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Barbara Prommegger

Technical University of Munich, Germany, barbara.prommegger@tum.de

Selin Arpaci

Technical University of Munich, Germany, selin.arpaci@tum.de

Helmut Krcmar

Technical University of Munich, Germany, helmut.krcmar@tum.de

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The Things That Drive Us – How the Next Generation of IT Professionals Defines Contemporary Career Success

Barbara Prommegger¹, Selin Arpacı¹ and Helmut Krcmar¹

¹ Technical University of Munich, Department of Informatics, Munich, Germany
{barbara.prommegger,selin.arpaci,helmut.krcmar}@tum.de

Abstract. Modern career concepts revolutionize our understanding of a successful career. Employees nowadays define career success in many diverse ways, based on a variety of personal goals. To attract the next generation of IT professionals and to improve gender balance in IT, organizations must understand future IT professionals' perceptions of a successful career. By analyzing 127 personal career success definitions from IT students in Germany, we present a broad spectrum of desired career success factors in IT. We illustrate the concept of career success dualism, which describes career success as a balance between multiple factors, such as remuneration and work-life balance. Furthermore, we present how female IT students have a stronger drive toward subjective career success factors than males. Our study contributes to a better understanding of current IT students and suggests how organizations can hire and retain the next generation of IT professionals.

Keywords: IT students, careers, career success dualism, objective career success, subjective career success

1 Introduction

The high demand for information technology (IT) professionals is an issue faced by many companies worldwide. If companies are unable to compete in the highly competitive market for IT professionals, they face major competitive disadvantages and even financial losses [1]. Companies will need to attract the next-generation IT professionals, apart from experienced IT professionals, as they bring with them up-to-date and highly demanded IT knowledge [2, 3]. To attract young IT talent and maintain diversity in IT, organizations must understand and meet the career goals and needs of the next generation of IT professionals [1]. Thus, investigating contemporary definitions of career success (CS) of male and female IT students is promising.

Current trends in the IT job market require redefining and re-evaluating CS in IT. First, IT professionals are increasingly pursuing modern career paths [4]. In the past, employees commonly moved vertically within a company based on promotion [5]. However, modern career paths in IT also allow horizontal movements between organizations and even occupations [6]. These modern careers correspond to a more contemporary mindset, especially shared by young individuals who strive for diverse work experiences rather than hierarchical advancement [7, 8]. Second, in the past many

employees sought advancement in salary and position within one company to secure their own and their family's living. However, nowadays the importance of one life-long employer decreases [9]. Consequently, future IT professionals are more open to organizational turnover [2], which makes it even harder for companies to compete in the war for IT talents.

With an increase in contemporary career paths in IT and a changing mindset regarding the importance of a career, addressing how these changes affect our definition of CS is necessary. Considering the crucial influence of organizational practices on the fulfillment of CS [10], understanding contemporary definitions of CS in IT is important for individuals and companies [11, 12]. Based on the literature on the scarcity of women in IT [3, 4], women must be better integrated into the IT profession, and attractive jobs and development opportunities in IT must be created. Thus, we explore the following research questions:

RQ1: How do current IT students define career success?

RQ2: Do IT students' definitions of career success vary across gender?

We investigate these research questions using a mixed method approach. We asked IT students at three German universities about their definitions of CS. Our study contributes to a better understanding of the contemporary definitions of CS in IT and helps organizations to better engage with the needs of the next generation of IT professionals.

2 Theoretical Background

To understand contemporary definitions of CS in IT, we must first review the literature on CS, as well as on the gender imbalance in the IT profession. Thus, we present the related studies on these topics in this section.

2.1 Career Success

CS is defined as the “accomplishment of desirable work-related outcomes at any point in a person’s work experiences over time [5]”. It is traditionally divided into objective and subjective factors, often reflecting an organizational and individual perspective [6-8]. While organizational actors, from an external perspective, often assess an individual’s CS based on measurable factors, such as remuneration and advancement [9], an individual’s perception and definition can take on many different facets [5, 10]. Subjective CS therefore reflects personal goals and also takes into account non-measurable goals, such as the desire for meaningfulness or a sense of security [11].

