

**University Of Veterinary Medicine Budapest
Department of Veterinary Forensics and Economics**



**Differences in salary demand according to age groups
and gender among veterinarians in Hungary and
Germany**

**Állatorvosok bérigényei közötti különbségek korcsoportok
és nemek szerint Magyarországon és Németországban**

Eva Sophie Schwarz

Supervisor:

Dr Marietta Máté, research fellow

University of Veterinary Medicine Budapest, Department of Veterinary Forensics and
Economics

Budapest

2023

Table of Contents

1. Introduction	2
2. Literature review.....	3
2.1. Employment and change of job fields in veterinary profession	3
2.1.1. United States of America and Canada.....	3
2.1.2. Hungary	4
2.1.3. Germany	4
2.1.4. Other European countries.....	6
2.2. Gender inequalities in veterinary job positions	7
2.3. Gender inequalities in salary demand	10
2.4. Veterinarians' starting salaries and their debt-related status	12
2.5. Salary variations among veterinarians	13
2.6. Influence of animal ownership on veterinarians' payment and satisfaction.....	15
2.7. Work-life-balance and work satisfaction in the veterinary profession	17
2.7.1. United States of America, Canada and Australia.....	17
2.7.2. European countries in general	19
2.7.3. Hungary	19
2.7.4. Germany	20
2.7.5. Other European countries.....	22
3. Materials and Methods	24
3.1. The development of the questionnaire and the way of conducting the survey	24
3.2. Analysis and processing of data.....	25
4. Results	26
4.1. General and sociodemographic characterisation of respondents by age group and gender.....	26
4.2. Veterinarians' attitudes towards their current job status by age group and gender... 34	
4.3. Veterinarians' future attitudes and expectations of their work by age group and gender.....	42
5. Discussion.....	47
6. Summary.....	51
7. Összefoglalás	52
8. References	53
9. Acknowledgements	57

1. Introduction

The veterinary profession has recently undergone a major change due to the gender shift balance, with women previously being in the minority, but 64.2% of practising veterinarians registered with the Royal College of Veterinary Surgeons (RCVS) were female (n=17,484) in 2021 [1–2]. Understanding the trends shaping the veterinary workforce is important to improve the profession [3]. The gender gap is significantly larger among younger age groups and career entrant veterinarians [4–5], but this disparity can be influenced by several other factors such as veterinarians' experience, number of working hours or location of practice (urban, suburban or rural area) [5].

The gender wage gap is still a problem in the veterinary fields. It is developing in the right direction and is slowly decreasing [6–19]. There have been more women in the veterinary field in the last years, despite that the men were earning more money and had more leading positions [17]. Reviewing the research about satisfaction and salary in the veterinary profession in different countries, it becomes obvious that there is change taking place. In Germany, a quarter of the veterinarians considered leaving the profession in 2018 [14] and over 23.1% stated that they wished to change the job position for a better chance for a good work life balance [16]. In Hungary females were less satisfied with their salary than their male counterparts [16, 20]. Tóth found that women preferred working in teams with pleasant colleagues while men preferred working independently [21]. Horváth et al. identified that men had higher priorities to earn a lot of money than women [20].

The salary expectations were higher and similar to the work life balance, they were weighed much more and also influenced the decision of the veterinary working field [16]. Hungary, Portugal and North Macedonia were the countries with the least satisfaction with their choice of career. Germany was also in the lower half of the enumeration about satisfaction [14]. The various veterinary working fields had different advantages. A positive work life balance, with appropriate salary and possibility for family planning were important factors that the veterinarians paid more attention to and were reasons to change jobs [16]. Many veterinary graduates were looking for fair job offers that were more likely to be found in non-curative working fields [16]. Most students planned to work in practices for Companion, Farm, Equine or Mixed Animal Medicine [17]. The job supply was large enough not to have issues finding a job and the search lasted on average only a few months [22]. Small Animal Medicine was still the largest work field in the veterinary profession [23–24]. In Germany, men placed a higher importance on salary than women [12]. The work

satisfaction was mostly in correlation with salary and colleagues [25]. The study from the Federation of Veterinarians of Europe (FVE) members showed that Hungarian veterinarians had one of the lowest salaries in Europe. The satisfaction of the Hungarian veterinarians was low which correlated with a high difference between the actual and the desired salary [14].

