natural language in the labor force: Application of the 5-Factor Model

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No. 40-2022

Dania Eugenidis and David Lenz

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Natural Language in the Labor Force: Application of the 5-
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Measuring gender differences in personalities through natural language in the labor force:
Application of the 5-Factor Model

Key Words: Gender Equality; Firm level studies; Web Mining; Germany; Five Factor Model

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Abstract

Gender stereotypes still play a major role in the perception and representation of people in the workplace. Measuring the effects of those stereotypes quantitatively is very hard though. Traditional methods, such as questionnaires, struggle to provide the full picture, for example through misunderstanding, omission or incorrect answering of questions. However, evidence-based policy making requires accurate indicators of gender inequalities to promote equality. We present a framework measuring gender stereotypes on company level using publicly available big data. Specifically, we analyse the one million websites of all German companies using natural language processing with regard to differences in their portrayal of genders through the use of certain terms. We then contextualize the gender stereotype measures following the personality traits of the Five Factor Model and their sublevels. Statistical analysis of the results indicates significant stereotypes within personality traits for large portions of the sample. The qualitative differences in gender presentation are mostly consistent with those found in the literature, which serves as a validation for the presented framework. The presented approach complements traditional quantitative measurement techniques by capturing a mainly latent level of inequality. The fully automated and comprehensive analysis of the linguistic portrayal of gender stereotypes in a corporate context is at low cost, with little delay and at a granular basis.

1 Introduction

Gender inequalities in the labor market have already been identified in numerous studies. Current research finds, for example, that women are not accepted and promoted in certain professions in the same way as men. Official diversity management studies show that around 80% of the representative companies in Germany surveyed aim for a balanced gender ratio (Destatis, 2021a). However, when looking at the distribution among men and women on the management boards of the 200 largest German companies, the proportion of women was just under 15% in 2021 (Destatis, 2021b). Thus, among executive positions, the proportion was only 22.6% (Destatis, 2021c). A disproportionate number of women work in low-level positions, which is partly due to the fact that with equivalent qualifications, the work of male employees is comparably higher valued (Etzkowitz & Ragna, 2010).

In the comprehensive current corporate context, quantitative studies investigating vertical gender segregation are mostly limited to specific dimensions, such as women's quotas. Structural differences in the representation of men and women have not been captured yet. We assume that fundamental differences in the perception of individuals and the associated assessment of their abilities and character traits are strongly dependent on gender and that this ultimately leads to the imbalances measured quantitatively. It is therefore of essential relevance to analyse this latent level of gender

stereotypes in addition to quantitative measures in order to derive conclusions. For example, it can be assumed that companies that strive for gender equality may be more innovative or economically successful. In addition to pure performance-related figures, corporate social sustainability plays an important role in the current work society. Companies attaching importance to corporate social responsibility are found to be more economically successful (Orlitzky et al., 2003). Especially with regard to employee satisfaction, priorities are set in various areas in order to achieve an equal working environment for all social subgroups (Yoon & Chung, 2018).

Existing approaches measuring company level data in a psychological context include qualitative studies for individual companies.¹ However, typical data tools (such as questionnaires) face the problem of being very expensive, not generalizable and time-consuming. It is therefore not possible to obtain generally valid results in the short term or to track changes over time by repeatedly conducting the survey at high frequency. With our approach, it is possible to conduct an almost comprehensive and fully automated analysis of the linguistic portrayal of gender stereotypes in a corporate context. Our framework is not limited to individual sample companies, but is applicable nationwide for companies across all regions and sectors.

We focus specifically on stereotypes in the external presentation within the companies and consult the respective websites for this purpose. The latter represents an important communication channel between the company and external stakeholders such as customers, cooperation partners and potential employees. More than 80% of the total population in Germany and even 100% of 14-49 year-olds are considered regular internet users (Destatis, 2022a). 61% consult the internet for searching information about goods and services (Destatis, 2022b) and 95% made purchases online in 2021 (Destatis, 2022c).

These figures make it clear that an appealing internet presence is enormously important with regard to the general success of the company. In the external presentation, the websites are used to build up sympathy, to strengthen the trust of visitors and customers, to stand out from competitors and to communicate information efficiently and promptly. Employees are also introduced to the visitors, including their personal competencies and characteristics. Subconsciously, gender stereotypes might be transmitted to the public, which constitute the main subject of our analysis.

In this context, the following question is to be answered: Are there systematic differences in the (external) perception and presentation of men and women on corporate websites? Differences regarding predefined personal characteristics are to be quantified using an approach from organizational psychology, namely the Five Factor Model (FFM) of personalities (Costa & McCrae, 1991).

Since more recent studies (DeYoung et al., 2007; Weisberg et al., 2011) found gender differences within each factor that cannot be revealed when focusing only on this level, a subdivision into so-called *aspects* is conducted for each factor.

The remainder of this paper is structured as follows: In Section 2, a review of the relevant literature regarding gender inequality and the organizational psychological models is presented. In Section 3, we detail the data and methods used in our framework. Section 4 provides the main results for the German labor market which is subsequently compared to the literature in Section 5. Section 6 gives an additional insight into different dimensions of the labor market and examines the validity of our framework. Section 7 concludes and outlines future research.

¹ Caliendo et al. (2014) measure market entry and exit conditions at the individual level in Germany, using survey data from the Socioeconomic Panel (GSOEP), a representative household survey. This is described in more detail in section two.

2 Literature

2.1 Gender inequality in the labor market

As already described in the introduction, there is still a strong imbalance at management level in Germany to the detriment of women. Berglund and Thorslund (2012) document that women are disadvantaged in male-dominated industries and excluded from certain technical tasks. Employers assume that women do not have an equivalent level of technical understanding and assertiveness, which means that specific gender roles remain and are still part of the work structure (Berglund & Thorslund, 2012). Kanter (1977) has similar findings and adds that in gender-heterogeneous work groups women are often excluded in decision-making and development processes and treated as “tokens”, i.e. as representatives of their category rather than individuals. Only after a certain limit with members of a minority is reached, a so-called "critical mass", influence can be exerted by this subgroup (Kanter, 1977; Brahma et al., 2021).

These findings are consistent with those of Brader and Lewerenz (2006), who studied the gender distribution at different management levels of 16,000 mainly small and medium-sized German companies and relate it to data of the *Glass Ceiling Index* (GCI). This indicator quantifies the distribution of male and female low- and mid-level employees to the upper level. They report high scores for the GCI, caused by an imbalance in the share of women in high management positions compared to low/middle positions. This phenomenon is amplified as the size of the company increases. The tasks of the respective levels also differ greatly: the upper management level has a disproportionately large range of tasks and responsibilities compared to lower levels (Brader & Lewerenz, 2006). Discursively created social stereotypes explain the above-mentioned imbalances in the labor force that might further lead to the outcome of the GCI (Carli & Eagly, 2007).

Timmers et al. (2010) pursue a similar hypothesis, analysing the impact of 19 gender equality measures² at Dutch universities with the help of the GCI, where the upper level corresponds to full and associate professors. They report comparably lower scores and ceteris paribus less imbalances for universities with a high number of adapted measures and point to the effectiveness of the latter that way (Timmers et al., 2010).

Asymmetries in the employment of men and women with otherwise equal qualifications can be explained by discursively created social stereotypes (Carli & Eagly, 2007): Men tend to be assigned performance-related characteristics, according to which they are then described, while women are associated with adaptive and character-related characteristics. Inter alia, men are generally perceived as more assertive compared to women. This trait often tends to have a negative connotation for women, while being seen as positive for men (Weisberg et al., 2011). Therefore, the characteristics and skills of a successful manager sometimes do not match those of the classical female stereotype (Glick & Rudman, 2012), indicating that the work performance of two equally qualified individuals might be evaluated differently depending on their gender.

This is a well-analysed phenomenon in the field of psychology. Abele and Wojciszke (2007) divide human behavior into two categories, Agency and Communion. The former represents self-efficacy and individual aspiration with traits like *friendly, empathetic, helpful*, while the latter characterizes the desire to form and maintain interpersonal relationships with traits such as *dynamic, self-confident* and *efficient*. Pietraszkiewicz et al. (2018) base their study on this framework and develop dictionaries of

² These include, for example, women in committees, women’s networks or bonuses for hiring a woman.

approximately 400 terms that approximate a division into communal and agentic terms³. Both dictionaries are subsequently applied to language in job applications. They find that male-dominated jobs, i.e. jobs with a low share of women, are mainly advertised with agentic terms, while female-dominated ads are described with communal words.