Modern career paths have a lasting impact on our understanding of CS and consequently also on the choice of our employers [11, 12]. The increased diversity in careers makes it more difficult to compare career paths and success [13]. Corporate advancement, in particular, is difficult to measure as the diversity of contemporary careers means that career mobility is no longer just vertical, but also increasingly horizontal [14]. Studies even illustrate how employees, called “happy-losers”, are willing to move to new jobs with better chances for subjective CS, even though this

might have a negative impact on their objective CS [15]. Personal career definitions are therefore becoming increasingly important [12], making it essential for companies to regularly assess the career plans of their employees. Given the importance of contemporary CS, it is promising to investigate IT students' definition of CS.

2.2 Career Success in the IT Profession

Traditional, objective career success factors (CSFs) such as remuneration and promotion are well explored in IT workforce research [16-19]. Due to the high demand for IT professionals, they are usually in a good position to negotiate good salaries and are therefore among the best-paid professions in Germany [20]. However, advancement often meant a shift away from IT to higher management positions [10]. To address the technical affinity of technical specialists and offer advancement for IT professionals without desire for personnel responsibility, companies are increasingly offering dual career paths that give IT professionals the chance to choose between advancing to a management or a specialist career [21].

However, more recent studies have shown that the IT profession has moved on from dual career path models [22]. A more diverse image of the IT profession is now emerging, allowing for modern careers in IT that switch between organizations and even occupations [22]. The decreasing significance of vertical advancement is likely to change the meaning of objective CS such as remuneration and advancement [11, 12]. Consequently, CS in IT is now increasingly defined in terms of subjective CSFs by IT professionals [23].

2.3 Gender Imbalance in the IT Profession

The inclusion and retention of women in IT is an ongoing challenge [24], thus research has been studying women and their careers in IT for years [3, 4, 25]. Women in IT often encounter societal, organizational, and personal obstacles that prevent women from entering and advancing in IT field [26-28]. Literature indicates that men are twice as likely to be hired over an equally qualified woman for STEM positions [29]. Further, after accessing IT positions, women in IT may face barriers and unconscious bias [30]. These factors include social expectations [3, 31], work-family conflict [27, 32], men-oriented IT occupational culture with a lack of role models and informal networks in the organizations [3]. As a consequence, women repeatedly choose to leave IT, further exacerbating the gender imbalance in IT [3]. In order to keep women in IT in the long term, organizations must therefore pay more attention to their needs and career plans. Since CS and work outcomes are evaluated differently by women and men [33-35], we aim to investigate whether the definition of CS differs between female and male IT students and how organizations can improve gender balance in IT by promoting gender-specific career plans.

3 Research Method

To explore the contemporary perception of CS in IT, we asked IT students for their personal definition of CS. This section explains the research design, data collection, and data analysis.

3.1. Research Design

For our study, we captured definitions of CS among IT students using an online survey. Due to the lack of qualitative research on CS in IT and in order to capture the relative importance of different CSFs, we deemed a qualitative approach appropriate. Thus, we oriented ourselves on other research on CS investigating CS definitions in a qualitative way [23, 35] and opted for the following open-ended question: *Career success means something different for everyone. For some it means a high salary and personnel responsibility, whereas for others it may mean a good work–life balance. Please explain in your own words what career success means to you. Career success means to me....*” In addition, the survey included questions regarding field of study, the current semester, and personal data such as age and gender. Based on these questions, we coded the different definitions of CS and identified differences across gender.

3.2. Data Collection

We defined current IT students as our target group. Since IT is a highly diverse professional field, we decided to include students who were currently pursuing a degree in IT or a similar field. This restriction included the following studies: Computer Science/Informatics, Information Systems, Games Engineering, Data Engineering, Robotics and Media Informatics. At the beginning of December 2020, we started a call for participation in the study at three German universities, offering the mentioned study programs, with which we reached about 700 IT students. By the end of December, we had received 127 complete definitions of CS by our target group (response rate: 18.1 %). The descriptive analysis of the sample shows that 31.5 % of the sample was female. The majority of the students pursued a bachelor’s program (84.3%) and were in their third or higher year (81.1%). Table 1 provides an overview of the students’ demographics.

