

A Fuzzy-Set, Qualitative, Comparative Analysis of Maslow's 8th Level Pyramid on Manager's Willingness to Change the Job

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Abstract: Environments and their core principles, affect people on different levels. Maslow's hierarchy of needs was one of the first models to depict the various factors that individuals want to fulfill, to feel content. The purpose of this study is to further develop the existing model, using its core principles, to determine, what factors motivate managers to stay in their current positions. Methodologically, the study was conducted with 325 participants, consisting of eight questions, each one matches one level of Maslow's hierarchy of needs. The results suggest that three categories of managers can be formed, to represent their decision-making and job satisfaction levels, based on their psychological background. The results close the research gap of a necessity for individually tailored and adapted analysis of character traits for supervisors and managers, to evaluate their strategic behaviors and ensure human resource capital in key positions.

Keywords: Maslow; job; hierarchy of needs; fuzzy-set qualitative comparative analysis

1 Introduction

Globalization has changed many factors of daily life, including business management studies. Through the adoption of widespread technological tools, impacting communication, cooperative co-working and leadership practices, influencing the world job markets in the near future [1]. The statistics show that the fluctuation of employees, in Germany, has risen steadily over the last 20 years [2], causing progressively increasing numbers of job changes, in the inter-industrial settings. Several publications deal with the reasons why, especially younger generations, particularly Millennials, tend to change the jobs more often in a short period of time [3] [4]. A report from Gallup showed that in 2016, the job-hopping of the Millennial's cost over \$30 billion USD, for the U.S economy Alone [5]. Older studies have shown that managers are less loyal to their employer over time and change jobs more frequently [6]. The negative aspects of this, have

been highlighted in further US panel studies, by Kambourov and Manovskii [7] and Parrado et al. [8], which show that the increase in frequent job changes is accompanied by a loss of job-specific skills, which in turn has a negative impact on the economy. While the literature provides many publications for the reasons of managers changing jobs [9] [10], there are far fewer studies on why managers want to stay in their jobs. A more detailed examination of the factors that lead to managers deciding to stay in their current position, is therefore, necessary. This research gap needs to be explored, in order to develop a better understanding of the motivation and needs of managers.

This paper deals with the willingness of employees in managerial positions, to stay in their current jobs, based on Maslow's Hierarchy Of Needs. The research question is:

***When are managers willing to stay at their job, based on
Maslow's hierarchy of needs?***

The objective of this paper is to gain knowledge on which level, according to Maslow's Hierarchy of Needs, managers are willing to stay at their job and thereby, the company retains valuable knowledge and human resource capital. For this, an online survey was conducted and the resulting data was evaluated using a fuzzy-set, qualitative, comparative analysis. The focus of this research project is on Germany, as the country is increasingly focusing on work flexibility [11] [12], which makes the differentiation of individuals in fsQCA more promising. Especially for these times of working from home, due to the COVID-19 pandemic, proponents of the "flexicurity" thesis have argued that high job mobility (and thus, potentially, also occupational mobility) correlates to long-term employment security. This phenomenon is confirmed by these studies [13] [14].

1.1 Introduction of the Model

The hierarchy of needs by Maslow, is a widely discussed theory of basic human needs [15] [16]. Originating from the field of social psychology, the model was adapted into multiple other areas, such as medicine, social sciences and economics, e.g. [17-22].

Maslow's hierarchy of needs is a model that deals with the content, nature and impact of needs. Some needs have a higher priority over others, and they cannot be replaced by each other [23]. Maslow, however, did not believe that prioritizing needs was appropriate [15, p. 370]. Therefore, he first classified needs into 5 major categories, starting with the most basic physiological needs, up to the cognitively and emotionally highly developed human needs (physiological needs, safety needs, love needs, esteem needs, needs for self-actualization) [16, pp. 35-46]. The first four categories were defined as deficiency needs, and the fifth category was growth needs [20]. Maslow stated that deficiency needs should be satisfied in order to avoid physical or mental disorder, while growth needs never

can be fully satisfied [16]. He describes the self-actualization as a striving of one “to become more and more what one idiosyncratically is, to become everything that one is capable of becoming” [16, p. 46]. Understanding the different levels of Maslow is crucial to allow the coherent analysis of individuals changing or staying at their current employer. In the following, the needs are presented shortly, focusing on the emotional learnings from fulfilling or missing these needs influencing the decision-making of future managers [24] and the group-internal communication between peers [25].