The results of this study are based on a questionnaire, which was used to analyse the answers of veterinarians from Hungary and Germany aiming to highlight important correlations found in these countries and to identify variations in salary, salary demand and satisfaction between age groups and genders. The thesis also seeks to answer the question of the preferences of age groups and genders and to what extent this might influence their decision to change jobs within the same profession or even to choose a different profession. It is important to focus on the challenges associated with job satisfaction in veterinary medicine and to see the level of happiness and satisfaction within the veterinary profession as well as the correlation with salary and job characteristics.

2. Literature review

2.1. Employment and change of job fields in veterinary profession

2.1.1. United States of America and Canada

In the United States of America, almost 60% of the working veterinarians or students were most interested in Companion Animal Medicine in 2018. Only 5% were working in Food Animal Medicine and a little less were working in Equine Medicine and in Mixed Animal Medicine [24]. The mean age of the veterinarians in the Laboratory Field between 1980 to 2005 was estimated at 45.3 years and almost half of them had the Doctor of Veterinary Medicine (DVM) degree and no further education. The demand for veterinarians of Laboratory field increased from 1980 to 1995 [22]. There was no challenge to find a job in that field after the education and the mean time to secure one was only 1.4 months. The study suggested that it was even easier between 1980 and 1989, and after that until 2005 they believed the change would be not noteworthy [22].

In Canada, between 2008 and 2013, almost all of the responding veterinarians (n=555) were working in employed positions and only 0.7% (n=5) of the veterinarians were unemployed. Most veterinarians already had an offer for a job before the end of their graduation and even more were employed since their graduation. Over half of the veterinarians in employed positions were working in Companion Animal Medicine [23]. One practice out of four was looking to hire new employees and there was no difference in the practice types or sizes. Those looking for new employees were mostly advertising by

“word-of-mouth”, approaching specific veterinarians and by the provincial veterinary association [26]. In 2013, almost 15% more students graduated from the veterinarian college than in 2008 [23]. In Western Canada, over half of the veterinarians had 2 or more employments since their graduation and 80% of the veterinarians stayed in Companion Animal Medicine. Veterinarians who were working in Small Animal Medicine had the highest hourly salary and the lowest working hours per week compared to the other working fields [27]. According to Tait et al., there were problems and changes in the job field. The struggle for practice owners was to find a way to manage all employees with their different beliefs and individual characters. Because of the job supply, employees were not afraid to lose or change jobs. The hierarchy was not obvious anymore, when help was needed it was expected, independent from the hierarchy. Also, new graduates wanted to make an impact in the world and practise their ideas and hopes. The employer had to adapt and be able to respect the requirements but also needed to find boundaries to get implemented [28].

2.1.2. Hungary

A European study from 2018 showed that there were 2,971 active working veterinarians in Hungary. Within this, 73% of the Hungarian veterinarians worked in full-time positions while only 18% worked part time. Half of them owned a private veterinary practice and 21% worked as employees in private veterinary practices. This study showed that in Hungary only 19% considered switching job positions within the veterinary profession, which was the lowest of all European countries, and only 13% of them considered leaving the veterinary profession, which was also the lowest amongst European countries [14].

In a Hungarian study from 2020, 51% of the respondents worked in Small Animal Medicine, 21% worked in Farm Animal Medicine, 11% worked in the public sector (e.g. Food Hygiene, Authority and Teaching), 9% of the participants worked in Equine Medicine and a little less than 8% worked in Pharmaceutical factories or companies [21]. Based on another Hungarian study, 75% (n=150) of the respondents were clinician veterinarians (including Small and Large Animal Medicine), 6.5% (n=13) worked in Teaching, Research or Laboratory field, 5.5% (n=11) worked in Authorities, 3.5% (n=7) worked in Pharmaceutical industry and 9.5% (n=19) worked in other veterinary fields [29].

