

Does a Career in Information Security Appeal to Women?

An empirical analysis of job ads, supplemented by job descriptions and narratives

Frauke Fuhrmann

Department Business, Computing, Law, Technical University of Applied Sciences (TUAS) Wildau
Wildau, Brandenburg 15745, Germany
frauke.fuhrmann@th-wildau.de

Margit Scholl

Department Business, Computing, Law, Technical University of Applied Sciences (TUAS) Wildau
Wildau, Brandenburg 15745, Germany
margit.scholl@th-wildau.de

ABSTRACT

Information security is a fast-growing, forward-looking career offering women good opportunities to assert their position and shape the development of the field and the future alike. However, worldwide the proportion of women in information security is very low. Increasing the number of women would help address the anticipated labor shortage and integrate diverse perspectives and experiences. In preparation for the development of a gender-sensitive job profile in information security, we analyzed existing ads in the field with regard to gender-sensitive images and language as well as the preferences of women (and men) for certain job characteristics and skill sets. The analysis was complemented by insights derived from job descriptions and interviews with female and male experts working in information security. Although the job ads highlight important issues for women, there is still room for improvement if more women (and men) are to be attracted to the field.

Keywords: STEM, gender, computing, information security, data protection, job ad analysis

1. INTRODUCTION

Information security (IS) is a future-oriented field that is still developing and is rich with opportunity. It has now started to specialize in different areas (e.g., cryptology, awareness trainings, fraud detection, and forensics). As information security becomes more and more important in private, business, and public life, being part of this development offers broad scope for influencing the direction in which the field is moving and shaping the future. With this in mind, information security provides a career for women with considerable prospects, as no established structures and programs of action exist. Thus, women are able to step in and claim their place in this development without being confronted by male decision makers holding influential positions, as is the case in other occupational fields, where men have occupied these positions for years. However, IS is a male dominated job area—increasing diversity in the field would have the beneficial effect of including different perspectives and experiences [17].

Lack of information about the specific jobs available in IT—e.g., security specialist—and how diverse and exciting they can be [16] makes it hard for pupils in school to be aware of information security as a career path: it is not part of the school curriculum, and so typically there is no opportunity for pupils to get a sense of the kind of work involved. As almost every pupil possesses a smartphone (in Germany, 97 percent of 12- to 19-year-olds) [13] and uses the possibilities they offer to connect and chat with friends, do online searches, play games, etc., information security should be an important topic in school. However, in a standardized, anonymous survey we conducted with 194 8th-grade students, 61 percent of them indicated that information security topics are not taught in school. To raise awareness of and interest in information security as a career—especially among female pupils—we launched the project “Gender-Sensitive Study and Vocational Orientation for the Occupation Security Specialist” (abbreviation: “Security”), which is being carried out in Germany and funded by the Federal Ministry of Education and Research.

In this paper we focus on the research work involved in the development of a gender-sensitive job profile. It consists of an analysis of existing job ads and descriptions on web-based career-guidance platforms, as well as interviews with female and male experts working in information security. The process was guided by the following research questions. The answers provide an indication of how we should formulate and design the job profile and what information we should present and mention in the job profile we are developing.

- 1) How appealing are existing job ads to women based on criteria derived from previous research findings?
- 2) Do existing job descriptions found on web-based career-guidance platforms show the diversity of the field?
- 3) In what respect do the narratives of people working in the field of information security complement the required attributes and skills mentioned in the job ads?

The paper proceeds as follows: section two gives an overview of relevant literature guiding the formulation of criteria for the analysis of existing job ads. In section three,

we present our methodological procedure in analyzing existing job ads in information security. This is followed by our results in section four. At the end, in section five, we discuss the findings and limitations of our research and look ahead to the next steps in the project.

2. LITERATURE REVIEW: WHAT APPEALS TO WOMEN?

2.1. INTERESTS AND PREFERENCES OF FEMALES

Research indicates that job ads in computer sciences are often presented in a way that does not attract women or give them a sense of belonging to the field [11]. However, several studies and scientific projects investigate which job characteristics are important for women (and men) in order to answer the question of how to attract women to an occupational field in which they are so far underrepresented and of how to retain them thereafter. The findings of these research studies are also instructive in helping develop job ads and job descriptions.

