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IMPACT OF GENDER ON PERCEIVED WORK CLIMATE IN BUSINESS INFORMATION SYSTEMS

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ABSTRACT

Aim/Purpose	The low proportion of women currently working in the field of business information systems presents an opportunity to attract more women to this field. For example, in Germany, the proportion of women studying business information systems is currently 21%, compared to 48% in business administration (Statistisches Bundesamt, 2020). Which characteristics make the professional field of business information systems appear attractive to women and men – and which characteristics do not?
Background	Studies on careers in business information systems are important to mitigate the long-lasting shortage of IT specialists, yet research is limited in this area.
Methodology	To capture empirical data, graduates of the Business Information Systems program at the University of Applied Sciences in Hannover were surveyed.
Contribution	The results show that women and men perceive the work climate and working conditions very differently and are also satisfied to a different extent. Characteristics of the work climate place significantly more restrictions on satisfaction for women than for men. Women primarily criticize characteristics that can be described as involving “a lack of fairness”.
Findings	The differences in perceived work climate may negatively impact the proportion of women in business information systems. A number of measures have already been established to support women in coping better with the prevailing climate. However, some measures bear the risk that women are thus accused of assimilating to the prevailing climate. This can seem presumptuous since the dominant male culture is taken for granted and “set”. Measures for team-building and personnel development appear to be more suitable if these address the actual values and norms of teamwork, question them where necessary, and change them for everyone.
Recommendations for Practitioners	Women’s career goals are clearly different from men’s goals, and women do not achieve goals with high priority very well. Work climate is perceived more critically by women than by men: less fair, less supportive. Advantages of diversity

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and plurality are put at risk if women should put aside their different “other” perceptions of cooperation and negotiation in order to act according to the rules of the male-dominated system.

Impact on Society Studies on careers in business information systems are important to mitigate the longer-lasting shortage of IT specialists. The low proportion of women currently working in IT presents an opportunity to attract more women to business information systems.

Keywords job satisfaction, career goals, work climate, gender, fairness

INTRODUCTION

The lasting shortage of IT specialists (CEDEFOP, 2016) requires that the careers of experts in business information systems be studied further. Based on the knowledge and understanding of work-life, working conditions could be made more appealing in order to attract a larger number of people in the workforce to the professional field of business information systems.

The low proportion of women currently working in the field of business information systems presents an opportunity to attract more women to this field, as the proportion of women studying business information systems is currently 21%, compared to 48% in business administration, for example (Statistisches Bundesamt, 2020). This raises the question: Which characteristics make the professional field of business information systems appear attractive – and which characteristics do not? Do these characteristics have the same effect on women as on men? The study at the University of Applied Sciences Hannover focuses on the characteristics of the occupational field, the occupational conditions, and the occupational climate, while other studies examine, for example, typical characteristics of employers such as “organizational climate” (Oehlhorn et al., 2019).

For IT professions, the low proportion of women also involves the risk that the capabilities and skills of women are not sufficiently leveraged and that not adequate advantage is taken of the benefits derived from diversity and variety (Cerf & Johnson, 2016; Fatourou et al., 2019; LeRouge et al., 2013). In addition, it can be considered an injustice that interesting and attractive professions in the IT industry are not open to everyone on an equal basis due to social and cultural barriers (Barton et al., 2015; Cerf & Johnson, 2016). Consequently, there are both economic and ethical reasons for creating or ensuring gender equality and diversity in the workplace (Barton et al., 2015; Oehlhorn et al., 2017).

In addition, it must also be considered that younger people’s expectations and demands on their working lives are probably different today than the expectations were in the past. Despite a high level of motivation, such characteristics as work-life balance and the compatibility of career and family play a greater role than these characteristics once did (Schuth et al., 2018; Urbach & Ahlemann, 2016).

Consequently, the study aims to collect and evaluate the impressions and experiences younger business information systems graduates have of their work lives. They are asked if limitations on job satisfaction make it possible to see room for improvement and to contribute to providing relief for the shortage of IT specialists. So, for example: Do women perceive working conditions and their work climate “differently”? Are they less satisfied? The aim is to gain a better understanding of business information systems professionals in their first years on the job. During these early years of professional life, many formative impressions and experiences are absorbed and special attention is paid to working conditions and the work environment.