3.3. Data Analysis

To gain the best possible insights from the large number of career definitions, we decided to examine the data using a mixed method approach [36]. As a first step, we pursued a qualitative approach that involved coding the responses and identifying different CSFs. Second, we ranked the mentioned CSFs based on their importance and examined differences in the definitions based on gender, using a quantitative approach.

Table 1: Sample Characteristics

| Characteristic | Category | n=127 | % |
|---------------------|-------------------|-------|-------|
| Gender | Female | 40 | 31.5% |
| | Male | 87 | 68.5% |
| Age | 18 – 20 years old | 31 | 24.4% |
| | 21 – 23 years old | 73 | 57.5% |
| | 24 – 26 years old | 17 | 13.4% |
| | 27 or higher | 6 | 4.7% |
| Degree | Bachelor | 107 | 84.3% |
| | Master or Higher | 20 | 15.7% |
| Study Period | First Year | 6 | 4.7% |
| | Second Year | 18 | 14.2% |
| | Third Year | 64 | 50.4% |
| | > Three Years | 39 | 30.7% |

For the coding steps, we were guided by established studies on CS and oriented ourselves on their categorization of CS [11, 23]. We conducted the coding in three steps, covering both inductive and deductive coding. In the first step, we followed an axial coding approach and divided the definitions into several subcategories [37]. For example, we assigned two subcategories to the following statement: “[*To me, CS means*] to have a leading position in my field and at the same time to connect it with a beautiful work-life balance.” The subcategories we assigned were leadership and work-life balance. In the second step we conducted selective coding and merged the subcategories to main categories [37]. For example, the above-mentioned subcategory leadership was assigned to the main category “advancement”, while the subcategory work-life balance was assigned to the main category “compatibility with private life”. In this step, we followed the coding scheme of Gubler [23] to make the results comparable to previous, rare qualitative research on CS of IT workforce. To be precise, we tried assigning our identified subcategories to main categories also found by Gubler [23]. If we could not assign a subcategory to a main category suggested by Gubler [23], we defined a new category. This step resulted in ten main categories of CS (see 4 Results). Finally, we classified the main categories based on objective and subjective CSFs, resulting in two objective CSF categories and eight subjective CSF categories. All three coding steps were conducted by two researchers. The comparison of the codes at the end of the coding process resulted in a coder reliability of 90%.

To get deeper insights into the data set, we decided to follow up with a quantitative approach. First, to understand the importance of the different CSFs, we ranked them according to the number of times they were mentioned in the data set. Finally, we calculated the differences in the statements based on gender with a chi-squared test.

4 Results

4.1 Career Success Definitions by German IT Students

Table 2 presents an overview of the identified objective and subjective CSFs and provides the definition and an example from the data set. For objective CSFs, we found statements that covered definitions on (1) *remuneration* and (2) *advancement*. These definitions included traditional interpretations of CS based on monetary compensation or on rises of positions. For example, a male Games Engineering student stated that CS means to have “*enough money to afford a good life with my family*”, hence defined CS based on remuneration. A female Information Systems student defined CS as “*the rise to leadership*”, and thus followed traditional CS definitions based on advancement.

Table 2: Career Success Definitions of the Next Generation of IT Professionals; for a comparison see Gubler [23]