2.1.3. Germany

A European study from 2018 stated that in Germany there were 41,000 active working veterinarians. The majority, with 33%, were employees for private veterinary practices and

31% were private veterinary practice owners. A quarter of them worked part time, while 71% worked full time. This study showed that 30% of the veterinarians considered switching within the veterinary sector and even 25% considered leaving the veterinary sector in 2018 [14].

In Germany, the median age of veterinarians working in non-curative jobs (n= 670) was 26.8 years for females and 27.6 years for males in 2018. At their university time, 85% of the veterinarians working in non-curative jobs, planned to work in curative. However, 20% of the students planning to work in non-curative positions, changed their opinion to curative work. At the end of their studies, 60% of the students aimed for working in curative jobs. Gender specific differences were not identified. More veterinarians between 40 and 60 years old wished to work in curative fields while studying in comparison to younger veterinarians [17]. Only 3% of the non-curative working veterinarians (n=670) worked over 10 hours a day on average and for 15% the average working hours per week exceeded 48 hours. The average working week was 5 days whilst 5% had an average of 7 days a week. Most non-curative job holders had a contract with flexible working hours or reliable working hours. Most working fields had unlimited working contracts, with the exception of jobs at the university which had limited contracts in 63% of the cases. In total, 80% of all veterinarians worked full-time whereas only 60% of the non-curative veterinarians worked full-time. Out of all non-curative veterinarians in this study (n=670), only 56% of the women worked full-time with 40 or more hours a week. However, there was a significant differentiation between mothers and women without children: 40% of mothers worked full-time while 70% of women without children worked full time. For men the information if they had children or not did not influence their working hours [17]. The study showed differences in the working hours in the different job fields and ages. Female veterinarians working in non-curative jobs between the age of 40 and 59 were the largest group working part-time. Only 16% of the male counterparts in this age category (n=670) worked part-time. After the age of 60 years, male veterinarians tended to work less, and female veterinarians tended to work more full-time again [17]. The working hours were lower in non-curative jobs than in the curative jobs in the veterinary field. The average working time of a part time non-curative working veterinarian was 26.1 hours a week whereas the part time curative working veterinarian worked 18.8 hours a week on average [17].

In Germany, full time veterinarians in the non-curative field worked on average 7 hours overtime, in 2018. Women worked less overtime than men. Overtime was compensated by free time in 60% of the cases and 22% did not get anything for their overtime. Only 4%

received payment for their overtime work and 14% got them partly paid. Jobs at universities did not get compensated for their overtime work in 49% of the cases. Working after 10 p.m. was unusual and work on weekends was required for around 50% of the veterinarians in non-curative jobs less than once a month [17]. Veterinarians in non-curative jobs had more holidays than those working in curative jobs. The average annual leave for non-curative jobs was 27.5 days. Employed practitioners had on average 23.8 days a year and self-employed practitioners had 19.3 holidays a year [17]. This study showed that the transfer from curative to a non-curative job happened on average after 4.8 years. Some veterinarians did not change completely but worked additionally in a non-curative job. A difference between genders was not observed. The decision to change jobs was influenced mostly by compatibility with family, working hours and salary. Working hours and salary were more important to female veterinarians than male. Different types of non-curative jobs had different factors that were important triggers for changing to a non-curative job position. Veterinarians working in Veterinary Authorities and in the Veterinary Industry prioritised their salary, while veterinarians working in the investigations office and universities prioritised their interest in the subjects. The term of the “dream job” was more fitting for veterinarians working at universities or in curative jobs [17]. According to Comba, over 23.1% out of the total respondents (n=1,033) stated that they wished to change to a different job position and a better chance for a positive work life balance and 14.4% of veterinarians had already changed their job in the past to have a better work life balance [16].