DESIGN AND METHODOLOGY

To capture insights into the “professional reality” of business information specialists, graduates of the Business Information Systems program at the University of Applied Sciences Hannover were surveyed in a structured manner. At the same time, graduates of the Business Administration program were also surveyed in order to create opportunities for comparison and, if necessary, to identify typical characteristics of jobs in the field of business information systems and their effects on employees (Disterer, 2020).

At the University of Applied Sciences Hannover, a total of 1,881 students successfully completed a corresponding Bachelor’s degree program between 2009 and (August) 2019, of whom 629 graduated with a degree in Business Information Systems and 1,250 with a degree in Business Administration. Of these, an e-mail address was available or could be determined for 1,555 graduates. These graduates were contacted and invited to participate in the survey. The responses were collected anonymously via an electronic platform on the web and in compliance with data protection restrictions. From April to May 2020, a total of 424 valid questionnaires were received; the response rate of 27% achieved can be considered as good. Thus, 184 graduates (21% women) of business information systems and 240 graduates of business administration (51% women) answered the questionnaire and provided information about their impressions and experiences during the first 10 years after graduation. No distortions were discernible in comparison to the basic population according to the year of graduation, age, gender, or years of work experience. Graduates of business information systems were (slightly) overrepresented in the total of 424 questionnaires that could be evaluated, but this is not critical when making comparisons between the subcohorts. While pretesting the questionnaire we got evidence that all measures are reasonable and suitable.

In the following, we focus on graduates of business information systems; graduates of business administration were used for comparison.

DATA ANALYSIS AND RESULTS

CAREER GOALS

An important starting point for recording the satisfaction of professionals in business information systems is what goals are pursued with the professional activity. These reflect the goals individuals strive for in their professional life. The question – “What are your goals in your professional life?” – provided 17 subgoals to choose from (Fabian et al. 2016; Gärtig-Daugs et al. 2014; Pietrzyk & Graser, 2017), the importance of each was to be evaluated with 5-point scales verbally anchored with “1 very unimportant” to “5 very important”. From the selection of 17 subgoals, the following seven were considered by business information systems graduates to be among the least important 10 subgoals of their careers

- earning high salary
- having good opportunities for advancement and development
- having opportunities to take management/leadership roles
- having opportunities for professional training
- being able to cope with the workload
- being able to develop and implement own ideas
- having a lot to do with people

It can already be seen that business information systems specialists do not necessarily strive to climb the career ladder in their profession (Gärtig-Daugs et al., 2014; Schuth et al., 2018; Urbach & Ahlemann, 2016).

The most important career goals of the respondents are analyzed below. Figure 1 lists the ten most important career goals of the men surveyed on the left-hand side, in the order of the job values as they result from the average values of the men’s statements. Consequently, the order of the men’s goals also reflects the prevailing values of an occupational field that has been dominated by men for many years (Förtsch et al., 2018; Kirton & Robertson, 2018).

The ten most important career goals for women are listed on the right-hand side of Figure 1, in the order of importance as determined by the average values of the women’s statements. The ten most important career goals of women are identical to those of men, but the order is significantly different. A comparison of the rankings by importance shows that five of the women’s goals are ranked 2 to 6, while the men’s goals are only ranked 5 to 10.

Career goals of men	Ranking and importance for men	Differences in ranks	Ranking and importance for women	Career goals of women
experiencing respectful interaction	1 (4.6)		1 (4.7)	experiencing respectful interaction
carry out interesting tasks	2 (4.6)		2 (4.6)*	having opportunities to work independently
having flexible hours	3 (4.5)		3 (4.6)*	getting recognition/appreciation at work
experiencing good work/family balance	4 (4.5)		4 (4.6)*	having a safe job
experience trustful collaboration	5 (4.4)		5 (4.6)*	experiencing fair evaluations/assessments
having opportunities to work independently	6 (4.4)		6 (4.6)*	not experiencing unfair treatment/discrimination
getting recognition/appreciation at work	7 (4.3)		7 (4.5)	experiencing good work/family balance
experiencing fair evaluations/assessments	8 (4.3)		8 (4.5)	experience trustful collaboration
having a safe job	9 (4.2)		9 (4.4)	carry out interesting tasks
not experiencing unfair treatment/discrimination	10 (4.2)		10 (4.4)	having flexible hours

n=184, 5-point scale, „1 very unimportant goal“ to „5 very important goal“; * average values differ significantly between men and women (p < 0.01)