Schuth, Brosi, and Welpel (2018) [17] examine which job characteristics galvanize female and male IT professionals to apply for an IT-related position. For both women and men, all of the five job characteristics investigated—work-family balance, salary and benefits, career advancement, challenging tasks, mentoring for women—had a significant, positive effect on the intention to apply. However, for both women and men work-family balance is the most important issue, while special programs for females, such as mentoring, are the least appealing attribute. In an article about how unconscious bias hurts men and the companies they work for, Kimmel (2015) [12] also concludes that female and male employees want the same things in life (e.g., being a good and involved parent) and value the same job characteristics, such as meaningful careers, making a lot of money in a successful career, and a supportive work environment. Thus, emphasizing the job characteristics that were identified as important has the benefit of attracting both women and men. In order to understand why women leave jobs in the technology industry twice as often as men, Holtzblatt (2017) [10] conducted interviews with women who did not drop out of technological jobs to identify key factors that motivate women to stay. These factors include a close-knit, cohesive team, projects and tasks that matter for the people themselves (e.g., learning, stimulation) or for others but need not necessarily be socially relevant, and nonjudgmental flexibility to balance work and private/family responsibilities. According to further studies, women are interested in group work, communication, practical problem-solving [16], and creative tasks [14] and want to interact with people [05]. Furthermore, they are interested in the interfaces the position has with other people, departments, and organizations [02].

2.2. LANGUAGE AND IMAGES

The language and images in a job ad or description can affect the extent to which women experience a feeling of belonging and a sense of fit in an occupational field. Thus, it is important to show both women and men, so that both sexes have the impression that they fit in the field [07, 09]. Gender-sensitive language is also expected to be a productive area [16]. In Germany, where the research is conducted, this means using not only gender-specific pronouns (she/he), but also paying attention to terms denoting

individuals. In the German language the ending of such a term can differ for males and females—for example, employee = *Mitarbeiter* (male) and *Mitarbeiterin* (female). In order to use gender-sensitive language, there is the option of using both female and male terms or of using words that are gender-neutral—for example, *Beschäftigte* (employee) or *Studierende* (students).

Based on gender stereotypes—“generalizations about the attributes of men and women” [08]—the attributes typically ascribed to females are communal attributes, while for males they are agentic. Using language that is both descriptive (what men and women are like) and prescriptive (how men and women should be) promotes gender bias [08] and often leads to misjudgments of the preferences of women and men [09]. As the literature cited above indicates, women and men value the same job attributes nowadays. However, research shows that job ads for positions with a high percentage of males tend to include more agentic than communal terms and that women feel less attracted to job ads with a higher number of agentic words. For men, the use of more agentic or more communal words has no impact [09]. Hentschel and Horvath (2015) [09] list typical agentic attributes (decisive, motivated to lead, career-oriented, competitive, assertive) and communal attributes (communicative, cooperative, team-building, diplomatic, motivating) used in job ads. Other authors conducting research in the same field also cite the words that appeal more to men (e.g., analytical) or to women (e.g., caring, reliable) [04].

2.3. STEREOTYPICAL IMAGE OF IT

Besides the pictures used in job ads, the image of IT and computer scientists is worth examining. Several studies suggest that women and girls still consider IT to be theoretical and boring and that it is all about coding. Furthermore, computer scientists are seen as male “geeks,” sitting in front of their computers all day without any social contact [01, 14, 16]. However, the study of Brauner et al. 2018 [03] shows that while the majority of 99 school pupils who were asked to create a picture of a person working in the field of computer sciences drew a man (67.7 percent), 19.2 percent drew a woman. 13 percent were judged to be ambiguous. This is a promising result showing that the stereotypical image might be on the point of changing. This is what we are aiming for with our “Security” project. We want to depict the occupational field as it is: diverse, creative, communicative, and meaningful [16].