Consistent to our hypothesis, gender-related differences in external perceptions and their impact on career trajectories can be explained by social and political unconscious constructs and beliefs, in addition to role-specific gender characteristics, finally explaining the results of the GCI in many disciplines. Men are typically associated with traits such as leadership and power, women with adaptive and non-performance traits. The latter might be perceived as unsuitable for leadership positions, as female stereotypes generally do not match the characteristics and skills of a successful leader (Glick & Rudman, 2012). This phenomenon will be discussed in the following.

2.2 Five Factor Model and subdivisions

Our framework aims to analyse the labor market with respect to gender equality perception and stereotypes by combining paradigms from classical organizational psychology with current text data analysis methods.

The theoretical basis for our framework is the FFM of personality. This model is the most widely used classification system for personality traits, identifying five major areas of personality: Openness/Intellect, Conscientiousness, Extraversion, Agreeableness and Neuroticism. These together form the acronym "OCEAN" (Costa & McCrae, 1992a; Digman, 1990; John & Srivastava, 1999). It is assumed that the majority of the variance of an individuals' personality can be explained on these scales, i.e. observable differences in patterns of thought, feeling and behavior. A wide range of traits is assigned to each factor with a description of each given below. The paradigm is universally applicable, regardless of age, gender or other socio-demographic attributes and the individual expressions of the traits usually do not change over time or environment (Costa & McCrae, 1992).

It should be noted that previous studies (e.g. Borghuis et al., 2017; Pietraszkiewicz et al. 2018) are based on questionnaires completed by individuals for themselves. Thus, only self-perception is analysed and measured. Our framework makes it possible to address the same question with completely different measurement instruments. The focus here is on the external representation of individuals caused by gender stereotypes. Yet, Costa and McCrae (1989) find in their questionnaire-based study that personality as perceived by others shows correlations up to 80% with self-assessment. Although there is still a 20% gap, the implications gained in this framework can create comparability and extensions to the literature.

Following the prevailing classical paradigm, suggestions for extensions on the five factors are established by DeYoung et al. (2007): They introduce an intermediate level, where the factors are subsumed into so-called *aspects*, representing related but separate dimensions. With the help of a factor analysis, two aspects are assigned to each factor (DeYoung et al., 2007). These are represented in the following:

Openness/Intellect

DeYoung (2015) highlights the relevance of the Openness/Intellect factor, describing it as an empirically derived personality dimension that quantifies gender-related individual differences in the ability to recognize and evaluate complex patterns of information, i.e. cognitive exploration. What is

³ The authors build and evaluate internal consistency of their dictionaries from a mix of different data sets, such as blog posts, natural speech transcriptions and *New York Times* articles.

to be measured as a matter of priority is the expression of innovative ability and imagination.⁴ Social interaction, the making of tools and human goals require complex mechanisms for the cognitive exploration (DeYoung, 2015).

The differentiation takes place into the aspects of Openness and Intellect. While the former comprises facets with traits such as being artistic, aesthetic, perceptive, poetic or fantasy-prone, the latter describes characteristics like being intellectual, intelligent, philosophical and clever.

Weisberg et al. (2011) use data from the International Personality Item Pool (IPIP; Goldberg, 1999) for their study and find significantly greater average scores for Openness for women and significantly higher scores for Intellect for men. This is explained partly by the fact that men more often overestimate their own intelligence and tend to be comparatively less reserved, which makes them appear more intellectual. Women, on the other hand, are often more open regarding aesthetically oriented characteristics related to preoccupation with sensations and perceptions (for example art), which is reflected in a higher score in this aspect (Costa et al., 2001; DeYoung, 2020).

Conscientiousness

The ability for self-control and rule-following is expressed with the help of the factor Conscientiousness, which is subdivided into the aspects Orderliness and Industriousness (Feingold, 1994; Costa et al., 2001). While the former describes an individual tendency, the latter is seen as the result of an ordering process or behavior (DeYoung et al., 2007).

Sax (2008) investigates the gender gap in academia by comparing the learning behavior of 17.000 students from 200 institutions and finds that women are more likely, inter alia, to take notes, seek feedback and finish homework and assignments. They achieve higher scores for Orderliness, such as with regard to the facets self-discipline or dutifulness.

For many aspects, significant differences and clear tendencies towards one gender can be identified, however, the results from previous studies are rather mixed for the aspect Industriousness. Costa et al. (2001) list cultural reasons that cause gender differences. In their cross-cultural study, Kusnierz et al. (2020) examine the academic success of male and female students in Poland and Ukraine. They find a higher level of internal and external motivation for women (Kusnierz et al., 2020), which might subsequently translate to a higher level of industriousness. Feingolds (1994) results point into the same direction by reporting a higher level of self-discipline for women. This is contrasted by the results of Leon et al. (2017), who find higher scores for males when replicating Weisberg et al.'s (2011) study with a Peruvian sample.

Extraversion

According to DeYoung et al. (2007), Extraversion is subdivided into Assertiveness and Enthusiasm. Assertiveness is derived from Depue and Collins' (1999) definition of *agency* and describes the tendency of a social dominance and leadership role and a distinct ambition to achieve goals.

Contrary to this, Enthusiasm is linked to the trait of associating positive feelings with the expectation of rewards. Social interaction is perceived as rewarding, which is conducive to social behavior and ceteris paribus to extraversion (Depue & Collins, 1999).

Higher average scores are found for women for Enthusiasm, whereas men score higher for Assertiveness (Weisberg et al., 2011; Feingold, 1994; Costa et al., 2001). Women tend to score higher overall at the factor level, however, certain character traits, such as dominance are measured as a part of Assertiveness in which men score higher (Helgeson & Fritz, 1999).

This is in line with the cross-cultural analysis of Williams et al. (1999) who requested college students

⁴ The author notes that the term "imagination" would probably be more appropriate than "openness". But since the acronym of the Big Five ("OCEAN") would have to be renamed, the latter is still in use.

of 25 countries to assign certain character traits to the respective gender. The authors report a comparably higher level of Extraversion for women in their study.⁵

Agreeableness

Agreeableness describes character traits associated with empathy, altruism and niceness. Agreeable people are willing to compromise and are in need of harmony. In addition, the degree of consideration and respect for others' desires and needs is quantified here. Based on this, the subdivision takes place into the aspects Compassion and Politeness (DeYoung et al., 2007). Women are found to achieve significantly higher average scores in both aspects (Weisberg et al., 2011).

Costa et al. (2001) cite biological origins, explaining that evolutionarily, stronger bonds prevailed between women and children, which is why they are more agreeable and nurturing (Costa et al., 2001).

Neuroticism

Neuroticism explains the tendency to react to negative emotions, associated processes and punishment in response to a perceived threat. This manifests itself, for example, in depression or emotional instability. The two aspects are labelled Volatility and Withdrawal. Volatility describes, among other things, emotional instability or difficulties in impulse control, addressing the expressions of emotions. Withdrawal is reflected by susceptibility to a class of negative affect, capturing intrinsic feelings (Weisberg et al., 2011). Women show significantly higher scores for most facets whereas men score higher only in the case of anger in the questionnaire-based literature (Costa et al., 2001). Regardless of gender, it is assumed that companies do not describe their employees by traits indicative of a neurotic personality. Since no reasonable results are expected, we need to adjust this negatively connotated factor. That is, Neuroticism is replaced by Emotional Stability (Caliendo et al., 2014). Emotionally stable people are characterized as being self-confident, relaxed and robust towards stressful situations. Completing and managing daily tasks, as well as managing stress and uncertainty does not pose a problem to them (Caliendo et al., 2014).

To the best of our knowledge, no literature exists on the aspect level yet, which is why this study suggests a replacement of the aspect Volatility by *Consistency*. In contrast to volatile individuals, consistent people have control over their emotions and are less likely to experience mood swings. The second aspect Withdrawal is replaced by *Robustness* here. Individuals with a high expression of this aspect rarely feel sad, anxious or overwhelmed.⁶ According to Weisberg et al. (2011), women score higher for Volatility as well as Withdrawal on average. Using the negative specification of the two aspects, this would mean that men should score higher.

Table 1 summarizes the results from the literature with the respective dominant gender for each aspect.

Aspect	Dominating mean (Literature)⁷
Openness	W (Weisberg et al., 2011; Costa et al., 2001; DeYoung, 2020)
Intellect	M (Weisberg et al., 2011, Costa et al., 2001; DeYoung, 2020)
Orderliness	W (Weisberg et al., 2011; Sax, 2008)
Industriousness	M (Weisberg et al., 2011; Leon et al., 2017); W (Kusnierz et al., 2020; Feingold, 1994)
Assertiveness	M (Weisberg et al., 2011; Feingold, 1994; Costa et al., 2001; Helgeson & Fritz, 1999)

⁵ The method they used is described in section 3 in more detail.