Physiological needs represent the base level of Maslow and ensures the health and physical development and thereby allows the buildup of abilities like resistance against external factors. Fulfilling this part of the pyramid is critical, as missing out results in deep social divide and influences the psychological development of future generations [26].

Safety is defined by securing the stability and freedom to develop in a certain framework of structure and laws. The secure environment allows individuals to process unexpected, negatively connotated events and emotions, manifested by fear or anger. Furthermore, stress resilience and the ability to cope with panic through empathy, logical thinking and emotional stability are key learnings from fulfilling the needs of this stage adequately [27].

However, safety is not limited to the term of “being protected” alone. Empathy, mostly defined by positive social interactions fosters the build-up of creativity and self-esteem, resulting in long-lasting consequences on the individual characteristic development on the people in the direct environment. This can be achieved by leadership styles most effectively [28] [29]. In his original work of Maslow, “parenting styles” are the most influential factor to affect the feeling of safety of others positively or negatively. Similarly, leadership, through the adoption of authoritative principles instead of authoritarian, laissez-faire, or neglectful methods, reduces the potential danger of impulsive or ego-centric maxims in work groups alike [30].

Tensions on the other hand dampen emotional ties, impacting trust and social behavior [31]. Different individuals have differing focuses inside this stage of Maslow’s theory, altering core competences, problem-solving methods and more [32] [33]. The stage of love and belonging is built on the principle of sending out and receiving affection to combat isolation, unhappiness, and knowledge retention. Exchange between individuals, independent from their position in the company can support the forming of sustainable emotional relationships, widening the horizon, both emotionally and knowledge related. Maslow went a step further and included the factor of “sociometric status” in his works, thereby expressing that the behavior of individuals is a result of higher-ups, in this case the decision-making individuals like managers, are a direct reflection of the tighter society around. Managers must act as role models, to ensure positive engagement between their peers and support a deep connection in-between individual towards the build-up of shared identity, rather than just efficiency-driven factors.

Skill sets severely depend on the development stage of this step of the pyramid. The behavior, feedback and support or lack of it influence the strategic decision-making of managers tremendously [34].

The factor of self-esteem is mainly defined by the internal integrity of every individual, meaning the ability to establish and defend achievable targets, based on the principle of searching for constructive strategies and thereby listening the wishes of oneself and not being directly dependent on the reassurance of others. Confidence is the most fitting characteristic trait, representing self-esteem. Managers must emphasize their efforts on the development of this trait to increase the development of personal strengths, motivation and ambition in their team as a whole.

These previously described levels represent the so-called deficiency needs, the lack of these result in devastating negative effects, prohibiting basic cooperation among individuals and locking out whole departments from innovative progression [35]. Innovation in that regard, plays a crucial role for the development and constant critical review of leadership methods [36]. The upper part of Maslow's pyramid is consisting of growth-based factors, often summarized by the so-called self-actualization. This process is never-ending, implying the constant development of someone's own character and thereby directing efforts towards the best use of individual strengths. The upcoming challenges of daily life help individuals to embrace possible solutions to new challenges and grow from negative happenings, rather than becoming emotionally unstable or manifested by regret. Questioning someone's own decision (on a healthy level), helps changing and fostering own core characteristic features and thereby resulting in the interest of helping society (altruism), long-lasting resilience and the cognitive skills to achieve both social success (creativity, morality, initiative) and broadening the emotional intelligence and other righteous principles like morality, dignity, creativity, and fairness, crucial for job performance [37].

While these steps sound valid and understandable on paper, it is crucial to point out, that managers carry high responsibility, to live out these principles mentioned above, to ensure the development of their employees [38] [39]. Negative role modelling results in consecutive build-up of negative characteristic traits of subsidiaries. In 1971, Maslow [40] extended his model by three levels. Self-transcendence became a step beyond self-actualization, while aesthetics and cognition are located below self-actualization. The model of Maslow, is often shown as a pyramid for illustration (see Fig. 1). In the lowest place are the physiological needs, the basic needs of the human body for air, food, drink, rest, sleep and sexuality. This is followed by the need for security. This includes the desire for protection, stability, structure and security. On the next level of need are social needs and bonds. These include the desire for group membership and sociability, for friendship and affection, and for a balanced working atmosphere. [16, p. S. 84]