3. METHODOLOGICAL PROCEDURE

Based on the literature review in section two, we defined twenty-one criteria for the analysis of existing job ads in order to answer the first research question: the degree to which these ads appeal to women. The first thing we analyzed were the pictures. The next criterion was the use of gender-sensitive language. As we were analyzing job ads in German, this included the use of gender-specific terms to denote people. Based on the preferences of women and men, employee benefits (e.g., career advancement and promotion opportunities) and job attributes were the next two categories analyzed. We also checked the skill requirements to identify tasks women (and men) are interested in (e.g., communicative and communication skills). Finally, we looked at whether typical agentic or communal stereotypes are mentioned. The criteria were coded in binary

Table 1. Job ad analysis: criteria and results

Category	Criteria	Present in x of 57 job ads (%)
Images	only men	6 (10.53%)
	only women	7 (12.28%)
	men and women	24 (42.11%)
	image without people or no image	20 (35.09%)
Gender-sensitive language	male terms to denote individuals	39 (68.42%)
	male and female terms or neutral terms to denote individuals	12 (21.05%)
Employee benefits	special programs for women	0 (0%)
	work/family balance	25 (43.86%)
	salary and benefits	32 (56.14%)
	career advancement and promotion opportunities	33 (57.89%)
Job/Company description	challenging tasks	26 (45.61%)
	interface to other departments/institutions	50 (87.72%)
	impact of the job	22 (38.60%)
	working in a team	26 (45.61%)
Required skills	creativity	10 (17.54%)
	teamwork	26 (45.61%)
	communicative skills	36 (63.13%)
	language skills (German, English)	42 (73.68%)
	problem solving	8 (14.04%)
Agentic attributes	e.g., assertive, analytical thinking	18 (31.58%)
Communal attributes	e.g., friendly, cooperative	5 (8.77%)

form to indicate whether the factor was “present” or “not present” in the job ad. Table 1 summarizes the criteria we analyzed as well as the results of our analysis. Three people (2 females, 1 male) analyzed fifty-seven randomly selected job ads. In cases where their results differ, the coding of the majority was followed.

Besides the specific criteria we looked for to generate our research findings, the job ads also include further skills and company or job descriptions that cannot be directly assessed to determine how they appeal to women (and men)—e.g., leeway in decision-making. Furthermore, we did not analyze the tasks of the positions described except inasmuch as they served us as indications for the criteria we were examining. However, in order to gain insight into the diversity of the field of information security it would be worth analyzing these tasks in more detail.

In addition, we conducted searches on twenty German-speaking web-based career portals for descriptions of occupations in the field of information security to determine, in response to the second research question, whether the diversity of information security is depicted in the job descriptions.

To date, we have also conducted eight semi-structured interviews with male and female experts working in different areas of information security—e.g., service provider for training and sensitization measures; service provider for technical security measures and penetration tests; responsible person for IT security compliance and audits in a company or in public administration. The aim of these interviews is to identify different professional activities in the field of information security and their main and typical

tasks. We also explore which skills and attributes are required for these tasks in an attempt to identify similarities and differences between the various professional activities. The template for these interviews is based on the critical incident technique. In the context of our research, this involved us asking the interviewees to describe their core task and the typical duties of their daily working life and the skills and attributes that are crucial to carrying out their job successfully. By using this method, we wanted to make sure that only relevant abilities and attributes were identified rather than an endless list of desired attributes. We also wanted to ensure that they talked about tasks that pupils and non-experts can easily imagine. In this paper, we highlight the statements and insights from these interviews that relate to the results of our analysis of the job ads and descriptions.

4. RESULTS

The analysis of the job ads reveals that most of them use images that include both women and men, as is recommended. However, we did not quantify the degree to which men and women are equally presented: in most cases, the proportion was equal, but there were also examples with more men than women or with a man in the foreground and a woman in the background. With regard to gender-sensitive language, we determined that almost 70 percent of the ads use male terms or mainly male terms to denote individuals. Even if the visual language is more or less gender-sensitive in the ads we looked at, the phrasing in the descriptions of company employees or the people the prospective incumbent is expected to work with might create the impression that they are mostly men. One company explicitly encouraged women to apply for the position. Six

companies highlighted the fact that they are an equal opportunity employer and would be pleased to receive applications irrespective of any specific group identification (e.g., sex, nationality).

With regard to employee benefits, it is striking that no job ad cited special programs for females. However, according to the study of Schuth et al. (2018) [17], these programs are valued by IT professionals. In terms of the other job characteristics Schuth et al. (2018) [17] investigated in their study, it is remarkable that over 55 percent of the employers miss the opportunity to attract both women and men by talking about the measures they have introduced to promote a work-family balance (e.g., flexible working hours, support for parents) for their employees. The majority of the ads analyzed address the issues of salary and benefits as well as career advancement and opportunities for promotion.