| Categories of Career Success | | Definition | Example Quotes – Career success means to me... |
|--|----------------------------------|--|--|
| Objective Career Success Factors | | | |
| 1 | Remuneration | CS defined in terms of monetary compensation. | <i>Enough money to afford a good life with my family.</i> |
| 2 | Advancement | CS defined in terms of rises of positions. | <i>Rise to leadership.</i> |
| Subjective Career Success Factors | | | |
| 3 | Compatibility with private life | CS defined in terms of being able to pursue a fulfilling private life. | <i>A work–life balance, whereby work can be in the foreground over certain periods, but in other times, it does not take everything.</i> |
| 4 | Satisfaction | CS defined in terms of positive feelings about the job or the life. | <i>When work no longer feels like work.</i> |
| 5 | Meaningful work | CS defined in terms of valuable work. | <i>Changing the world for the better.</i> |
| 6 | Self-development | CS defined in terms of self-realization. | <i>Finding a position where I can develop and increase my skills.</i> |
| 7 | Challenging and interesting work | CS defined in terms of challenging, and interesting work. | <i>Working on interesting problems and becoming a world-class expert in my field.</i> |
| 8 | Independence | CS defined in terms of being able to make decisions independently. | <i>The ability to decide for yourself what to work on.</i> |
| 9 | Recognition | CS defined in terms of being recognized at work. | <i>When the other employees like me and like to work with me.</i> |
| 10 | Job security | CS defined in terms of having a secure job. | <i>Stable employment relationship.</i> |

Subjective CSFs, on the other hand, were more diverse. In total, we found eight subjective CSFs, including (3) *compatibility with private life*, (4) *satisfaction*, (6) *self-development* and (8) *independence*. In addition, we also found definitions on a task level, which described the type of work: (5) *meaningful* or (7) *interesting and challenging work*. For example, a male Computer Science student defined CS as pursuing “*work that enables me to change the world for the better*”. We also found statements that included references to (9) *recognition*, meaning that students defined CS based on a general definition of being recognized or respected. For example, a female Computer Science student defined CS based on the relation with her work colleagues: “[*To me, CS means*] *when the other employees like me and like to work with me.*” Finally, few students indicated that CS for them meant (10) *job security*.

To understand which CSFs hold particular importance for the next generation of IT professionals, we ranked the identified CSFs based on the counts of their mentions (see Table 3). As one statement of a single student could include several CSFs (for example remuneration and work-life balance), we were able to identify 217 CSFs based on the 127 statements, meaning one single definition included 1.7 CSFs on average. To explain this in more detail, Table 3 provides an overview of the dimensions of the CS definitions. 52 participants (40.9%) defined CS based on one dimension only. Out of these 52 participants, 15 defined CS based on one objective CSF only, and 37 participants defined CS on one subjective CSF only. More than half of the participants (n= 75; 59.1%) defined CS not one-dimensionally, but based on two or more CSFs.

Table 4 provides information on the ranking of the identified CSFs (Column Total). Out of the 217 identified CSFs, 72 (33.2%) were objective CSFs, and 145 (66.8%) were subjective CSFs. The most frequently mentioned CSF was remuneration. We found 48 statements (22.1%) that referred to monetary aspects defining CS. We noticed a great variety of statements in this category. Few statements on salary included a definition that involved striving for a high amount of money. However, most of the identified definitions included statements about being satisfied with the salary or having a secure income. The following definition of a male Computer Science student summarizes this finding: “*CS for me is when I can pursue the projects that I enjoy without paying attention to whether they will bring me enough money or not.*” We conclude that remuneration as a CSF does not automatically mean striving for more money. It can also mean striving for ‘enough’ money.

Table 3: Career Success Definitions One-Dimensionally vs Multi-Dimensionally

| | One-dimensional Definitions n=52 (40.9%) | | Multi-dimensional Definitions n=75 (59.1%) | | |
|--------------------------|---|-------------------------------|---|---|--|
| | Objective n=15 (11.8%) | Subjective n=37 (29.1%) | Objective only n=7 (5.5%) | Subjective only n = 26 (20.5%) | Subject. + Object. n=42 (33.1%) |
| Whole Sample n=127 | | | | | |
| Male | 15 | 25 | 4 | 13 | 30 |
| Female | 0 | 12 | 3 | 13 | 12 |