⁶ The terms of the opposite specification introduced here were determined according to the closest orientation to the individual items from IPIP.

⁷ "W" means that women score higher on average, whereas "M" depicts the cases with higher average male scores.

Enthusiasm	W (Weisberg et al., 2011, Williams et al., 1999; Helgeson & Fritz, 1999)
Compassion	W (Weisberg et al., 2011; Costa et al., 2001)
Politeness	W (Weisberg et al., 2011)
Volatility	W (Weisberg et al., 2011; Costa et al., 2001)
Withdrawal	W (Weisberg et al., 2011; Costa et al., 2001)

Table 1: Literature overview of the dominant gender per aspect

While the paradigm of the FFM is used standardly on an individual level in psychological research as well as in the field of personnel economics, its application in an economic-quantitative context on a firm level in very large samples (both in terms of the number of firms and in terms of the number of employees considered) has not been done so far. The technical implementation is described hereafter.

3 Data and method

There are approximately 1.3 million companies economically active in Germany that are listed in the all-encompassing panel company database of the *Mannheimer Unternehmenspanel* (Mannheim Enterprise Panel; MUP). A detailed description of this all-encompassing database can be found in Bersch et al. (2014). In addition to official government firm statistics, this represents the largest company database in Germany. Updated every six months, it provides official company data, including the respective web addresses, i.e. URLs. The URLs are used to call up the web pages and to extract the information and texts that serve as the basis for our analysis. Since not every company provides a web presence, the number of relevant firms is reduced to about 910,000.

Our analysis is limited to texts using the German language. All web pages are available in German, yet the English versions are either congruent or more sparsely available in terms of content, making the additional inclusion obsolete.

The assignment of gender to a person follows the procedure of Eugenidis et al. (2022): To identify employees and persons named on the website, each word listed on the website is checked to see if it is a first name and, if so, which gender that first name is assigned to. In addition to the first name search, a keyword search is also performed with terms like "Mr." and "Ms."/"Mrs.", covering the cases that persons are not listed by their first name. A subsequent analysis of the surnames assures that the word found as a person is indeed a physical person rather than a street or product name, for example. Unfortunately, unlike the first names, there is no complete list of surnames. For this reason, only words beginning with an uppercase letter followed by only lowercase letters are recognized as surnames. Usually, first names are followed by verbs, surnames or punctuation marks - thus, our technique filters out all irrelevant cases. Acronyms, which usually have additional capital letters within the word, are also identified in this way. This makes it possible to identify the firm level distribution without manually analysing each firm individually.

In order to be able to structurally and specifically analyse the external representation with the associated gender stereotyping, dictionaries based on the ten aspects for the FFM are constructed. In the textual context of the person, descriptions are searched for according to the aspects that can be assigned to this person explicitly. The assignment to each person on the website is conducted by determining a maximum distance of four words from each word recognized as a name. The aspect term in this environment (i.e. a word from one of the word lists) is assumed to be referencing to the person. For example, "Mr. Müller is a very assertive employee": "Mr. Müller" would be recognized as a name, and the adjective "assertive" as a term of the aspect Assertiveness.

We include all synonyms and the superlative forms for each aspect as the tone may vary from company to company. "Industrious", for example, can also be referred to adjectives such as "proficient" or to nouns like "proficiency". For this purpose, we use the item list of the aspects scales as a basis. For each

aspect, ten items are questioned that describe the character facets. For example, "I understand things quickly" within the Intellect aspect describes astuteness or alertness. For the two aspects in the Neuroticism factor, the opposite traits were used. The facet "I get angry easily" is not measured by irascibility, but by calmness or meekness. In addition to a manual determination of all relevant terms, the Word2Vec method (Mikolov et al., 2013) is additionally used to identify words with semantically high similarity. This results in 758 terms (including the superlatives) in ten dictionaries in total, of which we were able to match 482 terms across all companies and websites. The full list of words can be found in the appendix, table A1. That is, in each of these cases, a word recognized as a name is in close proximity.

Our method might be associated with measurement inaccuracy, since character traits that are not in immediate proximity to the name cannot be detected. For example, "Mr. Müller" could still be described as "likeable" in a further sentence, but this would not be recorded. Algorithm-based analysis methods from the field of co-reference resolution could therefore replace the buzzword search as a central method in the future. This approach is used to identify statements in the text that refer to specific entities, such as people (Clark & Menning, 2016). In this way, from the original 910,000 companies, 279,000 companies with 193,000 men and 105,000 women are suitable for our dataset, resulting in a women's quota of 35.23%. The gender distribution is only marginally affected by this procedure. Looking at the distribution over all persons without including the aspect terms, it is 32.39%.

This reduction is firstly due to the fact that physical persons including gender cannot be clearly identified, or secondly that persons are identified but no character trait can be assigned to them. In this framework, only those cases for which all this is true are relevant, which explains the large reduction of firms. Exceptional cases where the gender could not be assigned without any doubt are excluded. This refers, for example, to "Kim" and "Michelle", both of which can be male or female first names.

It should be noted that not all companies perform public employee descriptions with the same resources. Large companies may bring in professionals (i.e. marketing or HR) since they have the resources and knowledge to ensure the best possible representation, which might not be the case for smaller firms. The corresponding analysis of this dimension takes place in section 6.1.3.

The concept of classifying adjectives according to gender is already introduced in a study by Williams and Best (1982). In their cross-cultural international study, participants were asked to assign adjectives to one of the two genders, or to indicate gender neutrality. From this, they then calculated the proportion of terms that were more likely to be associated with each gender. They found some individual cultural country-specific differences in the characteristics of how men and women are described, but across countries a high level of similarity was found (Williams & Best, 1982).

Once all characteristics are assigned to the individuals, the mentions of each term per gender can be recorded. Classic two-sample z-tests for testing equal proportions are used to examine whether there are statistically significant differences between men and women within the aspects of the FFM⁸ (Wilson, 1927). We conduct this test for each term and aspect for all firms and across sectors, firm sizes and regions, assuming that differences exist at different dimensions.

⁸Men and women are considered as independent populations following a binomial distribution. The null hypothesis states that there are no gender differences between the proportion values for each term between the populations. The alternative states the opposite, namely significant differences between men and women when using specific terms to describe a personality.

Since the two populations are not equal in size, with about twice as many findings identified as male names, a normalization of the data is performed in the course of the analysis. For this purpose, the number of hits per word is divided by the total number of individuals of the respective gender.

A generalization of the methodological approach in the direction of an intersectional view is also possible. For instance, differences may not only exist between men and women but a migration background might also play a role when analysing equality in the labor market. Using 1000 job openings with 5 applicants per job from the Finnish national employment service, Ahmad (2020) finds that employers significantly prefer Finnish applicants over foreign candidates, and within them, they prefer candidates with a European name over a non-European name. This effect is strengthened by gender: Minority males are consistently subject to a much larger degree of discrimination than minority females (Dahl & Krog, 2018). Based on name recognition of foreign and domestic names, one could perform a similar analysis.⁹

4 Main findings

This section provides a description of the main results of our analysis, namely the findings of whether there exists a significant difference in the way men and women are described using the terms of our aspect dictionaries within the FFM. The interpretation of the results and the inclusion to the findings of the literature is provided in the subsequent section 5.

On the level of individual terms, significant differences are found in 252 of 482 cases (in 30 cases at the 10% level, 54 cases at the 5% level, and 168 cases at the 1% level). Hence, our results support the hypothesis that certain terms and, *ceteris paribus*, certain character traits are assigned to individuals on the basis of gender.

When comparing the hits of all 482 terms for men and women, the largest differences in proportion scores in favour of men are found for “discrete” with 21 times more occurrences than for women,¹⁰ “progressive” with 20 times more hits for men and “self-confident” with 17 times. The traits used most often for women are “friendly” with 40 times more hits, “easy-going” 20 times and “artistic” with 7 times more hits for women than for men. All differences are significant. These findings provide a first impression about possible systematic differences in the description and perception of people driven by their gender. The findings are in line with those of Abele and Wojciszke (2007), who identify words such as “self-confident” as an agentic (i.e. masculine) trait and “friendly” as a communal (i.e. feminine) trait.