Based on the research findings presented above, the selected criteria specified in the job and company description are attributes female and male professionals like to see in a position. Bearing in mind that the question of whether or not a task is challenging is a highly subjective one and depends on a person's skills and abilities, we marked job ads which stated that the position includes challenging tasks or sole responsibility for a particular area. Almost half of the ads we analyzed mentioned something along these lines. The finding that almost 90 percent of the ads indicate who the prospective incumbent will work together with counteracts the stereotypical image of a computer scientist working alone in front of his computer. The occupational field information security could be characterized per se as meaningful as it is about identifying risks and implementing measures to ensure information security. However, we looked at if the job ads explicitly mentioned any special impact the job might have on their own organization (e.g., contributing to the company's success), their clients (e.g., successful customer projects), or society (e.g., improving people's lives, creating a safe future). As research states that women (and also men) attach importance to the impact of their work, employers are encouraged to highlight the meaningfulness of the jobs more precisely. Only 38.6 percent of those included in our analysis did that. Working in a close-knit, cohesive team is important for women. Based on this, we checked to see if job ads contain information about the position being part of a team. Less than half (45.61%) are currently doing this.

The next criterion covers the required skills that provide an insight into the job tasks women like to complete. Our results underline the internationality of this field, as a large majority (73.68 percent) of the employers require very good language skills in German and English. In close connection with this, communicative skills are essential, which in turn contradicts the stereotypical image of computer scientists. When it comes to information stating that the position is part of a team, the same number of ads (26) indicate that teamworking abilities are needed for the job. Creativity and problem-solving skills are seldom mentioned in these ads. However, according to the interviews we conducted with experts working in the field, these skills are extremely important (see below).

Although, a third of the job ads include agentic words such as assertive, these words are only sporadically used. We counted at most two typically agentic terms in the same ad. Hentschel and Horvath (2015) [09] found that high numbers of agentic words discourage women from applying for

the job. Thus, we cannot conclude that there is less encouragement for women to apply for the 31.58 percent job positions whose ads use agentic terms. Conversely, we only find communal attributes listed as required characteristics for the prospective incumbent in 8.77 percent of job ads.

With regard to our first research question—how appealing existing job ads in information security are to women—the majority of the job ads we analyzed include gender-sensitive visual language, salary and benefits, information about career advancement and promotion opportunities, the interfaces of the position, and communicative and language skills. However, existing job ads can improve their use of gender-sensitive language and their presentation of work-family balance, challenging tasks, the impact of the job, and how it relates to the team, as well as highlighting the required skills of creativity, teamworking, and problem solving. As there is a fairly even split between the number of criteria that are fulfilled by the majority of the ads and the number for which there is room for improvement, we conclude that existing job ads in information security do address women but can still increase their attractiveness in this respect.

To answer the second research question, first of all it is interesting to record that 14 (70 percent) of the web-based career-guidance portals we researched provide no information about the career field. The others offered information that was sometimes brief, but in most cases detailed—including the required skills and competencies, study courses, and vocational trainings—about the positions of IT security officer, ICT security expert or specialist, IT security coordinator, and IT security manager, as well as about more specialist jobs such as IT security consultant, evaluator of IT security products, fraud analyst, and cryptologist. One platform shows short videos of people working in some of these positions. The six career-guidance platforms that provide information about the broader jobs like IT security officer and about specialized areas such as cryptology show the diversity of the field, because they describe a variety of tasks. However, as most of the career-guidance platforms we researched did not present the field of information security at all, the second research question can be affirmed for only 30 percent of the platforms in our analysis, but not in general. This reveals the importance of developing and disseminating a job profile for the field of information security.

The third research question addresses what can be learned from female and male experts working in the field of information security with regard to the necessary skills and attributes. All eight interviewees stated that "creativity is extremely important in the field of information security." It became apparent that creativity is needed to achieve several different goals: for example, to find solutions for highly complex problems that are often currently unresolved; to develop different, customized solutions, to select the best solution out of a variety of possible measures, to look at problems and security issues from various aspects and perspectives, to explain security issues to people with different backgrounds, knowledge, and experience, to implement security measures, and to develop interesting training measures that keep information security in the minds of all (employees). Another important skill that was mentioned in all the interviews is the ability to communicate. For the experts, communicative competencies cover the ability to understand other people, empathize with them, and make complex information security issues com-

prehensible for everyone. Furthermore, for all those interviewed, communicative activities constitute a major part of their profession. Because information security is a fast-growing and important field, it is not surprising that the experts highlight the willingness to learn as an important attribute an information security specialist should possess. They also agreed that information security is a growing, forward-looking field with considerable prospects. It is thus not surprising that some of those interviewed advise young people to decide which area of information security they would like to specialize in. The interviews offer us a deeper and more vivid insight into the required skills and abilities than the job ads can provide.