Figure 1. Career goals of men and women (by importance, descending)

The average values of the ratings of these five goals differ significantly between women and men (p < 0.01). Thus, the catalog of the ten most important goals in professional life is identical for men and women working in business information systems, but the ranking by importance differs significantly.

A factor analysis of the information on the importance of career goals shows that four factors provide a meaningful explanation, namely “future prospects”, “work contents”, “working conditions”, and “work climate” (Fabian et al., 2016). The five goals to which women assign a much higher importance than men (see Figure 1) can be attributed to these factors:

Work contents: “having opportunities to work independently”

Working conditions: “having a safe job”

Work climate: “getting recognition/appreciation at work”, “experiencing fair evaluations/assessments” and “not experiencing unfair treatment/discrimination”

According to the study, these three factors play a decisive role in the differences between career goals of women and men, and the characteristics of the work climate, in particular, have a substantially higher importance for women than for men.

In the case of business administration graduates, there are smaller differences between the career goals of men and women. As in business information systems, the goals of “recognition and appreciation in the profession”, “fair evaluations/assessments”, and “no disadvantages/discrimination” are given greater importance by women than by men.

Two findings stand out: The career goal of “earning high salary” is not among the top 10 goals for graduates of business information systems as well as for graduates of business administration, for men as well as for women. This is in line with the results of other studies (Gärtig-Daugis et al., 2014),

including those done for other disciplines (Fabian et al., 2016). Thus, the results suggest that salary is a hygiene factor, which only causes dissatisfaction if it is not fulfilled. This may also be influenced by the quite positive economic situation in Germany in recent years, which basically offers graduates of business information systems and business administration fairly successful careers and high salaries.

Equally striking: The goal of “experiencing respectful interaction” is named as the most important career goal by all respondents from the fields of business information systems and business administration, both men and women. This shows that “respectful interaction” is of the utmost importance as a characteristic of corporate culture and work climate.

ACHIEVING CAREER GOALS

As a supplement to the results about the importance of the career goals, the extent to which these goals are currently achieved by business information systems specialists was determined. A comparison of the results for men and women is shown in Figure 2. In the upper part, the importance of the individual goals for men is compared with the current achievement of these goals, ranked according to the importance of the goals for men. In the lower part, this data is listed for women, ranked according to the importance of the goals for women.