Table 4: Identified Career Success Factors in Total and Based on Gender

| Categories of CSFs | Total $\sum_i=217$ | Male $\sum_m=140$ | Female $\sum_f=77$ | Difference in % |
|-----------------------------------|--------------------------|-------------------------|-------------------------|--------------------|
| Objective CSFs | n=72 (33.2%) | n=53 (37.8%) | n=19 (24.7%) | -13.1% |
| 1 Remuneration | 48 (22.1%) | 35 (25.0%) | 13 (16.9%) | -8.1% |
| 2 Advancement | 24 (11.1%) | 18 (12.9%) | 6 (7.8%) | -5.9% |
| Subjective CSFs | n=145 (66.8%) | n=87 (62.1%) | n=58 (75.3%) | +13.2% |
| 3 Compatibility with private life | 32 (14.8%) | 18 (12.9%) | 14 (18.2%) | +5.3% |
| 4 Satisfaction | 31 (14.3%) | 16 (11.4%) | 15 (19.5%) | +8.1% |
| 5 Meaningful work | 20 (9.2%) | 14 (10.0%) | 6 (7.8%) | -2.2% |
| 6 Self-Development | 17 (7.8%) | 10 (7.1%) | 7 (9.1%) | +2.0% |
| 7 Challenging & interesting work | 15 (6.9%) | 8 (5.7%) | 7 (9.1%) | +3.4% |
| 8 Independence | 13 (6%) | 12 (8.6%) | 1 (1.3%) | -7.3% |
| 9 Recognition | 13 (6%) | 6 (4.3%) | 7 (9.1%) | +4.8% |
| 10 Job security | 4 (1.8%) | 3 (2.5%) | 1 (1.3%) | -1.2% |

24 statements (11.1%) referred to advancement in the organization, for example in terms of gaining responsibility. A male Information Systems student defined this type of CSF as: “[To me, CS means] achieving a senior position that allows me to manage a big team and make critical decisions.”

The most mentioned subjective CSFs were compatibility with private life (n=32, 14.8%) and satisfaction (n=31, 14.3%). Students who defined CS based on these terms stated that they want to be able to find time for their families and hobbies. Furthermore, we found statements indicating the wish to not work fulltime. The following statement of a male Computer Science student illustrates this finding: “To me, CS is finding a job that makes me happy and which requires me to not work fulltime.”

Finally, 20 statements (9.2%) pointed to CS based on meaningful work, meaning that these students were searching for work that significantly contributed value to their organization or to society. The rest of the CSFs were self-development (n=17, 7.8%), challenging and interesting work (n=15, 6.9%), independence (n=13, 6.0%), recognition (n=13, 6.0%), and job security (n=4, 1.8%).

4.2 Career Success Factors Based on Gender

Finally, we were interested in whether we could see differences in the definitions of CS based on gender. The columns Male vs Female in Table 4 illustrate the gender distribution and their career definitions. A total of 140 CSFs were assigned to men and 77 to women, corresponding to a normal distribution in IT workforce samples [38].

Based on the results, we suggest that subjective CSFs are considerably more important for women than for men. Only 19 (24.7%) statements of female IT students pointed to CS based on remuneration or advancement. Rather, women seem to attach greater importance to subjective CSF (n=58, 75.3%) especially to satisfaction (19.5%), and compatibility with private life (18.2%)

Two further remarkable aspects are the unequal distributions of the CSFs independence and recognition. We found fewer statements of women indicating defining CS based on independence (m= 8.6% vs. f= 1.3%). However, women defined CS based on recognition more often (m= 4.3% vs f= 9.1%). These results indicate a lower wish to work independently but a higher desire for recognition by women in IT.

We performed a chi-squared test of independence to examine the gender differences in the analysis. We found a significant difference between the two samples in terms of objective versus subjective CSFs ($X^2(1, n=217) = 3.9, p=.048$).

5. Discussion

In the following, we elaborate on our key findings, provide theoretical and practical implications and explain limitations and future research of this study.

5.1. Key Insights

- **Perceived Career Success by the Next Generation of IT Professionals**

In total, we found ten types of CSFs based on 127 definitions on CS. Interestingly, most of the CSFs (66.8%) were not linked to objective CSFs, but rather to subjective CSFs. This result indicates that, following recent literature on contemporary CS [12, 23], the next generation of IT professionals in Germany will increasingly look for meaningful and satisfying jobs which offer compatibility with their private lives.