5. DISCUSSION

Our analysis showed that typical agentic or communal words are very seldom used in the job ads we analyzed. Thus, from this point of view both women and men might feel attracted to the job ads. However, based on research findings regarding the use of gender-sensitive language and the preferences for certain job attributes, the organizations can improve in the following aspects in order to appeal more to both women and men. Although there are not many terms denoting people in the job ads, the title of the position and the way employees are mentioned in most cases reflect male terminology. Women might infer that it is mostly men working in this profession in the company and could be discouraged from applying for the job. Based on the research findings of Schuth et al (2018) [17], 56 percent of the organizations whose job ads we analyzed fail to attract both women and men by not mentioning any measures for creating work/life balance. In contrast to the interviews conducted with experts working in the field, both the job ads and the job descriptions fail to highlight the importance of creativity in information security—for example, as a means to find innovative, appropriate solutions to a given problem or to motivate and engage people to apply information security more rigorously via sensitization and training measures, or to conduct penetration tests to identify risks in the information management system of an institution.

However, in order to increase the proportion of women in computer science and information security, making job descriptions and ads appealing to women can only be the beginning. As statistics show that women also suffer from a gender pay gap in computer science and leave their IT jobs much more often than men, it is important to overcome these inequalities in order to retain women in their positions. The research project “Women in Tech” by Karen Holtzblatt [10] shows how this could be achieved.

Our research work also has limitations that can be overcome in future research. Although we analyzed the job ads based on different research findings, this analysis cannot be seen as representative or as a definitive result indicating the degree to which young women and girls feel attracted to the job ads because the ads were assessed by only three coders. However, for our purposes, to gain insights into how we should phrase and design a job profile for the field of information security, the coding based on criteria derived from research findings is sufficient, because we plan to have female students conduct an evaluation of the job profile we develop. Although we only coded the fulfilment of a criterion in a binary fashion, some job ads cited various measures (e.g., for work-family balance), while others mentioned only one (such as flexible working hours).

Thus, further studies that are interested in a deeper understanding of the gender-sensitive design of job ads in the field of information security could assess the criteria based on the extent to which they are fulfilled.

The next step in the development of a gender-sensitive job profile is the complete analysis of the interviews and a summary of the different professional specializations, including core and typical tasks as well as required skills and attributes, presented in a readable way that is easy for school pupils to process. Besides a more comprehensive description in a brochure, we are thinking about a video or simulation. This compilation will be guided by the results of our analysis of the job ads and descriptions. However, to overcome the limitations of subjectivity and the constraints of the coding cited above, we will have young females evaluate the job profile in focus groups and surveys.

6. REFERENCES

- [01] C. Ashcraft, E. Eger & M. Friend, **Girls in IT: The Facts**, National Center for Women & Information Technology (NCWIT), 2012.
- [02] C. Ashcraft, B. McLain & E. Eger, **Women in Tech: The Facts. 2016 Update // See what’s changed and what hasn’t**, National Center for Women & Information Technology (NCWIT), 2016.
- [03] Brauner, P., M. Ziefle, U. Schroeder, T. Leonhardt, N. Bergner, and B. Ziegler, Gender Influences On School Students’ Mental Models of Computer Sciences, *Proceedings of Gender & IT, Heilbronn, Germany, May 14–15, 2018 (GenderIT)*, pp. 113-122.
- [04] Burel, S., 2018, “Gender Audit – zur sprachlichen Fassbarmachung von Geschlechterstereotypen in der Online-Kommunikation”, *Proceedings of the 4th Gender&IT conference, Heilbronn, Germany (GenderIT’18)*, ACM, New York, NY, USA, pp. 59-61.
- [05] Busch, A., “Die Geschlechtersegregation beim Berufseinstieg – Berufswerte und ihr Erklärungsbeitrag für die geschlechtstypische Berufswahl”, *Berlin Journal für Soziologie*, Vol. 23, No. 2, 2013, pp. 145-179.
- [06] Frost & Sullivan, **The 2017 Global Information Security Workforce Study: Women in Cybersecurity**, Frost & Sullivan, 2017.
- [07] Gringer, J., “IT-Studium. Zeigt mehr Frauen!”, *golem.de – IT-News für Profis*, March 5, 2018, 12:02 PM <https://www.golem.de/news/it-studium-zeigt-mehr-frauen-1803-133014.html>, accessed May 28, 2018.
- [08] Heilman, M.E., “Gender stereotypes and workplace bias”, *Research in Organizational Behavior*, Vol. 32, 2012, pp. 113-135.
- [09] Hentschel, T., and L.K. Horvath, “Passende Talente ansprechen – Rekrutierung und Gestaltung von Stellenausschreibungen”, In: C. Peus, S. Braun, T. Hentschel, and D. Frey (eds.), *Personalauswahl in der Wissenschaft. Evidenzbasierte Methoden und Impulse für die Praxis*, Springer-Verlag, Berlin, Heidelberg, 2015, pp. 65-82.