2.1.4. Other European countries

A study from Vienna claimed that there were more graduates than job positions. This concerned graduates who obtained their doctorate in the academic years 2001/02 and 2004/05. Around 50 to 60 graduates would be needed but there were more than 3 or 4 times as many [30]. Especially looking for a job in the curative work field was problematic. The low income after graduation could lead to side jobs in new different working fields. The unemployed time while looking for a job was two to three months long. There was also the option to own a practice, but this was unrealistic for young graduates. The purchase price and practical experience of at least two or three years were needed to successfully own a practice, and most new graduates did not have the chance to have sufficient capital and experience at this stage. Only 19% of male the veterinarians chose this option as their suitable way and only 6% of female veterinarians. The non-curative working fields were looking for employees, therefore, the job search was easier, more immediate and permanent

employment could be expected [30]. At the University of Veterinary Medicine Vienna, men tended to be more optimistic regarding their job options after their graduation than women [30]. In Austria, the most common way to find new job opportunities were by veterinary papers, the internet and the Veterinärmedizinische Kammer (Veterinary Association). Considering all graduates (n=87), 13% of them found their employment by sending out initiative applications [Putz et. al 2008]. Almost half of the new graduates in Vienna in 2000 and 2001 did not change their job and around a quarter changed their employment once [30].

In the UK in 2018, the median for staying at one job was 10 years and the median for changing the employer was 3 times [31]. More women were looking for new jobs than men. The numbers correlated with the amount of salary. Employees at higher salary jobs were less likely to look for new jobs. The more recent a veterinarian's degree was, the more likely they were to think about a new job, so the longer they had been in the same working place, the less likely they were to aim for a change [31]. The top reasons for veterinarians who planned to leave their position were work-life balance, management and salary. The main reasons to stay at a job were team, location and family. The most disliked part of veterinarian work was dealing with people, which included client complaints, unrealistic expectations of clients and negative feedback from the public. Following closely was the negative work life balance, caused by overtime working hours and poor physical and mental health [31]. Veterinarians were forced to accept employment to be able to pay off debts from their years of education. This could lead to an unsatisfactory situation regarding their income and their job position [24].

Summarising the data for European countries from 2015 and 2018 the veterinary profession was continuously growing. The majority of the European veterinarians were under 45 years old and 81% of them were working in full time positions. At the same time the unemployment rate was low and decreasing [14, 32]. Over half of the veterinarians were working in practices (58%), most of them in the Small Animal Medicine field. The average size of the practices was small and had less than 5 employees (70%). The trend was towards working in employment instead of self-employment [14].

2.2. Gender inequalities in veterinary job positions

Gender differences were present in the veterinary profession in the USA. Men were more likely to work in ownership positions than women. Women preferred to work as an employed veterinarian. They concentrated on small animal patients and they were more likely to treat exotic species [33]. More female veterinarians were aiming for less working

hours and for less compensation in comparison with men. However, the number of male veterinarians aiming for less hours was increasing. The majority of the American veterinarians wanted to work for 40-49 hours a week [24]. Small Animal Medicine was more appealing to women than the Large Animal Medicine, Food Hygiene or Industry work field, which could also be a reason for the salary differences between the gender [13]. In Western Canada, 80% of the practice owners were male veterinarians (n=1,636) [27]. There were also more male veterinarians working full time than females [26–27].

When looking at the gender inequality of European veterinarians it was possible to see an increase of female veterinarians in this profession (5% increase from 2015 to 2018) [14].

A study showed that the working environment and work life balance was equally important for both genders amongst Hungarian veterinarians in 2020. Women preferred to work in teams and have pleasant colleagues while men preferred to work independently or in a team with sufficient autonomy. Also, men held a higher value in earning outstanding amounts than women [21]. Another study in 2021 confirmed these findings, especially that men had a higher priority on earning a lot of money. However, the salary did not meet their expectations which might be a reason why the majority of veterinarians were women. This study also identified that many veterinarians believed that for Farm Animal Medicine male veterinarians would be more appropriate. Only 45% stated that women would be suitable for Bovine Medicine and only 51% said women would be suitable for Swine Medicine (n=371) [20].