Table 2 details the results for the associated terms of each aspect with significance levels given in parentheses. The first two columns depict the number of terms per aspect for which more hits are found for men and women respectively. For example, within the aspect Assertiveness, men are able to achieve a higher score in 30 cases, 16 of which are significant (in eleven cases at the 1% level, once at 5% and four times at the 10% level). Women are able to score higher in 16 cases, yet significance has to be rejected in ten cases (in contrast to significant results twice for the 10%, 5% and 1% level, respectively).

⁹ Since in this study we would like to introduce the new concept first and apply it to the dimension “gender,” it appears more appropriate to apply other social demographic dimensions in more advanced studies in the future.

¹⁰ 39 men and one woman are described by this term in absolute occurrences. To ensure comparability between both populations, the ratios are formed using the normalized values. Absolute values of the remaining terms can be provided by the authors upon request.

The third column indicates which of the two genders¹¹ has a higher mean value across all terms per aspect. The first letter indicates the gender that shows a higher mean across all terms of an aspect in our sample, while the letter in parentheses displays the results from the literature described in table 1.

	Male dominated ($p < 0.01$; $p < 0.05$; $p < 0.1$; $p > 0.1$)	Female dominated ($p < 0.01$; $p < 0.05$; $p < 0.1$; $p > 0.1$)	Dominating mean (estimation)
Assertiveness	30 (11; 1; 4; 14)	16 (2; 2; 2; 10)	M (M) ($p < 0.01$)
Enthusiasm	36 (15; 4; 1; 16)	36 (10; 9; 2; 15)	W (W) ($p < 0.01$)
Industriousness	18 (7; 4; 0; 7)	16 (1; 1; 1; 13)	M (M/W) ($p < 0.01$)
Orderliness	28 (13; 3; 2; 10)	9 (4; 0; 0; 5)	M (W) ($p < 0.01$)
Openness	20 (7; 1; 1; 11)	27 (7; 1; 3; 16)	W (W) ($p < 0.01$)
Intellect	45 (23; 9; 1; 12)	16 (5; 2; 0; 9)	M (M) ($p < 0.01$)
Compassion	17 (6; 2; 2; 7)	17 (9; 1; 1; 6)	W (W) ($p < 0.01$)
Politeness	42 (12; 6; 1; 23)	39 (12; 3; 2; 22)	W (W) ($p < 0.01$)
Consistency (\leftrightarrow Volatility)	8 (4; 1; 1; 2)	12 (5; 2; 0; 5)	W (Volatility: W) ($p < 0.01$)
Robustness (\leftrightarrow Withdrawal)	27 (9; 1; 3; 14)	23 (6; 1; 3; 13)	M (Withdrawal: W) ($p < 0.01$)

Table 2: Results of the two-sample z-test for equality of proportions

4.1 Term level

Table 2 points to the necessity for the subdivision of the factors since the dominant gender differs between the aspects in some cases. The findings of our sample thus support the initial hypothesis of within-factor gender differences.

Regarding Openness/Intellect, for example, there are comparably more terms for Openness found for women. Yet the opposite is true for Intellect. In this case, if only the factor level were examined, it would not be possible to identify these gender divergences. Our results are qualitatively consistent with those of Weisberg et al. (2011), who describe women as more open, whereas men are more intellectual.

¹¹ "W" means that women score higher on average, whereas "M" depicts the cases with higher average male scores.

The result for Industriousness within Conscientiousness is showing a similar tendency for both genders, pointing slightly towards a dominance of men. The majority with 18 of the 34 terms are used more frequently for men, in addition, the findings for women are insignificant in almost all cases. The second aspect shows similar results: Orderliness is a trait that is clearly assigned to men, with 28 out of 37 terms in our sample.

Whereas within the factor Extraversion Assertiveness is a trait clearly attributable to men, no tendency can be identified for Enthusiasm when examining the individual terms. Each gender dominates for half of the terms, and the number of significant differences is high and almost the same for both genders.

The same can be observed with regard to Compassion in the factor Agreeableness. With 17 terms each, too, the distribution in terms of gender dominance is approximately the same. However, what contradicts the results of the literature (for example Weisberg et al., 2011) are the findings for Politeness. Overall, there is a high number of (significant) terms for both genders with a slight tendency towards men's dominance.

Lastly, the results for Emotional Stability with Consistency and Robustness show a female dominance for the former and male dominance for the latter, indicating the existence of a within-factor difference which is revealed by the breakdown into aspects. Emotional Stability specified as the opposite of Neuroticism and should therefore also show correspondingly opposite results. Consistency describes the expression via emotion and indicates higher average female dominance. This is in contrast to the relevant literature, in which women achieve a higher score for Volatility as well. Robustness describing intrinsic emotions unveils higher scores for men for a higher share of terms. This is consistent to our expectations.

4.2 Aspect level

As stated in section 2, several studies find higher mean values for men for the aspects Assertiveness and Intellect and for women for Enthusiasm, Orderliness, Openness, Compassion, Politeness, Volatility and Withdrawal. Overall, seven of the nine results are consistent with those from the literature, namely for the aspects Openness, Intellect, Assertiveness, Enthusiasm, Compassion, Politeness and Robustness. All test statistics are significant. Our results regarding the Orderliness and Consistency aspects differ from those in the literature and favour the opposite gender, possible reasons for this are discussed in section five. Industriousness represents a special case here, as there are no clear results regarding gender dominance in preceding studies. As described earlier, this trait is found to be stronger represented for males in one part of the studies and for females in another part.

Although more male-dominant hits are found for the aspect Politeness, women are able to achieve a higher average score. The significance of the individual terms depends on the size of an absolute difference in the population and on the number of observations. The chance of obtaining a significant result is higher for these cases. The difference in the aspect might therefore be significant because one adjective has particularly many observations with a significant difference.

Looking at the distribution in the usage across all terms of each aspect, men are most often described with terms of the aspects Orderliness, Assertiveness, and Intellect, while women are mainly characterized with Compassion, Politeness, and Openness, which is consistent with expectations from the literature to a large extent.

5 Discussion of the results

As already described in section 4, consistent results to the self-assessing literature are found in seven out of nine aspect cases. It should be noted, however, that a direct comparison is of limited value since

we are examining the external presentation. Nevertheless, it can be seen as much more of a validation of our results.

Industriousness

We find insignificant differences for a majority of the cases, which is in line with the mixed results from the literature. Consistent and valid with past studies, therefore, no clear tendency can be identified with respect to one gender. Our data indicates a higher average score for men, which contradicts to the results of Kusnierz et al. (2020). They document a greater willingness to learn due to higher intrinsic motivation, which results in better average academic performance. Keiser et al. (2016) find similar results and attribute different university performances with equal prerequisites between the genders to the fact that women overall invest more effort in their academic education (Keiser et al., 2016). This contrasts with the results of Weisberg et al. (2011), who report a higher but insignificant value for men. Possible reasons are not discussed further, presumably because the effect is relatively small and insignificant.

Orderliness

Our result for Orderliness and a male dominance differs to those from the literature. Weisberg et al. (2011) report higher (insignificant) scores for women and base their results on data from North America.

Casimir and Waldmann (2007) explain these differences by describing Orderliness as being one of the traits that is culture-dependent, that is differences between studies may arise due to this impact. Schneider and Littrell (2003) documents the character trait of orderliness (along with planning reliability, punctuality and accuracy) to be comparatively highly valued among German managers. Characteristics such as creativity, on the other hand, are hardly required. One of the main tasks of a German manager is to establish and maintain order and reduce uncertainty. German corporate governance is comparatively long-term oriented, requiring a greater degree of planning, orderliness and control. This is opposed, for example, to the English leadership style, which focuses primarily on control after the actual occurrence of uncertainties (Schneider & Littrell, 2003).

In the German language, grammatically masculine role nouns exist for job titles such as "manager" or "managing director" that can be used for both women and men, but often only consider men when interpreted. This creates biases in favor of men, which can reinforce gender inequalities in the labor market (Misersky et al., 2019). Since there are more male managers at the executive level, the character trait Orderliness as a core competence of a leader tends to be assigned to men.

Consistency

Unfortunately, there is no literature describing the opposite specification of the aspect Volatility, a consistent categorization to the literature is only possible and meaningful to a limited extent. We assume consistency to be a trait that includes the control of emotions and moods and opposing volatility, therefore the opposite gender should also dominate. Weisberg et al. (2011) find a higher score for women for Volatility, which is contrary to our results, which suggest female dominance for Consistency. Women are generally considered to be more emotional than men, which is expressed in more volatile behavior (see section two). This is in line with Borghuis et al. (2017) who investigate changes in the five factors for Dutch adolescents and young adults and find temporal dips and a lower degree of emotional stability for girls.