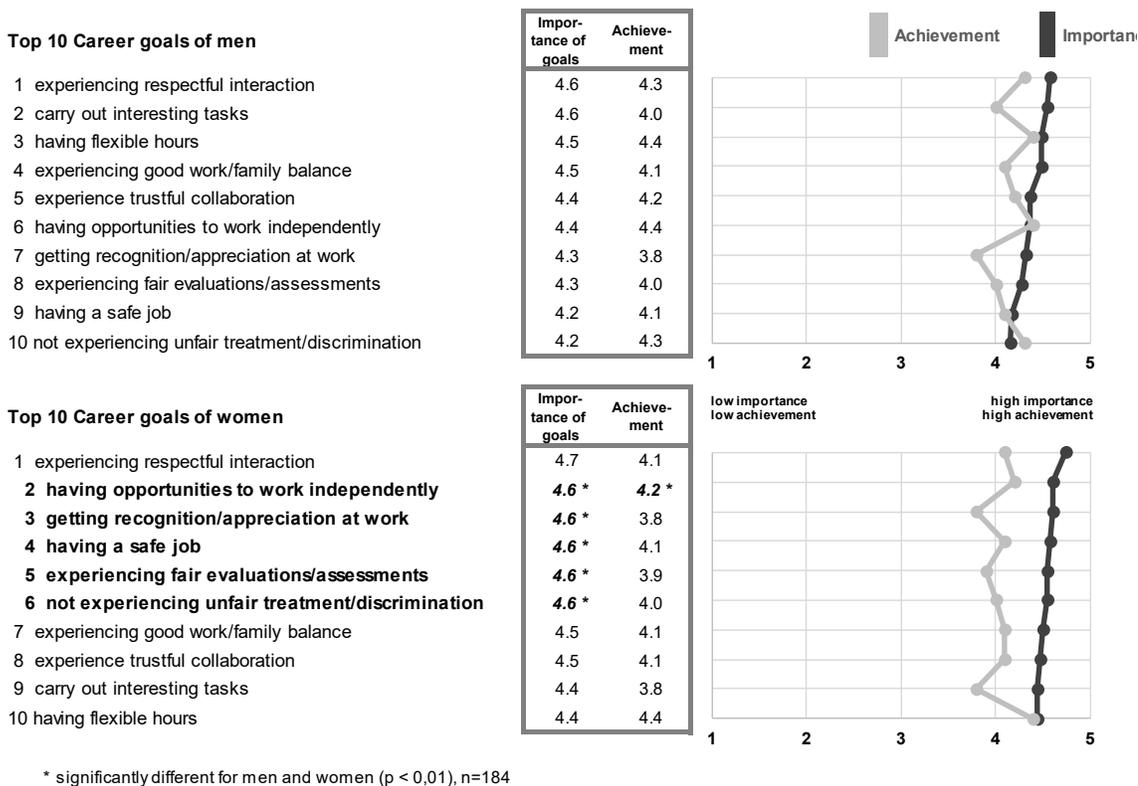


Figure 2. Importance and achievement of career goals

Obviously, there is a larger gap between the importance of the goals and their current achievement for women than for men. This can be explained by the different importance of the goals for women and men. High-ranking goals for women have relatively low goal achievement for women, while high-ranking goals for men have good goal achievement for men. Due to this constellation, a lower value is (also) to be expected for the job satisfaction of women than for men.

Unfair treatment deserves special attention. On a 5-point scale, the goal of “not experiencing unfair treatment/discrimination” has a significantly higher importance for women with an average value of

4.6 than for men with 4.2 ($p < 0.01$). The achievement of this goal is assessed by women with an average value of 4.0 and thus with a significantly lower value than that of men (4.3). That means women achieve the goal of “not experiencing unfair treatment” to a lesser degree than men do. This data is confirmed by the results of other studies (e.g., Funk & Parker, 2018).

JOB SATISFACTION

Nowadays, employees’ job satisfaction is regarded as an important criterion for ultimately measuring professional success or – from the employer’s point of view – as an important factor for evoking and promoting performance and commitment. Here, overall job satisfaction was assessed with the question “Overall, how satisfied are you with your working life?”, with answers on a verbal scale anchored with “1 very satisfied” to “5 very dissatisfied”. The survey of job satisfaction with a single question seems to be well established and well justified (Pietrzyk & Graser, 2017; Wanous et al., 1997).

For overall job satisfaction, the 5-point scale (“1 very satisfied” to “5 very dissatisfied”) yields a fairly high level of satisfaction, with an average of 1.9 for all respondents, 1.9 for men, and 2.1 for women; the differences between men and women are significant ($p < 0.01$). Or put another way: the proportion of business information systems graduates surveyed who are “dissatisfied” or “very dissatisfied” overall in their professional lives is less than 1%. The values for job satisfaction thus surveyed for graduates of business information systems and business administration at the University of Applied Sciences Hannover are significantly better than the results of other studies (Fabian et al., 2016). However, a general limitation on results regarding job satisfaction is that there is likely to be a bias in favor of positive assessments, since (very) satisfied graduates will be more willing to provide information voluntarily than those who are not so satisfied.

Overall satisfaction is well explained by the average values for the dimensions of future prospects, work content, working conditions, work climate, and unfair treatment. In the case of career goals (see above), it was already found that differences between women and men can be attributed to the dimensions of work climate and unfair treatment. Accordingly, the values for job satisfaction differ significantly between women and men with regard to these two dimensions. Work climate and the perceived unfair treatment are seen very differently by women and men; women feel significantly more restrictions on their satisfaction here than men.