Machin & Puhani found that the gender wage gap was larger in Germany than in the UK. They suggested this differentiation might be caused by the traditional views of Germany [6]. Comba identified that over 64% of employed veterinarians had a male boss and over 33% had a female boss (n=1,033). Comparing the overall satisfaction between the genders, they found that men were more satisfied than women, especially in areas like salary, development options and career chances. Men stated more often that their job was prioritised higher than their private life. Male students tended to have a clearer idea of their work life after graduation than female students. Regarding family friendly work options significant differences between genders could be identified. Only 9.2% of the men stated this as a priority, in comparison to 24.8% of the females (n=1,033) [16]. However, women were more likely to experience discrimination because of their gender (46.1%) than men (17%). Fear of discrimination in their working field was relevant for 40.2% of the female veterinarians and 18.4% of the male veterinarians [16]. The average working hours per week for non-curative working veterinarians were 36.6 hours for females and 40.1 hours for males. The

difference between men and women were obvious. For daily working hours, men worked 8 hours a day and women 7.5 hours a day. Especially among veterinarians with a child under 18 years olds there was a big gender difference in working hours: men with children were working on average 40.5 hours per week and mothers were working only 33.7 hours per week. Mothers worked only 7 hours a day, while fathers worked 7.9 hours a day [17].

There were more women than men in the Austrian veterinary profession, approximately 75% of the graduates were female in 2000-2001 (n=87) [30]. Most male veterinarians tended to stay longer than 12 months in their job, while less than half of the females stayed longer than 12 months. Over 70% of the women worked in part-time positions, while in comparison only around 40% of the men worked part time (n=87). Women often had a career stop to be able to start a family. Their return to the labour market after maternity leave was difficult and often failed [30].

In the UK, there were gender differences regarding the treatment of colleagues and their salary. Female veterinarians needed to endure more discrimination at their workplace than their male counterparts. This became tangible especially at moments when male veterinarians got appreciated, asked for advice and supported more. Those acknowledgements led to a higher work satisfaction and happiness. Their confidence grew and the probability to change their job position decreased. This showed that the gender differences in career ambitions were caused by the difference in treatment by their colleagues [34]. The survey asked for the perception of veterinarians, if they believed a gender difference was still a problem today. The respondents had split opinions. The older generation was more convinced that the gender differences were a problem of the past and 66% of the male veterinarians believed that the problem had been solved (n=260). At the same time, veterinarians believing in the equality of male and female veterinarians were the ones still contributing to the problem. They would have paid a male employee with the same skills and experiences a significantly higher amount of salary than the female counterpart [34]. Hansen et al. suggested women should own a practice. Female veterinarians tended to prefer flexibility and the compensation when owning a practice was more equal between genders [24].

A Mongolian study showed that over half of the employed veterinarians were working for a male employer and over 61% even preferred male employers (n=220). Many stereotypes were still present in the veterinary field. For example, the stereotype that men had an understanding of wider context or were better in making critical decisions. But an even larger group was convinced that women could do a good leadership job. They also

agreed that it was more difficult for women to get into senior management positions and that they got more criticised for being too soft or too hard. It was possible to see that these differences were more relevant in the age group under 39 years [35].

2.3. Gender inequalities in salary demand

There had been a significant development of the salaries between the years 1997 and 2003 with an increase in salaries in the USA, but males' salaries increased faster over the years than females', which led to a larger gender salary difference [8]. Approximately 80% of the American graduates were women in 2013. The gender inequalities already showed at their starting salaries, which were 16% lower for women than for men [11]. Between the years 1994 and 1995, there was a gender salary difference with an average of 15% in the USA. With added characteristics the salary difference lowered to 9%. It was proven that the productivity of females in comparison with male did not differ, hence the productivity was not in correlation with the earning gap in these years. Self-employed veterinarians also had an earning deficit, but in this case the gap could be explained by non-economic benefits. It was not proven that the age gap was caused by the employers prejudging the female work [7]. The comparison of the high earning jobs showed differences: 17% of men earned USD 100,000 per year compared to only 3% of the women, in addition 79% of women and only 45% of men earned less than USD 50,000 per year (n=514) [33]. Neill et al. found that the income was more unequal for veterinarians with less experience and more comparable for veterinarians with more experience in the job between the years 2016 and 2017 in the USA. Owning a practice led to an increase in yearly salary for men and it was more beneficial to have ownerships in the form of partnerships for women [36].