At the same time, however, we wish to urge that the importance of objective CSFs should not be underestimated. Although it appears that most of the CSFs were subjectively associated, remuneration and advancement were frequently paired with subjective CSFs and remained among the most frequent mentioned CSFs. We suggest that remuneration and advancement function as hygiene factors. Similar to Gubler [23], we found statements on remuneration that underline the importance of *enough* money, without highlighting a *high amount* of money. Due to the ongoing IT skill shortage and the good payment in IT, the next generation of IT professionals might view monetary compensation as a foundation for success in their careers. Since the absence of hygiene factors can lead to great dissatisfaction among IT professionals [39], we advise researchers and companies to consider remuneration as a main CSF in IT.

- **Career Success Dualism**

As indicated above, more than half of the IT students provided definitions of CS that included not only one CSF, but two or more. In these multi-dimensional statements, we often found that CS was defined as a balance between different, sometimes even competing CSFs, a phenomenon that we would like to describe as *career success dualism*. Many of the statements indicated the importance for students to generate a good income during their career or rise in positions within the company, while realizing their own potential (self-development), doing challenging work (challenge), or being happy (satisfaction). Some examples for CS dualism, we found in our data set:

Challenge & remuneration: “[To me, CS means] constantly being challenged with varied tasks **while** getting a salary from which I can live without any problems.”

Advancement & compatibility with private life: “[To me, CS means...] to have a leading position in my field and **at the same time** to live a beautiful work-life balance.”

Meaningful work & remuneration: “[To me, CS means...] to do something that positively affects the world, **but also** earning enough to have family.”

Additionally, we found that IT students with wish for CS dualism do not necessarily want the extremes of both CSFs, but rather wish to bring different CSFs into balance (e.g., money & work-life balance). To address CS dualism among young IT professionals, companies must satisfy a broad range of CSFs, ideally in combination with each other. Identifying promising combinations of CSFs and implementing adequate actions are an interesting starting point for new corporate IT recruitment and retention efforts, as they show that companies can work with their employees to explore a balance of CSFs that is beneficial to both the employer and the employee.

- **Perceived Career Success and Gender**

The results support previous research on CS of women in IT [23] and showed that women named subjective CSFs significantly more often than men did. In line with Armstrong’s [3] findings, we suggest that women’s career plans may be influenced by social and structural factors, therefore influencing their success definitions, which organizations need to consider when shaping career opportunities for women in IT. To maintain gender diversity in IT, we recommend the following measures.

(1) *Recognition of women in IT.* IT workforce research points out societal, organizational, and personal obstacles that prevent women from advancing in IT [26-28]. Highlighting the desire for *recognition* by women in IT, we suggest that organizations will need to provide more room for development for women in the male dominant IT environment. Specifically, organizations should celebrate women in IT leadership roles to create role models for future female IT professionals. Furthermore, organizations should organize networking events and mentoring programs to overcome bias and increase recognition, as well as visibility of women in IT. Given the frequent mention of the CSF *satisfaction* in the women’s sample, companies should adopt an inclusive organizational culture that clearly promotes diversity in IT and makes the IT environment a friendly environment for a diverse group of professionals.

(2) *IT career paths that meet diverse needs.* Women’s career plans might differ from men’s as their career planning has to combine social expectations and professional success [30, 32]. To retain women in IT, we suggest that organizations should leverage the boundaryless structure of IT [40] and ensure flexibility in organizational and

occupational paths, so that women can craft positions and work arrangements based on their needs. By ranking *compatibility with private life, satisfaction* and *remuneration* as the three most mentioned CSFs, female IT students made a clear statement that they want to fulfill subjective CSF without having to forego salary. Diverse options for different career paths in IT will allow women to design their own IT career path according to their own desires and will reduce dropout rates in IT. By giving opportunities for crafting the profession to their needs, companies will not only tackle the gender imbalance in IT but also improve their processes and performance [41].