The level above, are the cognitive needs. They focus on knowledge factors as further education, language and cultural classes, self-awareness programs etc. Next comes the need for aesthetics, which search for balance, form and beauty. Examples for this level can be fitness, body surgery, personalized diets etc. The second last level is the self-actualization level, which contains realization of personal potential and personal growth. The last level (transcendence needs) can be described as the need to help others to realize themselves. [41]

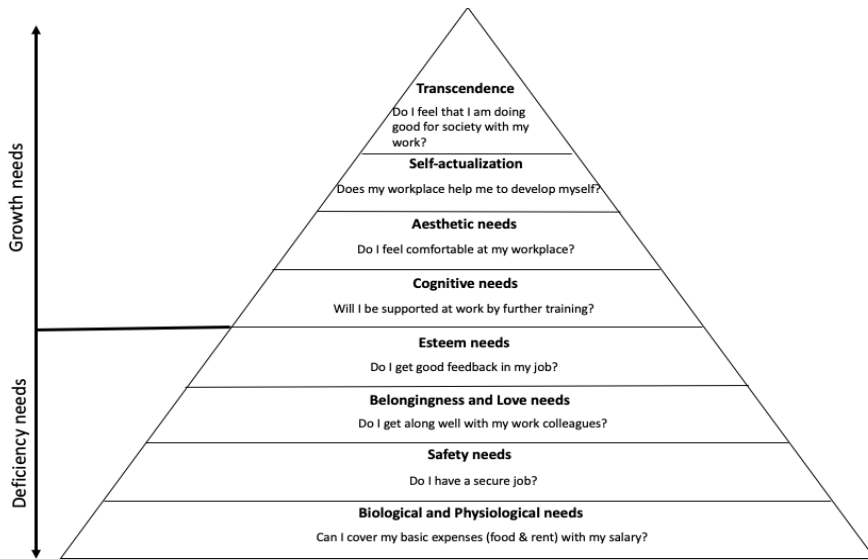


Figure 1

Adapted Maslow's hierarchy of needs for job satisfaction based on [42]

2 Methodology

An online survey was conducted and analyzed, to study the correlation of Maslow's hierarchy of needs and an individual's willingness to stay in a current job situation (see Appendix B). Based on Maslow's pyramid of needs (see Figure 1), each question of the survey was dedicated to one level and based on current findings, in updated models [19]. Various research studies have shown that the fuzzy logic theory is an excellent tool for conducting different econometric studies in the field of management [43] [44]. Consequently, the fuzzy-set of qualitative comparative analysis is applied to represent the level of needs. The fuzzy-set value of 1, expresses the full satisfaction of the need, while a value of 0, indicates the need is not fulfilled (see Appendix A). Representing Maslow's hierarchy of needs in fuzzy values enables the investigation of which level leads to willingness of and individual to stay at their job. The response options in Appendix B are structured

on a 6-point Likert scale, so that additional calibration according Ragin [45] is required. The maximum value of the Likert scale was transferred to a fuzzy value of 1, while the lowest value of the Likert scale was transferred to 0. The outcome was raised dichotomously. The truth table was created using the data results (see Table 1). This consists of eight columns for the fuzzy value of each need level according to Maslow's theory and one additional column for the result. For each of the 325 respondents the truth table has one row each.

Table 1
Truth table

C1	C2	C3	C4	C5	C6	C7	C8	Outcome
1	1	0	0	0	0	0	0	1
1	1	1	1	0	0	0	0	0
1	0	0	0	0	0	0	0	1
1	0	0	0	0	0	0	0	0
...								

Source: Author's own processing

Using fsQCA software 3.0 [46], the fuzzy set configuration approach, called fuzzy set quality comparison analysis, was used to analyze the survey. Using the results of the survey, a consistency index was calculated, resulting in a coverage score to measure how reliably a combination leads to a result. A high consistency value suggests a necessary condition for the outcome, while the coverage value indicates how often the condition for the outcome is present. The truth table algorithm is applied to check the sufficient condition and determine combinations of our fuzzy values that produce the desired outcome of the study (job satisfaction). All combinations of fuzzy values are included in the truth table, where each row represents one combination. In total, we have 256 possible combinations (2^k with k = number of Maslow's hierarchy of needs) [47]. Cases with very low frequency were intentionally excluded in line with a recommendation from the QCA literature [48]. The minimum acceptable frequency of cases was set at 4, and a lower frequency was not considered (see Appendix 1).