- [10] Holtzblatt, K., *Women in Technology. Factors influencing work choices*, <https://www.slideshare.net/Karen-Holtzblatt/women-in-high-tech-project-moving-from-discussion-to-action>, 2017, accessed May 28, 2018.
- [11] Kay, A., “How Job Ads Can Reinforce or Undermine the Status Quo”, *NCWIT Summit*, https://www.ncwit.org/sites/default/files/a.kay_jobpostingbias_ncwitsummit12_0.pdf, 2012, accessed May 28, 2018.
- [12] Kimmel, M., “How Unconscious Bias Hurts Men—and the Companies they Work for”, In I.M. Welp, P. Brosi, L. Ritzenhöfer, and T. Schwarzmüller (eds.), *Auswahl von Männern und Frauen als Führungskräfte Perspektiven aus Wirtschaft, Wissenschaft, Medien und Politik*, Springer Fachmedien, Wiesbaden, 2015, pp. 85-89.
- [13] Medienpädagogischer Forschungsverbund Südwest (mpfs) (ed.), *JIM 2017. Jugend, Information, (Multi-) Media: Basisstudie zum Medienumgang 12- bis 19-Jähriger in Deutschland*, https://www.mpfs.de/fileadmin/files/Studien/JIM/2017/JIM_2017.pdf, 2017, accessed May 28, 2018.
- [14] Microsoft, *Why Europe’s girls aren’t studying STEM, Region-wide research of 11,500 women reveals how we can get more young women into science, technology, engineering and math*, Whitepaper, https://na01.safelinks.protection.outlook.com/?url=http%3A%2F%2Ff3.hq.labs.de%2FHelper%2Fdownload_helper.aspx%3FmailingId%3D1840439%26key%3D43f36d961955f1ed094de0f8c645de704db9436f%26file%3D639489&data=02%7C01%7CIsabel.Richter%40microsoft.com%7Cef5bb2955a464ef-bbbef08d48bdde16c%7C72f988bf86f141af91ab2d7cd011db47%7C1%7C0%7C636287232465303550&sdata=7LOqHKZ2IsOF-HCgc1YnyoLS87qKHd2t6zGj%2FaFzMmlU%3D&reserved=0, 2017, accessed June 1, 2018.
- [15] Morgan, S., “Cybersecurity labor crunch to hit 3.5 million unfilled jobs by 2021. The cyber crime epidemic is expected to triple the number of open positions over the next five years”, *CSO*, June 8, 2017, 7:09 AM, <https://www.csoonline.com/article/3200024/security/cybersecurity-labor-crunch-to-hit-35-million-unfilled-jobs-by-2021.html>, accessed June 1, 2018.
- [16] Paukstadt, U., K. Bergener, J. Becker, V. Dahl, C. Denz, and I. Zeisberg, “Design Recommendations for Web-based Career Guidance Platforms – Let Young Women Experience IT Careers!”, *Proceedings of the 51st Hawaii International Conference on System Sciences*, 2018, pp. 5116-5125.
- [17] M. Schuth, P. Brosi & I.M. Welp, “Recruiting Women in IT: A Conjoint-Analysis Approach”, **HICSS-51**, 2018.

7. ACKNOWLEDGMENT

The authors would like to thank research assistant Denis Edich and Franziska Klaus, a student from the research project, for their dedicated support in the study.