5.2. Theoretical Implications

Our study has theoretical contributions in the following areas:

(1) *Contemporary career design and its consequences in IT*. The present study illustrates modern definitions of CS of the next-generation IT professionals. Thus, we contribute to a better understanding of the future development of careers in IT and consequently add our findings to the research on careers in IT [22, 38]. The study results suggest that careers in IT will continue to become more diverse as the next generation of IT professionals highly values subjective CSFs, supporting the research of [23]. With insights on CS dualism, we furthermore extend the research on CS in IT by [23] and provide recommendations for contemporary career design in IT. We expect that IT professionals will consequently increasingly take charge of their own career planning in IT and follow their own goals and values. Accordingly, the IT profession might keep evolving into a boundaryless profession [22] - implying that we can expect more career mobility between organizations and even professions in the future.

(2) *Gender imbalance in the IT profession*. With this study, we want to contribute to a better understanding of the next generation of women in IT and accordingly provide new perspectives on how to tackle gender imbalance in IT. Our study shows gender-specific differences regarding CS in IT. Through our two suggestions (*Recognition of women in IT* and *IT career paths that meet diverse needs*), we extend the literature recommendations on the inclusion of women in IT [3, 30, 32]. By discovering that subjective CSFs play a more important role for women than for men, we provide new suggestions for explaining why women in IT follow different career paths [3]. The multitude of subjective CSFs of female IT students indicates that they might not strive for typical vertical career ascents in companies, and rather follow their own subjective career values and goals. With this study, we hope to continue to draw attention to women in IT and call on organizations to give more space to women in IT.

5.3. Practical Implications

With this paper, we provide insights into future IT professionals' plans for their careers. We would like to point out several ways for companies to hire and retain young IT professionals. First, to compete in the IT job market, companies must satisfy a broad range of CSFs, ideally in combination with each other. Organizations need to understand that the career plans of the next generation of IT professionals often include a combination of multiple CSFs, for which the employees might be willing to

compromise. By addressing several CSFs at the same time, organizations can offer development opportunities that are beneficial to both the employer and the employee. Second, the study results illustrate how remuneration still functions as an important factor for young IT professionals. Therefore, companies should pay attention to fair pay and supplement monetary recognition with other forms of appreciation, such as challenging and exciting projects or freedom to make decisions. Finally, a greater number of subjective CSFs could lead to a shift away from vertical advancement in IT towards a more diverse range of development. Therefore, companies should offer contemporary career paths to retain IT professionals and improve gender balance in IT.

5.4. Limitations and Future Research

The limitations of our study stem firstly from the research design. We focused on IT students in Germany; hence, our study may be influenced by the cultural and geographical context. The prevailing conditions could shape perceived CS in the country. Therefore, for the generalizability of the results, we hope to replicate the study in an international context. Finally, we assume that the perception of CS, similar to career anchors [42], might change over the course of a career. This would imply that the surveyed IT students might be targeting different CSFs over time. Therefore, we suggest that companies continuously evaluate their employees' perceived CS and adjust their employees' development plan accordingly.

In addition to replicating this study in the international context, we would be happy to read more studies on careers in IT that specifically address the perceptions of individuals working in IT. By only investigating career paths, we tend to conduct career research from an abstract level without talking with the people behind the careers. We therefore call for more qualitative studies on CS of IT professionals.

Furthermore, our study provides a better understanding of the next generation of IT professionals. To understand modern career values, researchers should investigate IT students and their career plans. As presented by studies on career interventions, persistence in IT is already shaped in college years [43]. This makes it even more important to study the aspirations and plans of prospective IT professionals. Therefore, we call for more research to better understand the next generation of IT professionals.

6. Conclusion

This study was motivated by the need for organizations to understand the career plans of the next generation of IT professionals to compete in the war for talents. We asked current IT students for their definition of CS and found the phenomenon of career success dualism, describing CS as a balance between multiple CSFs. Furthermore, we show that women define CS differently than men, with a focus on subjective CSFs. Therefore, companies should create career opportunities and settings in line with the preferences of women in IT. Our study contributes to a better understanding of the next generation of IT professionals and provides recommendations for hiring and retaining IT talent.

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