The truth table algorithm results in two consistency values. The raw consistency indicates how consistent the calculated combination is, while the second, the proportional reduction of inconsistency factor additionally eliminates the influence of cases on both the result and its complement [49]. Relying only on raw consistency and setting 0.8 as the cutoff (see Appendix 1), which limits the resulting combinations to reliable factors for willingness to change jobs [50].

The study employed a stratified random sampling method. This methodology was selected to ensure adequate representation of population subgroups [51]. Initially, the population was categorized into strata based on pertinent region within Germany. Random samples were subsequently drawn from each stratum, to acquire a representative dataset. This approach aimed to evenly distribute

participants across all regions, thereby encompassing diverse experiences and viewpoints.

3 Results

A sample of 325 participants in leadership positions was drawn based on the results using a survey (see Appendix B). The sample size meets the requirements for qualitative comparative analysis because the ratio of the variables to the sample size is less than 0.2 [52]. Since the respondents from the survey are the source of the exogenous and endogenous variables, which may lead to bias in the measurement results [32], Harman's single factor test was applied to load all items on a common factor. For this data set, the strongest single factor explained 32%, which is less than 50%. This suggests that the collected dataset was not impacted by the common method bias. Before examining the final results of the fsQCA, the descriptive analysis is reviewed.

Table 2
Demographic data

Gender in percent		Age in percent mean		Highest education in percent	
Male	46.5	< 21	0.5	Secondary school	1.5
Female	43.5	21 – 30	8.4	Grammar school	5.7
Other	0.0	31 – 40	31.4	Bachelor	29.2
		41 – 50	41.1	Master	46.1
		51 - 60	15.1	PhD	8.4
		> 60	3.5	Other	9.1

Source: Own processing

Table 2 shows the resulting demographic data. The majority of participants of this survey are characterized by an age range from 41 - 50 and a higher educational level (Bachelor, Master).

The results of the fsQCA in Table 3 show different hierarchy profiles associated with job satisfaction. The first profile, labeled the “survival managers”, only have the first two levels of “biological and physiological needs” and “safety needs” fulfilled. The second profile, named the “average manager” has all deficiency needs satisfied. The third profile, named the “academic manager in the land of milk and honey”, have most of all needs satisfied. The latter are furthermore characterized by critical intelligence, meaning they not only fulfill the levels of Maslow’s pyramid scheme, but also reflect their own actions and decisions through a bird’s eyes view [53]. The results are shown in Table 3.

Table 3
Profiles guiding willingness to stay at their job

Profile Maslow's hierarchy of needs [31]	Survival manager	Average manager	Academic manager in the land of milk and honey
Transcendence			•
Self-actualization			•
Aesthetic needs			•
Cognitive needs			•
Esteem needs		•	•
Belongingness and love needs		•	•
Safety needs	•	•	•
Biological and physiological needs	•	•	•
Frequency	8%	9%	7%
Raw consistency	0.82	0.80	0.48
Educational level	Average	Average	High

Source: Author's own processing

The raw consistency of the “survival manager” and the “average manager” in Table 3 is high (> 0.8), while the frequency is quite low (0.08; 0.09). This indicates that participants who are satisfied with their deficiency needs seem willing to stay at their jobs, although their growth needs according to Maslow's hierarchy of needs are not fulfilled. Looking on demographic data, the survival worker and average employees have a medium educational level and have an average age of 36.8 and 43.6 years.

Considering the profile of “the academic in the land of milk and honey” their raw consistency is quite low. This indicates that some of them are not willing to change their job while others willing to, although their growth needs are almost fulfilled. Adding the demographic data to the profile, their educational level is high, their average age is 33.5 years. We assume this profile can change their job due to their high education easier, also the job change increases the job satisfaction on a short time [54] [55].

Table 4
Truth table algorithm solution

Profile	Raw coverage	Unique coverage	Consistency	Solution coverage	Solution consistency
Survival worker	0.17	0.13	0.82	0.16	0.81
Average employee	0.12	0.09	0.80		

Source: Author's own processing

The results of the truth table algorithm in Table 4 offer two meaningful results. Firstly, fulfilling the conditions “biological and physiological needs” and “safety needs” to sufficient Level while still staying at the current job position is defined as the survival worker. This profile covers 0.17 with a consistency of 0.82. The second insight is the “average manager”, identified due to the sufficient conditions of the deficiency needs with a raw coverage of 0.12 and a consistency 0.80. Both together covers 0.16 of the solution and have a together consistency of 0.81.