At the North Carolina State College of Veterinary Medicine in 2000, 2003, 2005 and 2009, first year students were part of a study about salary expectations (n=687). It showed differences by gender. The starting salary was equally expected by both genders and showed no gender differences. However, the differences started during their careers. Male students expected a higher salary when their career progressed than female students. A USD 100,000 salary was the highest amount many of the women expected. In comparison, 30% of the men expected to earn at least at this level within 10 years after graduation and 41% of men expected to earn this amount within 15 years after the graduation. Female students tended to expect less and 41% of them expected to achieve that salary range only at around 25 to 30 years after graduation (n=687) [9]. According to Quadlin et al. there was a change in the gender wage gap between the years 1960 and 2019. In earlier years, the larger gap was seen

in the lower paid employees, whereas in later years the gender wage gap was relevant in the higher paid working fields but higher education such as advanced degrees or different fields of study for women did not help against the gender wage gap [19]. In Bovine Medicine, the yearly income was higher for males than females. More working hours and higher experience were not the reason for this. Male practice owners paid themselves more in comparison to women practice owners [37]. In terms of salary differences between genders, veterinary workplaces with mostly female employees had a higher income gap than veterinary workplaces with mostly male employees. The field of Food Animal Medicine did not have a large wage gap in comparison to the field of Companion Animal Medicine [13]. Male students anticipated a higher percentage to own a practice than female students, representing a significant difference between the genders. Those who planned to own a practice expected a higher salary for both female and male. The students who expected to work in employed positions showed clear gender salary differences, with men expecting more than women [9]. Confidence was a potential factor in the topic of gender wage gap. However, in a self-report men tended to rate their competence not as high as women did. It was shown that the level of self-confidence was not significantly different between men and therefore women in the veterinary field, and probably not a relevant factor for the gender wage gap [38].

When looking at the gender wage gap in the veterinary profession of all European countries, the number decreased. In 2015, women earned 25% less than their male counterparts while in 2018, women earned only 12% less [14].

A Hungarian study from 2021 showed that half of the male veterinarians were satisfied with their income, while this was only the case for 28% of the female veterinarians (n=371) [20].

In Germany, female veterinarians who owned a practice earned 25% less per hour than male veterinarians owning a practice (n=1,930) [25]. In 2018, a study showed again that women working in the veterinary field earned less than men. For full-time working veterinarians the gender wage gap was 36%. The highest gender wage gap was seen in the Veterinary Industry working field and as self-employed practitioners [17].

In the UK, veterinarians were asked if they believed that men were paid more than women in 2011, and over 85% of the respondents answered "Yes" (n=294). Those veterinarians who believed the median salary was low, believed that there was a gender wage gap. In comparison those who believed in a high average salary in the veterinary field, were more convinced not to have a gender wage gap [10]. In Ireland, the gender salary gap was at

10% in clinical practice in 2019. The difference in salaries between genders increased with the years after qualification [18].

2.4. Veterinarians' starting salaries and their debt-related status

Four characteristics were the most important influencing factors for the variations of the starting salary: gender, self-employment, average household income of the area and the age of the graduating student. The difference in gender showed a lower income for female graduates in comparison to the male graduates in similar positions [39]. Higher starting salaries were reported for self-employed and for older graduates. The older age symbolised maturity and experience which could lead to higher starting salaries. A higher average household income of the area correlated with showed a higher starting salary and a lower average household income showed a lower starting salary [39]. The practice types also influenced the starting salaries. Further education after graduating influenced the starting salary negatively as a result of working fewer hours [39].

The inflation led to an increase in living expenses but the starting salaries for young veterinarians decreased in the same period in the USA [11]. American veterinarians had more problems as newly graduates to pay off loans than the veterinarians who graduated prior to 1995. They were able to pay off their debt within around 10 years, while the number of those who were able to pay off their debts in this time period decreased for veterinarians who graduated later than 1995. Only 16% of the veterinarians had been able to pay off their loans since their graduation in 2006 [24].