In the following, possible reasons causing diverging results in comparison to the relevant literature are elaborated: Firstly, differences may be due to the different methods used. We exclusively utilize quantitative text analysis-based website data compared to questionnaire-based data to measure gender stereotypes. Also, it should be pointed out again that our model refers to external perceptions,

whereas the results of previous studies were obtained mainly on the basis of self-perceptions. Secondly, structural social differences may also impact the outcome. Weisberg et al.'s (2011) analysis is based on a data set with participants from Canada and the United States. The social structures and dynamics in a foreign labor market may not be comparable to those from Germany, which is considered to be significantly less flexible and dynamic than the U.S. labor market (Jakob & Weiss, 2008).

The third factor that might play a role is language difference and the associated influence in cognition which possibly affects the perception of others or oneself. Different national languages arise from a process of social development (Neis, 2003). The outcome might therefore be highly dependable of the language. Not only the variety of cultures might have an influence, but also the structure of the language and the connection of the relations of all traits at a low level (Saucier et al., 2005). Language thinking also varies between different societies and possibly influences outcomes like the way people are described. Psychological and neuroscientific research shows that language influences not only communication but also brain activity related to behavior, emotions and emotional regulation (Lindquist, 2021). Lastly, as already mentioned in section two, Costa et al. (2001) list biological and cultural reasons to cause gender differences. It might be misleading to argue for biological reasons, since then the relevant differences would be the same across different cultures (Costa et al., 2001). However, the authors note that results are not consistent across cultures, thus there may be differences due to the different languages in addition, in line with Saucier (2005). Kusnierz et al. (2020) support this hypothesis and point out that the FFM is cross-culturally applicable, but the results are dependent on the sample.

6 Additional results and validation

In addition to the overall labor market, our data set provides information for individual analyses of regions, firm sizes and sectors. It is to be assumed that the quality and choice of words differs across firms. The resources available to companies to design their website and thus external presentation vary. In addition, regional language differences and dialects may also play a role.¹² We examine the validity of our framework and our findings with results from previous studies and provide a deeper insight into these dimensions. Labor market related studies, such as Haltiwanger et al. (2014), are typically subdivided into these dimensions. It should be mentioned that the normalization now takes place at the corresponding dimension, rather than the aggregate level over all firms.

6.1.1 Sectors

The distribution among men and women is in part very heterogeneous between the various sectors in Germany. While sectors such as healthcare are comparatively balanced, construction and mechanical engineering are still male-dominated. The first column in table 3 presents the distributions of official data on women's quotas¹³ (*Official quota*; Destatis, 2022d). Only those sectors are listed here that are available with both official data and our data set and are thus directly comparable. The second and third column depict the quotes based on our sample. One quota is formed based on all names mentioned online (*website quota*), not filtering out those cases for which no aspect term could be found. Another quota is calculated on the basis of the names with traits assigned (*Website quota including traits*).

Sector	Official quota	Website quota*	Website quota including traits
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¹² For an overview of regional linguistic variations see for example Ammon et al. (2014).

¹³ These are the proportions of women in management positions in Germany in 2022. Unfortunately, no official data exists at the company level, as can be found in our sample. Primarily, a qualitative comparison is to be conducted, in such a way that similar and opposing tendencies can be identified.

Education	73.4**	40.89	50.00
Health	36.90	47.41	56.33
Retail	26.20	32.1	30.62
Publishing/Media	24.40	30.14	31.80
Total	24.10	25.57	31.28
Real Estate	22.10	29.57	34.55
Logistics/Transportation	19.60	22.27	29.51
Manufacturing	18.30	23.95	35.95
Pharma	17.60	29.46	25.35
Financial services	17.50	21.53	26.25
agriculture and forestry	16.70	30.3	28.51
(mech.) engineering	9.80	14.45	26.07
Construction	9.70	14.73	18.61

Table 3: Women's quotas by sector (in percent)

*: Estimates of the remaining MUP classification sectors according are not listed here, however, can be provided from the authors upon request.

** : Official data on the education sector in Germany only include the proportion of female teachers in general education schools (Destatis, 2022e). This does not include, for example, student advisors, research assistants, etc., and is therefore only representative to a limited extent.

Two things are noticeable when comparing the distributions: first, our sample is qualitatively similarly distributed, with a high women's quota in education and health care and relatively low values in construction and mechanical engineering. Second, the quotas we calculate are substantially higher in absolute terms in most cases. This can be attributed to the fact that our dataset covers the entire gender distribution of a firm, while official data are only available for the share of women in managerial positions.¹⁴ This supports the findings of the literature, for example on the GCI (see section 2), which shows that women are underrepresented in senior management overall.

When looking at the most frequently occurring word per sector, "competent" (in Intellect) is most frequently used for men in eight out of 43 sectors, "friendly" (Politeness) in seven sectors and "strong" (Assertiveness) in three sectors. For women, "cordial" (Enthusiasm) is found most often in 14 sectors, followed by "friendly" and "social" (both Enthusiasm) in four and three cases, respectively. Again, this actuates Abele and Wojciszke's (2007) theory that men tend to be described in agentic terms and women in communal terms.

Gender differences in different sectors are also examined in Bergmann et al. (2018). According to this study, institutional conditions influence income opportunities. Public sectors with a high women's quota, such as healthcare, have income disparities, while private sectors with a balanced gender distribution have smaller gaps. In addition, pay mechanisms such as bonuses and pay rates are mostly managed on an individual basis and the authors find that this is to the disadvantage of women and further increases pay disparities.

Information on wage differentials is unfortunately not given from the website data, but our results are consistent and complementary to those of Bergmann et. al (2018): Healthcare has the highest women's quota at 56% (6212 firms), while finance has a much lower rate at 26% (3596 firms). Looking at the individual aspects, men in the healthcare sector are comparatively most often characterized with the aspects Orderliness, Robustness and Assertiveness, while women are described as enthusiastic, polite and consistent. The trend is similar in the financial sector, where women are

¹⁴ Some companies do not provide information on sector or location. These companies are therefore not included in the calculation and hence the women's quota differs to the one in section 3.

most often perceived as enthusiastic, industrious and polite. Men, on the other hand, are comparatively considered assertive, orderly, but also consistent. The latter differs from the results in the healthcare sector. This can be explained by the fact that in this male-dominated industry, a lot of monetary responsibility lies in the hands of employees and controlled, non-volatile behavior and appearance is crucial for trust in the employee by external parties.

The divergent results for Consistency in the two sectors show that an analysis that is not aggregated across all firms is important for understanding the role of gender in the German labor market: Overall, in the health care sector, a dominance of women over men is found in only three out of ten aspects, whereas in the financial sector it is found for five of the ten aspects. This (private) sector shows greater efforts to reduce gender inequality and to achieve equalization over time, for example also visible through the reduction the gender pay gap: While the gap in the financial sector was still just over 30% in 2010, a reduction of six percentage points to 24.2% was recorded in 2018, while in the health sector it fell by only 0.62 percentage points from 24.6% to 23.98% (Eurostat LFS, 2010 & 2018). Accordingly, Bergmann et al.'s (2018) hypothesis regarding structural differences in different sectors fostering imbalances can be confirmed.

6.1.2 Regions

The German labor market is characterized with regional heterogeneities, partly caused by the former separation into East and West. This is also noted in Dudel et al. (2021): Eastern¹⁵ German women are more likely to work full time, are less likely to work part time or to be a housewife. Motherhood therefore has comparatively a greater negative effect on employment in the former Western states. Our data confirms these findings for the most part: We find a marginally higher women's quota in the Eastern states (29.4% vs 28.27% in the West). The state with the highest women's quota, Mecklenburg-Western Pomerania (1493 firms), is located in the East, while the two states Bremen (910) and Saarland (1038), each with the lowest rate, are in the West. When comparing the choice of words between Eastern and Western firms, no significant differences could be found.

In Mecklenburg-Western Pomerania, the state with the highest women's quota, terms relating to Intellect, Assertiveness and Openness are mainly used for men, while women are described as having enthusiastic, industrious and robust characteristics. In Saarland, men are named as industrious, assertive, and open-minded, while women are robust, consistent, and intellectual. The last result is unusual, since this characteristic could previously always be assigned to men. However, when comparing the choice of words between these two states, no significant differences could be found.

6.1.3 Firm size

Finally, we examine the dimension of company size. Overall, companies are classified into four groups depending on the number of employees. The gender distribution is very similar across all company groups. The comparatively highest proportion of women is realized in the group of the largest companies (>250 employees) with 38%, followed by the second largest group (36.6%, 50-250 employees), the smallest companies (35.7%; 1-10 employees) and finally the group with 11-49 employees, 34.3%. Accordingly, the differences in the women's quotas are so small that it can be assumed that company size does not play a role.