4 Discussion

4.1 Theoretical Implications

According to Maslow’s 8th level pyramid, also called Maslow’s hierarchy of needs, managers tend to strive for satisfaction of their next higher level of need. In theory, satisfied participants, at least those who fulfilled some growth needs, should stay at their job, while participants on lower level of Maslow’s hierarchy, should tend to look for other jobs. The study’s results indicate the opposite direction.

Participants, who belong to the “survival manager” or the “average manager” classification, want to stay with their job due to the high consistency. Adding the factor of demographic data to the observation, individuals in this class have medium educational levels and they are middle aged. Job satisfaction increases with age, but also tends to decrease the longer they stay at a particular job. We can assume these profiles on middle aged individuals have reason not to change their job due to external reasons (e.g., locally binding, due to family or less focus on career), resulting in a U-shaped on job satisfaction linear model over time [56]. Also on long time basis, immobile workers earn the highest wage, giving an argument for them not to change their job [57].

The participants belonging to the “academic manager in the land of milk and honey” are not consistent on the outcome and share few characterizing traits. As mentioned in the introduction, Millennials tend to change their job more often, this demographic group is also present in this cluster. Inclining with the high educational level, it is safe to assume that this group has better chances for other jobs, which also positively affects the willingness to change the job. The study supports the wage models, in which early-career job change estimates to increase the average wage [57]. Insights indicate that factors outside of the framework proposed by the Maslow’s hierarchy of needs, are affecting the willingness of individuals to look for alternative job positions. Studies of the past indicate that the model of Maslow is not wrong per se, but through the decades of research,

more and more before overlooked factors need to be considered to critically evaluate the decision-making of individuals [53] [58] [59].

Recently, one model, developed further, more refined needs, wishes and dreams, based on psychological human nature [23]. Through increased detailing typology it attempted to figure out, why individuals tend to reconsider their current strategic behavior, that is also apparent in job change. Additionally, managers must keep in mind, that needs do change over time, resulting in dynamic environments, rather than the predefined and static framework, proposed by Maslow. Impacting factors can be as simple as increasing age, but also other shaping factors like experiences and social environments.

Similarly, to the factors mentioned above, changing job environment offer a plethora of downsides, Boswell [54] points out risks with changing the job for more satisfaction. The job satisfaction increases immediately after a job change (the honeymoon effect) but will lead by a decrease in job satisfaction (the hangover effect). This effect could come to bear here.

Taking a deeper look at satisfaction, it becomes evident, that the basic concept of fulfilling needs on a list is not sufficient [60]. The concept of leadership, in theory, aims to balance the most effective motivational methods with limited resources. However, the paradigm to solely focus on need fulfillment does not guarantee success, as past studies revealed, that overall motivation, being based on monetary, time- of inter-personal-related factors, is crucial on the individuals' performance [61] [62].

Additionally, the factor of change is often overlooked in adopted scenarios of Maslow's pyramid. Leadership, evaluating the results of the study, is the major impact factor, deciding the fulfillment of needs for any working employee. Adaptive leadership in particular, taking into account local financial, social and ethical parameters is the driving factor of employee satisfaction. Tackling growing unrest is a key objective of managerial positions, on any level, to ensure the long-term loyalty of employees. [21]

4.2 Practical Implications

Thinking of Maslow's 8th level pyramid, about most of the respondents completed being satisfied with the lower level before they aspire for the next level. The result supports Maslow's theory that basic needs must be met before growth needs can be targeted [16]. On the other hand, some are satisfied with different levels, independent from the pyramid system. This could indicate that Maslow's theory is blurred, further enhanced by the dichotomous survey fuzziness. Furthermore, results of the study point out, that self-transcendence, the latest addition of Maslow's theory, is essential to further integrate in modern leadership principles. Motivation of employees, adopting basic psychological concepts to better grasp culture, individual mindsets, religion and ethical thinking are so-far not fully

considered [63] [64]. Especially characteristic traits, described by models like the Big Five model, still reveal insights, as the scope of managers on traits like neuroticism hugely impact the daily satisfaction of individuals [65].

Self-transcendence revolves mainly around mindsets and their interaction with society. After all managers share a certain pool of skills, ideas and thinking unique to them to get into to get into the position of a decision-making in the first place [66] [67].