In Canada, the starting salary improved by 5% in one year from 2001 to 2002. The starting contracts included a result-based formula for over a third of the newly graduates. One fourth got paid overtime or were granted compensatory time off. Some Mixed Animal Medicine practices granted formulated bonuses for employment over a specific time in the practice. Paid sick time was also one of the most usual benefits. Almost all of them had a written employment contract [28].

In a Hungarian study in 2020, the veterinarians (n=72) believed that a newly starting veterinarian could ask for a salary between HUF 200,000 and HUF 250,000 net in the Small Animal Medicine field. For other categories (Farm Animal, Equine and Mixed Animal Medicine), a significant proportion of respondents did not have any information on salaries that could be asked for as a new veterinarian [40].

2.5. Salary variations among veterinarians

There were opportunities to improve income in the Bovine Medicine, and there were also several conditions that could not be influenced in the USA. The biggest impact had been the years of experience, number of animals treated, the working hours per week and practice ownership [37]. Pursuing additional education had less impact on the salary in the USA. The highest earning veterinarians had around 27 years of experience. This was corresponding with their more successful and productive work based on their experience. Longer working hours did not always lead to higher earnings because of the self-limiting factors, like longer travel times and overworked behaviour with inefficiency [37]. A study showed an improvement for the field of Shelter Medicine between the years from 2011 to 2018 in the USA. The salary increased overall but the paid vacation time was common in 2018 and it decreased since 2011. All duties of a shelter veterinarian increased in occurrence, only the euthanasia decreased by almost 20%. The paid education expenses of these years increased very drastically [41].

The veterinarian salary increased from 2016 to 2017 in the USA. More veterinarians in 2017 had a salary of USD 80,000 than in the year before. In addition, the number of veterinarians who earned less than USD 80,000 decreased. The income depended on the years of experience since graduation and the working field. The mean salary was larger for graduates between the years 1969 and 1980 and decreased towards the more recent years. Additional degrees and higher education had no significant importance for the salary, but a board certification had a positive influence on the income. Veterinarians who were working as a researcher or had manager positions earned the most. On the other hand, clinicians earned the lowest salary (n=2,780) [24]. Based on a study focused on Bovine practitioners and the factors that influenced their salary, it became clear that the population of the animals treated had a significant influence on the success, whereas the number of clients did not. It was found that additional education had only a minor impact on the salary. It was more important to focus on gaining experience [37]. Veterinary medicine was one of the highest forms of education which came with a high price. There was a high debt-to-income ratio and years of working in low wage jobs led to financial instability. Academic residencies and internships only offered salaries that were significantly lower than those in private practices [42]. Another study showed that the salary was influenced by practice ownership, gender, community size, mean household income in the area and employee development. They could be categorized by demographic, environmental and business practices. The income of an

individual veterinarian depended on the working hours per week and the working weeks per year. The treated species did not have a significant influence on the salary [8]. The veterinary profession was influenced by the market. It depended on the demand which is the correlation between the price in salary and the quantity in veterinary applicants. If more new veterinarians wanted to start their career, the salary decreased [43]. In Canada, there was no change in salary for full-time working veterinarians in the years between 2011 and 2013. The salary was influenced by geographic location, but gender and institution of graduation had no significant influence [23].

A European study from 2018 stated that the average salary for veterinarians was EUR 39,803 per year. The highest income was seen in the countries Switzerland and Netherland. The lowest income was in North Macedonia and Bulgaria. In comparison to 2015, the average income increased in Europe by around EUR 500 per year. The lowest salary was paid in private clinical practices and the highest salary could be seen in consultancy jobs. Practice sizes also influenced the earnings. Veterinarians working in practices with over 3 employees earned the most (EUR 58,000) while those working in practices with only two veterinarians received the lowest salary (EUR 37,000). The age also influenced the salary. Veterinarians over 60 years old earned the most while veterinarians under 39 years old earned less [14].