As already stated in section 3, it is to be assumed that the quality and choice of words differs depending on firm size. We checked for possible differences in the probability of (normalized) occurrences of terms for small firms (1-10 employees) and large firms (>250 employees) using a two-sample z-test.

¹⁵ The federal states from the former GDR are East Berlin, Brandenburg, Mecklenburg-Western Pomerania, Saxony, Saxony-Anhalt, Thuringia.

and conclude that there are no significant differences in the probability of occurrence of a term between small and large firms. Firm size therefore does not play a role regarding quality and choice of words.

6.2 Validation

Section two presented Abele and Wojciszke's (2007) model for describing persons, according to which individuals can be classified as being agentic or communal. Uchronski (2010) collects a total of 69 characteristic words that are suitable for both fundamental dimensions in terms of their representativity. 33 words form the respective dictionaries, yet three terms are not suitable for validating our framework due to their negative connotation.

To check the validity of our estimation, we examined which of the two genders dominates in our sample for each term and compared this to Uchronski's (2010) lists.

Agentic traits are mainly assigned to men in the literature; in our sample we could find a total of ten matches to the 33 trait terms defined by Uchronski (2010). In six cases we find a male dominance, three of them significant; in the remaining four cases women score higher, two times significant. On aspect level, two words each come from the aspects Robustness, Orderliness, Industriousness and Assertiveness and one word each from Intellect and Enthusiasm. If we exclude the rather ambiguous findings for Industriousness, all results besides Enthusiasm are consistent with our previous results and a male dominance (see Table 2).

Communal traits are found primarily among women, with an overlap in twelve of 33 cases. Nine times women scored higher (six of them significantly), the remaining three times men, with one significant case. Four words are found in each of the aspects Compassion and Enthusiasm, two in Politeness, and one each in Consistency and Orderliness. With the exception of the last two aspects, these all represent cases where the literature and our results are able to identify female dominance.

7 Conclusion

We presented a framework to conduct fully automated and highly granular measurements of gender stereotypes based on external perception via publicly available big data. We then applied this framework to the landscape of German companies in a pilot study for the domestic labor market.

The high innovative potential lies in the application of the website data in combination with official firm data and the application of our algorithm. With the presented framework it is possible to analyse and quantify external gender perception in an established psychological framework (FFM) and the corresponding sub dimensions.

The dimension of gender and the associated inequality in the labor market has already been studied on different quantitative and qualitative levels (see, section 2), but not yet in a framework as ours. The whole spectrum of companies can be included, which makes general and all-encompassing statements possible and also enables a comparison between all sectors and regions. We focus exclusively on external perceptions and representations by others, which allows us to uncover possible gender stereotyping.

Our study offers concrete evidence that firms still display gender stereotypical patterns today. With the help of our results, targeted measures can be implemented to reduce vertical gender segregation through language, i.e. through advice and tips on gender-neutral terms. As already described in section 5, distortions due to grammatically masculine role nouns might discriminate against women in terms of pay or promotion (Misersky et al., 2019).

In conclusion, a more in-depth sociocultural and linguistic analysis might necessary in order to identify all relevant facets of a working society. Our analysis here is intended to serve as a cornerstone for further research in this area.

It must also be considered that there may be a self-selection bias, that women are more likely to select occupations in sectors such as education and men are more likely to select occupations such as engineering that require certain character traits, and that the differences are caused by specific jobs and not by gender.

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Appendix

Table A1: Term lists of the ten aspects

Aspect	Terms	Terms (english translation) ¹⁶
Openness	inspirierend, inspiriert, stürmisch, glühend, brennend, Inspiration, Stürmigkeit, künstlerisch, kreativ, kunstvoll, schön, idealistisch, Kreativität, Schönheit, Idealismus, dichterisch, lyrisch, anregend, Lyrik, Anregung, musikalisch, musisch,	inspiring, inspired, impetuous, ardent, burning, inspiration, impetuosity, artistic, creative, artful, beautiful, idealistic, creativity, beauty, idealism, poetic, lyrical, inspiring, lyricism, stimulation, musical, melodic, musicality, creative, fertile,

¹⁶ We made the translations to the best of our knowledge. Though, it may happen that the English translation of the individual terms does not always completely correspond to the German meaning.

	<p>melodisch, Musikalität, schöpferisch, fruchtbar, harmonisch, gefühlsbetont, gefühlvoll, eingebungsvoll, sentimental, Fruchtbarkeit, Harmonie, Gefühlsbetonung, Sentimentalität, geistsprühend, gestalterisch, poetisch, belletristisch, Belletristik, gedankenverloren, versunken, zerstreut, gedankenreich, tiefgründig, Gedankenreichtum, Tiefgründigkeit, abstrakt, vertieft, träumerisch, fantasievoll, Vertiefung, Fantasie, empfindsam, ästhetisch, intuitiv, originell, unkonventionell, rührig, Empfindsamkeit, Ästhetik, Intuition, Originalität, Unkonventionalität</p>	<p>harmonious, emotive, sentimental, fertility, harmony, sentimentality, sentimentality, spirited, creative, poetic, belletristic, fiction, thoughtful, absorbed, scattered, thoughtfulness, profound, thoughtfulness, profoundness, abstract, deep, dreamy, fanciful, deepening, imagination, sentimental, aesthetic, intuitive, original, unconventional, touching, sensibility, aesthetic, intuition, originality, unconventionality</p>
Intellect	<p>scharfsinnig, aufgeweckt, begnadet, smart, weise, Scharfsinnigkeit, Aufgewecktheit, Weisheit, lernbereit, kompetent, wissend, geistig, gebildet, intellektuell, reflektierend, renommiert, reflektiert, begabt, hochbegabt, akademisch, kundig, Lernbereitschaft, Kompetenz, Wissen, Geistigkeit, Intellekt, Renommee, Begabung, klug, weitblickend, erfinderisch, analytisch, intelligent, sachlich, kognitiv, fundiert, pfiffig, erfindungsreich, Klugheit, Weitblick, Intelligenz, Sachlichkeit, Kognition, Fundiertheit, Pfiffigkeit, Erfindungsreichtum, kultiviert, gewandt, fundiert, gelehrt, Kultiviertheit, Fundierung, fortschrittlich, überdacht, Fortschrittlichkeit, Überdachtheit, verstandesgemäß, durchdacht, aufgeklärt, nüchtern, Aufgeklärtheit, Nüchternheit, geistig, umsichtig, ideell, idealistisch, Geistigkeit, Umsichtigkeit, Idealismus, spirituell, moralistisch, politisch, ideologisch, Spiritualität, Moral, Ideologie, kenntnisreich, Kenntnisreichtum</p>	<p>astute, alert, gifted, smart, wise, astuteness, alertness, wisdom, willing to learn, competent, knowledgeable, spiritual, educated, intellectual, reflective, renowned, reflected, gifted, highly gifted, academic, knowledgeable, Learning, Competent, Knowledgeable, Spiritual, Intellect, Reputation, Gifted, Clever, Far-Sighted, Inventive, Analytical, Intelligent, Factual, Cognitive, Sound, Smart, Inventive, Cleverness, Far-Sightedness, Intelligence, Factual, cognition, soundness, shrewdness, inventiveness, cultured, adroit, sound, erudite, sophistication, founding, progressive, thoughtful, progressiveness, thoughtfulness, rational, thoughtful, enlightened, sober, enlightenedness, sobriety, spiritual, prudent, idealistic, spirituality, prudence, idealism, spiritual, moralistic, political, ideological, spirituality, morality, ideology, knowledgeable, knowledgeable-richness</p>
Orderliness	<p>aufmerksam, wachsam, Aufmerksamkeit, Wachsamkeit, tolerant, aufgeklärt, Toleranz, Aufgeklärtheit, routiniert, geübt, Routine, ordnungsliebend, ordnungsgemäß, ordentlich, geordnet, Ordnungsliebe, Ordnungsmäßigkeit, Ordentlichkeit, organisiert, sauber,</p>	<p>attentive, alert, attentiveness, vigilance, tolerant, enlightened, tolerance, enlightenment, routine, practiced, routine, orderly, orderly, orderly, orderliness, neatness, organized, clean, mindful, organizational, neatness, attentive, regulated, structured, systematic,</p>