In this respect, the findings on work climate and treatment are typical for the occupational field of business information systems, since this observation does not apply to the field of business administration, where there are hardly any differences between the assessments of men and women. There have long been indications that the working atmosphere in IT professions is perceived differently – more critically – by women than by men: less fair, less supportive (Gunter & Stambach, 2005). Figure 3 shows individual responses to the “restrictions of the work climate”.

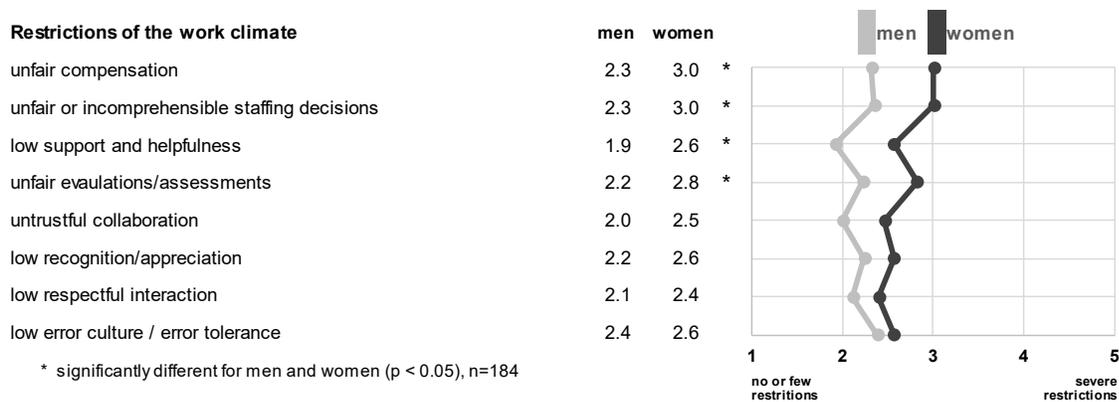


Figure 3. Perceived restrictions on the work climate

It is recognizable that women perceive quite clear restrictions and thus experience the atmosphere at work more critically. The four values leading the list in Figure 3 are all attributable to “fairness”, so this term circumscribes an important characteristic of the work climate, to which women perceive the atmosphere significantly more critically than men. This is important because perceived fairness has a significant influence on job satisfaction and commitment (Brooks et al., 2019).

DISCUSSION AND IMPLICATIONS

With the ongoing discussion about the shortage in IT, there is still a great deal of interest in detailed knowledge about the satisfaction of business information systems specialists in the first few years after graduation. The analyses of a survey of business information specialists at the University of Applied Sciences Hannover provide indications of some quite significant differences between the attitudes and perceptions of women and men. These differences may negatively impact the proportion of women in the field of business information systems. The catalog of women’s career goals is clearly different from the men’s catalog, and of all goals, those with high priority are not achieved by women particularly well. Overall, the work climate is perceived more critically by women than by men: less fair, less supportive.

A number of measures have already been established in companies to support women in coping better with the prevailing climate. For example, there are training courses that directly address the unsatisfying situation that men often assert their interests more successfully, in the distribution of work, in planning, or in asserting their space to act. Since women often find it difficult, appropriate courses are offered in which they are trained to further develop their assertiveness, negotiating skills, and reasoning power in order to better assert their own claims and demands. Measures of this kind appear to make sense in principle since they develop skills and abilities that seem important in professional life. Whether or not the existing guidebooks on self-confident appearance and tips and tricks for making a career in the male-dominated system can help is a matter for debate.

However, such measures bear the risk that women are thus accused of assimilating to the prevailing climate, i.e., that they should act and communicate “like men” in order to be heard and supported (Bronstein & Farnsworth, 1998; Gunter & Stambach, 2005). But this can seem presumptuous since the dominant male culture is taken for granted and “set”. In addition, the possible advantages of diversity and plurality are put at risk if women should set aside their different “other” perceptions of cooperation and negotiation in order to act according to the rules of the male-dominated system – thus, this system would remain untouched and unchanged. As a result, measures for team-building and personnel development appear to be more suitable if they address the actual values and norms of teamwork, question them where necessary, and change them for everyone in such a way that professional satisfaction becomes even greater for women and men.

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