With the results of the truth table algorithm, it is assumed, that the first four levels of Maslow's hierarchy are sufficient conditions for people not willing to change their job with a high consistency. Contrary to the theory of Maslow, the willingness to change one's job can differ if the upper levels are fulfilled. Managers need to establish models to ensure that their daily behavior establishes a role model and understand that the well-being of peers is directly related to the need-fulfilling limits and potential of activities and responsibilities of the employees [23] [68] [69]. Human resource departments need to increase their efforts in observing and fostering a high motivation for leadership employees [70] [71], especially with increasing age, as missing incentives will cause highly competent managers, to quickly turn away from the current organization, in search for new, more lucrative possibilities.

Conclusion & Research Limitations

In this study, the satisfaction and willingness to change employment was investigated through a series of questions created, based on Maslow's hierarchy of needs. This study shows that the willingness to stay in a position depends on the individual. With the fuzzy-set, qualitative, comparative analysis, two profiles of people were identified, that are consistently not willing to change their jobs, although they are not fully satisfied on every level of Maslow's theory. In contrast, there is a profile type is content with most points of job satisfaction, but is willing to change the job. This profile is characterized by a "young age" and "higher education".

To answer the research question, there is no general hierarchy according Maslow's theory, where people are willing to stay in their job. Considering the results of the study, there are people with low satisfaction levels, not preferring to change the job, with a high consistency, while others with very high satisfaction, have low consistency when it comes on the willingness to stay on their job. Due to the inconsistency, it was determined that unknown factors, influence this profile. With the truth table algorithm, it must be acknowledged, that deficiency needs are very consistent, when it comes to the same outcome.

The study was completed for 325 people. The sample size fulfills the requirements for the fsQCA, nevertheless, the results can vary greatly with small deviations in this level of consistency. The survey was conducted with only one question per hierarchy level. To get a better view of job satisfaction, more questions ranging

the job for each level, should be performed in future research. Furthermore, only data from German individuals was gathered, limiting the results to insights purely in a Central European work environment and culture. This geographical and cultural limitation, suggests that the results may not be generalizable to work environments and cultures, in other parts of the world. It is crucial to understand that work cultures, organizational behaviors and employee attitudes can vary significantly across countries and regions, due to different socio-economic conditions, cultural norms and legal frameworks.

To improve the external validity and transferability of results, future research should include a broader and more representative sample that covers multiple countries and cultural contexts. This will allow researchers to compare the dynamics of work environments in different regions and identify both universal patterns and context-specific differences. There is also no additional subdivisions for the participants, meaning, people with part-time and full-time jobs, as well as temporary managers with temporary jobs were not differentiated. This lack of differentiation could lead to a simplistic understanding of the dynamics of the labor force. For example, the needs and challenges of part-time employees differ significantly from those of full-time employees. Similarly, temporary managers may have different responsibilities and pressures from the permanent manager positions.

Also, no specification of a specific sector (industry, NGO etc.) was done as this was a generic approach of an explorative topic, similar to previous studies [72].

This study points to other possible research directions. First, the distinction of the job type could be applied to different areas in order to have a closer examination of different groups of people. Second, the reason why people are willing to change their jobs should be also asked and evaluated. Future research should focus on social environment factors, such as social difference, cultural areas, beliefs, and career priorities.

Appendix

Appendix A
Truth table summary

C1	C2	C3	C4	C5	C6	C7	C8	Raw consis.	Cases
1	1	0	0	0	0	0	0	0.82	26
1	1	1	1	0	0	0	0	0.80	29
1	0	0	0	0	0	0	0	0.60	20
1	1	1	0	0	0	0	0	0.55	15
1	1	1	1	1	1	1	1	0.48	23
1	1	1	1	1	1	0	0	0.46	20
1	1	1	1	1	1	1	0	0.42	21

Source: Author's own processing

Appendix B
Survey

Question	6-point Likert scale (1 = I don't agree; 6 = I fully agree)					
	1	2	3	4	5	6
Do I feel that I am doing good for society with my work?						
Does my workplace help me to develop myself?						
Do I feel comfortable at my workplace?						
Will I be supported at work by further training?						
Do I get good feedback in my job?						
Do I get along well with my work colleagues?						
Do I have a secure job?						
Can I cover my basic expenses (food & rent) with my salary?						
Would I change my job if I had the opportunity?	yes			no		

Source: Author's own processing

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