	achtsam, Organisationstalent, Sauberkeit, Achtsamkeit, geregelt, strukturiert, systematisch, Struktur, sorgfältig, präzise, penibel, solide, Sorgfältigkeit, Präzision, akribisch, akkurat, geradlinig, konsequent, Akribie, Geradlinigkeit, Konsequenz, gewissenhaft, gründlich, genau, Gewissenhaftigkeit, Gründlichkeit, Genauigkeit	structure, careful, precise, meticulous, solid, diligence, precision, meticulous, accurate, straightforward, consistent, meticulousness, straightforwardness, consistency, conscientious, thorough, exact, conscientiousness, thoroughness, accuracy
Industriousness	ambitioniert, Ambition, Diszipliniert, fleißig, eifrig, tüchtig, emsig, Disziplin, Fleiß, Eifer, Tüchtigkeit, Emsigkeit, aktiv, agierend, leistungsbereit, professionell, fähig, sachkundig, qualifiziert, Leistungsbereitschaft, Professionalität, Fähigkeit, Sachkundigkeit, Qualifikation, flott, zügig, geschwind, flink, Schnelligkeit, pflichtbewusst, verlässlich, Pflichtbewusstsein, Verlässlichkeit, ordnungsgemäß, Ordnung, konzentriert, zielstrebig, zielsicher, Konzentriertheit, Konzentration, Zielstrebigkeit, Zielsicherheit, fokussiert, Fokussiertheit, Fokus	ambitious, ambition, disciplined, diligent, eager, diligent, discipline, diligence, zeal, proficiency, industriousness, active, acting, performing, professional, capable, proficient, qualified, performance, professionalism, ability, proficiency, qualification, brisk, briskness, briskness, briskness, speed, dutiful, reliable, dutifulness, reliability, orderly, orderly, focused, purposeful, purposefulness, focusedness, concentration, purposefulness, purposefulness, focused, focusedness, focus
Assertiveness	verantwortungsbewusst, verantwortungsvoll, verfassungsmäßig, pflichtbewusst, pflichtgetreu, verantwortungsfreudig, Verantwortungsbewusstsein, Pflichtbewusstsein, Pflichttreue, stark, belastbar, fit, kernig, tapfer, heroisch, mutig, autoritär, markig, imposant, imponierend, tonangebend, Stärke, Belastbarkeit, Kernigkeit, Tapferkeit, Mut, Autorität, energiereich, schlagfertig, Schlagfertigkeit, Energiereichtum, entschlossen, draufgängerisch, bestimmend, Draufgänger, Bestimmtheit, einflussreich, durchsetzungsfähig, unnachgiebig, durchsetzungsstark, dickköpfig, hartnäckig, standhaft, kämpferisch, beharrlich, willensstark, Einflussreichtum, Durchsetzungsfähigkeit, Unnachgiebigkeit, Durchsetzungsstärke, Dickköpfigkeit, Hartnäckigkeit, Standhaftigkeit, Beharrlichkeit, Willensstärke, proaktiv, aktiv, tatkräftig, handelnd, tollkühn,	responsible, responsible, constitutional, dutiful, dutiful, responsible, sense of responsibility, sense of duty, dutifulness, strong, resilient, fit, pithy, brave, heroic, courageous, authoritative, pithy, imposing, imposing, setting the tone, strength, resilience, grit, bravery, courage, authority, energetic, quick-witted, quick-wittedness, wealth of energy, determined, go-getter, decisive, go-getter, decisive, influential, assertive, intransigent, assertive, bull-headed, persistent, steadfast, pugnacious, persistent, strong-willed, influential, assertiveness, intransigence, assertiveness, bull-headedness, stubbornness, steadfastness, perseverance, willfulness, proactive, active, energetic, acting, foolhardy, vigor, foolhardiness, offensive, direct, immediacy, powerful, dominant, domination, brash, impetuous, immodest, penetrating, directness, immodesty, penetrance

	Tatkräftigkeit, Tollkühnheit, offensiv, unmittelbar, Unmittelbarkeit, mächtig, dominant, dominierend, Dominanz, forsch, ungestüm, unbescheiden, penetrant, Direktheit, Unbescheidenheit, Penetranz	
Enthusiasm	einladend, integrierend, sympathisch, nett, Sympathie, Nettigkeit, kontaktfreudig, sozial, umgänglich, ungezwungen, offen, kommunikationsfähig, empfänglich, kommunikationsstark, Kontaktfreudigkeit, Umgänglichkeit, Ungezwungenheit, Offenheit, Kommunikationsfähigkeit, Empfänglichkeit, Kommunikationsstärke, gefühlvoll, gefühlsbetont, rührselig, beflügelt, ausdrucksstark, Rührseligkeit, Ausdrucksstärke, aufgedreht, erregt, glühend, lebhaft, lebendig, dynamisch, strahlend, energiegeladen, energievoll, beliebt, Aufgedrehtheit, Erregtheit, Lebhaftigkeit, Lebendigkeit, Dynamik, Energiegeladenheit, Beliebtheit, lustig, munter, Lustigkeit, Munterkeit, umgänglich, kontaktfreudig, aufgeschlossen, Umgänglichkeit, Kontaktfreudigkeit, Aufgeschlossenheit, zudringlich, nahbar, zugänglich, freundschaftlich, herzlich, gesellig, teamfähig, Zudringlichkeit, Nahbarkeit, Zugänglichkeit, Freundschaftlichkeit, Herzlichkeit, Geselligkeit, Teamfähigkeit, extrovertiert, aufgeschlossen, gesprächig, mitteilsam, aufrichtig, offenherzig, selbstsicher, kommunikativ, unverschlossen, redsam, Extrovertiertheit, Aufgeschlossenheit, Gesprächigkeit, Mitteilsamkeit, Aufrichtigkeit, Offenherzigkeit, Selbstsicherheit, Unverschlossenheit, Redsamkeit, enthusiastisch, leidenschaftlich, begeistert, engagiert, motiviert, passioniert, begeisterungsfähig, euphorisch, ekstatisch, beschwingt, mitreißend, mitgerissen, überschwänglich, hingebungsvoll, anregend, angeregt, hinreißend, sinnenfreudig, unternehmungslustig,	nviting, integrating, sympathetic, nice, sympathy, niceness, sociable, sociable, informal, open, communicative, receptive, communicative strength, sociability, sociability, informality, openness, communicativeness, receptivity, communicative strength, soulful, emotional, sentimental, impulsive, expressive, emotionality, expressiveness, upbeat, agitated, ardent, vivacious, lively, dynamic, bright, energy, energetic, popular, upbeat, agitation, vivacity, liveliness, dynamism, energy-charged, popularity, merry, cheerful, levity, sociable, outgoing, sociability, communicativeness, open-mindedness, pushy, approachable, accessible, amicable, cordial, sociable, team player, pushiness, approachability, accessibility, amicability, cordiality, sociability, team-spirited, extroverted, outgoing, talkative, communicative, sincere, open-hearted, self-confident, communicative, uncloseted, talkative, extroversion, open-mindedness, talkativeness, communicativeness, sincerity, open-heartedness, self-confidence, unclosetedness, talkativeness, enthusiastic, passionate, enthusiastic, committed, motivated, passionate, enthusiastic, euphoric, ecstatic, elated, rousing, carried away, exuberant, devoted, stimulating, excited, ravishing, sensual, enterprising, enthusiasm, passionate, enthusiasm, commitment, motivation, passion, enthusiastic, euphoria, ecstasy, exhilaration, exuberance, devotion, excitement, sensuality, enterprise, spirited, enthusiastic, engaging, captivating, charismatic, appealing, temperament, enthusiasm, ingestion, charisma

	<p>Enthusiasmus, Leidenschaftlichkeit, Begeisterung, Engagement, Motivation, Passion, Begeisterungsfähigkeit, Euphorie, Ekstase, Beschwingtheit, Überschwänglichkeit, Hingabe, Anregung, Sinnenfreudigkeit, Unternehmungslust, temperamentvoll, begeisternd, einnehmend, fesselnd, charismatisch, ansprechend, Temperament, Begeisterung, Einnahme, Charisma</p>	
Compassion	<p>empathisch, emotional, gefühlvoll, mitfühlend, zart, empfindsam, einfühlsam, sensibel, vermittelnd, Empathie, Emotionalität, Mitgefühl, Zärtlichkeit, Empfindsamkeit, Einfühlsamkeit, Sensibilität, besorgt, sorgsam, warm, behutsam, feinfühlig, sensitiv, vertrauensvoll, einführend, liebevoll, partnerschaftlich, zartfühlend, Behutsamkeit, Feinfühligkeit, Sensitivität, Partnerschaftlichkeit, empfindend, feinfühlig, feinführend, teilnehmend, menschlich, Teilnahme, Menschlichkeit, hilfsbereit, solidarisch, altruistisch, aufbauend, barmherzig, nobel, gefällig, Hilfsbereitschaft, Solidarität, Barmherzigkeit, Noblesse, Gefälligkeit, rücksichtsvoll, verständnisvoll, Rücksichtnahme, Verständnis, großherzig, Großherzigkeit, altruistisch, fürsorglich, Altruismus, Fürsorge, gefühlvoll</p>	<p>empathic, emotional, feeling, compassionate, tender, sensitive, sensitive, mediating, empathy, emotionality, compassion, tenderness, sensibility, empathy, sensitivity, concerned, caring, warm, cautious, sensitive, sensitive, trusting, empathetic, loving, partnership, tender-hearted, cautiousness, delicacy, sensitivity, partnership, feeling, delicate, sensitive, participating, humane, participation, humanity, helpful, solidarity, altruistic, constructive, merciful, noble, pleasing, helpfulness, solidarity, mercy, noblesse, complaisance, considerate, understanding, thoughtful, understanding, generous, big-hearted, altruistic, caring, altruism, caring, soulful</p>
Politeness	<p>zuvorkommend, unterwürfig, gehorsam, folgsam, artig, akzeptierend, ergeben, sittsam, gesittet, respektabel, Unterwürfigkeit, Gehorsamkeit, Folgsamkeit, Artigkeit, Akzeptanz, Ergebung, Sittsamkeit, Respekt, diplomatisch, verschwiegen, defensiv, geheimnisvoll, abwartend, unnahbar, bedächtig, scheu, schüchtern, still, introvertiert, demütig, gehemmt, unauffällig, maßvoll, ehrerbietig, manierlich, Diplomatie, Verschwiegenheit, Unnahbarkeit, Bedächtigkeit, Schüchternheit, Introvertiertheit, Demut, Unauffälligkeit, nachgiebig, devot, fügsam, gesittet, gehorsam, entgegenkommend, ergeben,</p>	<p>courteous, submissive, obedient, docile, kind, accepting, devoted, demure, demure, respectable, submissiveness, obedience, docility, kindness, acceptance, surrender, modesty, respect, diplomatic, discreet, defensive, secretive, wait-and-see, aloof, deliberate, shy, quiet, introverted, humble, inhibited, unobtrusive, moderate, reverent, mannerly, diplomacy, secrecy, aloofness, deliberateness, shyness, introversion, humility, inconspicuousness, yielding, submissive, docile, demure, obedient, accommodating, devoted, willing, unobtrusive, discreet, yielding, docility, obedience, surrender,</p>

	<p>bereitwillig, unaufdringlich, dezent, Nachgiebigkeit, Fügsamkeit, Gehorsamkeit, Ergebenheit, Bereitwilligkeit, ermunternd, motivierend, anfeuernd, anregend, anspornend, bestärkend, animierend, ermutigend, Motivation, Anregung, Ermunterung, Ansporn, Bestärkung, Animierung, Ermutigung, achtungsvoll, freundlich, hochachtungsvoll, höflich, rücksichtsvoll, wohlherzogen, charmant, gutartig, nett, umgänglich, warmherzig, wohlwollend, taktvoll, anständig, Freundlichkeit, Höflichkeit, Wohlerzogenheit, Gutartigkeit, Nettigkeit, Umgänglichkeit, Warmherzigkeit, Wohlwollen, Anständigkeit, bodenständig, selbstkritisch, uneingebildet, bescheiden, willfähig, galant, wohlherzogen, Bodenständigkeit, Selbstkritik, Bescheidenheit, begünstigen, kompensieren, helfen, zuvorkommend, konfliktscheu, respektvoll, friedvoll, friedfertig, ruhig, gewaltfrei, einträchtig, pazifistisch, unaggressiv, ausgeglichen, harmoniebedürftig, friedlich, friedliebend, Friedfertigkeit, Ruhe, Gewaltfreiheit, Einträchtigkeit, Pazifismus, Ausgeglichenheit, Harmoniebedürftigkeit, Friedliebigkeit, uneigennützig, altruistisch, solidarisch, fürsorglich, uneigennützig, aufopferungsvoll, wohltätig, uneigensinnig, karitativ, gemeinnützig, aufopfernd, freigiebig, edel, ehrbar, Uneigennützigkeit, Altruismus, Solidarität, Fürsorglichkeit, Uneigennutz, Wohltat, Freigiebigkeit, Ehrbarkeit</p>	<p>willingness, encouraging, motivating, cheering, stimulating, inciting, encouraging, animating, encouraging, motivation, stimulation, encouragement, incitement, animation, encouragement, respectful, friendly, respectful, courteous, considerate, well-mannered, charming, benign, kind, affable, warm, benevolent, tactful, decent, friendliness, courtesy, well-mannered, benign, niceness, affability, warm-heartedness, benevolence, decency, down-to-earth, self-critical, unconceited, modest, willing, gallant, well-mannered, down-to-earth, self-critical, humble, favoring, compensating, helping, courteous, conflict averse, respectful, peaceful, peaceable, calm, non-violent, amicable, pacifist, unaggressive, balanced, harmony-seeking, peaceful, peace-loving, peacefulness, tranquility, non-violence, harmony, pacifism, balanced, harmony-seeking, peace-loving, unselfish, altruistic, solidarity, caring, unselfish, self-sacrificing, charitable, altruistic, charitable, charitable, self-sacrificing, bountiful, noble, honorable, unselfishness, altruism, solidarity, caring, unselfishness, beneficence, bounty, honorability</p>
Volatility	<p>gelassen, sanftmutig, Gelassenheit, Sanftmut, bedächtig, gefasst, Bedacht, Gefasstheit, beständig, unproblematisch, Beständigkeit, ausgeglichen, Ausgeglichenheit, beherrscht, beruhigend, ruhig, Beherrschtheit, Beherrschung, Ruhe, entspannt, gechillt, friedvoll, konfliktfähig, korrekt, Konfliktfähigkeit, Korrektheit, kontrolliert, bedacht, besonnen, Besonnenheit</p>	<p>calm, gentle, serenity, gentleness, thoughtful, composed, composure, steady, unproblematic, steadfast, balanced, equilibrium, controlled, sedate, calm, restraint, composure, relaxed, chilled, peaceful, conflict, capable, correct, conflict ability, correctness, controlled, considered, prudent, level-headedness</p>

Withdrawal	<p>zuversichtlich, robust, unbeschwert, Zuversichtlichkeit, Unbeschwertheit, Robustheit, zugänglich, angstfrei, kühn, unerschrocken, zutraulich, Zugänglichkeit, Kühnheit, Kuehnheit, Zutraulichkeit, lebensfroh, sorglos, unbesorgt, unbekümmert, unbekuemmert, zwanglos, sorgenfrei, vorurteilsfrei, Sorglosigkeit, Unbekümmtheit, Unbekümmtheit, ermutigend, couragiert, Courage, Ausgeglichen, unverkrampft, belastbar, Belastbarkeit, unängstlich, furchtlos, selbstsicher, wagemutig, heroisch, unbesorgt, gefestigt, unbeschwert, selbstbewusst, Furchtlosigkeit, Selbstsicherheit, Selbstbewusstsein, Wagemut, Wagemutigkeit, freudig, positiv, heiter, lebensbejahend, lebenslustig, vital, Heiterkeit, Lebenslust, Vitalität, glücklich, erfüllt, erfuellt, wohlbehaglich, Erfüllung, Wohlbehaglichkeit, Glück, optimistisch, fröhlich, Optimismus, Fröhlichkeit, enthemmt, freimütig, Freiheit, Enthemmtheit, Freimütigkeit</p>	<p>confident, robust, light-hearted, confidentness, light-heartedness, robustness, accessible, fearless, bold, undaunted, trusting, accessibility, boldness, boldness, trustfulness, cheerful, carefree, unconcerned, unconcerned, unworried, unconstrained, carefree, unprejudiced, carefree, unconcernedness, unconcernedness, encouraging, courageous, courageousness, balanced, unconstrained, resilient, resilience, unafraid, fearless, confident, daring, heroic, unconcerned, steady, light-hearted, self-assured, fearlessness, self-assurance, self-confidence, daring, daringness, joyful, positive, cheerful, life-affirming, fun-loving, vital, cheerfulness, lust for life, vitality, happy, fulfilled, fulfilledness, well-being, happiness, optimistic, cheerfulness, optimism, jollity, disinhibited, liberty, freedom, disinhibition, libertinage</p>
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