In Hungary, a study in 2020 showed that the veterinarians believed that a salary of below net HUF 200,000 a month would be appropriate for a beginner veterinarian with minimal experience. A higher experienced, self-employed veterinarian was believed to earn HUF 300,000 a month in net or more [40]. This study also looked at the different regions and salaries. Out of the total responses (n=128), 31.3% of the respondents believed the best earning potential in Food Animal Medicine was in Western Transdanubia. The second most chosen area was Central Transdanubia. For Small Animal Medicine, 55.2% out of the total responding veterinarians (n=134) believed that Budapest was the best region (n=74), the next best region was Central Hungary with 23.1% and Western Transdanubia with 13.4%. For Equine practises the best opportunities were believed to be in Central Hungary with 27.1% and Western Transdanubia with 13.2%. For Mixed Animal practices, 20.3% believed to have the highest earnings in Transdanubia and 14.8% believed this to be the case in Central Hungary [40]. The study also looked at the believed amount a veterinarian could charge for one hour working on-call duty. For Small Animal practice, 51 participants believed that they could charge HUF 1,000-5,000 net hourly, another 43 participants believed between HUF 5,000-10,000 net per hours would be appropriate. In Equine practice most of them answered

that a rate of over HUF 10,000 hourly net would be appropriate. For Poultry the chosen range was between HUF 5,000-10,000 net hourly [40]. Another study in 2020 showed that Generation X (born between 1965 and 1980) was more represented at the higher end of the salary range than the others. There was a peak for all generations at the salary category of HUF 300,001-450,000 for 40 hours of work per week [29]. Over 80% of the veterinarians in this study were strongly satisfied or satisfied with their current earnings but chose a higher salary when talking about appropriate salary for their job field [29].

German veterinarians who owned a practice earned more than employed veterinarians. The salary of self-employed veterinarians varied more than of the employed ones [25]. A study showed that non-curative veterinarians earned EUR 31.41 gross per hour for 40 hours a week in 2018. The highest earning job field was the industry field with EUR 42.11 gross per hour. Veterinarians working in non-curative jobs had a higher salary than the veterinary practitioners. They only had an hourly wage of EUR 18.65 in gross on average (n=670) [17]. The salary increased, the more experience the veterinarian had. The hourly wage for inexperienced veterinarians was on average EUR 21.87. Between 4-8 years of experience led to an average hourly wage of EUR 27.34, and veterinarians with 9-18 years of experience earned an average hourly wage of EUR 32.81. The highest hourly wage was seen for veterinarians with experience of over 19 years with EUR 39.16 [17].

In the UK, veterinarians estimated their salary to be positioned slightly above the average of the actual annual salary in the veterinary profession in 2011. The estimated amount (USD 26,455) was closer to the average male full time working veterinarian, which was USD 27,600 than to that of women with USD 22,200, but it suggested a good awareness of the current job market in the veterinary field [10].

2.6. Influence of animal ownership on veterinarians' payment and satisfaction

Veterinarians believed the most important skills were communication with clients, medical skills, management, surgical skills and stress management [33]. Pet owners spent a lot of money on accessories for their animals, but the amount that they were willing to spend on the animals' healthcare decreased [11]. The FVE stated that the annual average expenses of the European countries for pet food was EUR 14 billion in 2015. The annual average expenses for pet related products were at EUR 11 billion. In comparison only EUR 5 billion were spent annually for Companion Animal Medicine [14].

In Norway, owners with an insured pet got more expensive treatments because of the partially covered expenses by the insurance company. They felt that insured pets sometimes received unnecessary treatment because of the easy money-making opportunity. This might have been one of the reasons why insurance got more expensive. It was also caused by the increased insurance cost among pet populations and higher costs on resources [44]. Price estimates were good possibilities to foresee the approximate costs of a treatment but could also lead to problems. Unforeseen complications and events could quickly make a procedure more expensive and those unexpected costs could create dissatisfaction [44]. Veterinarians could suffer under this price debate. They often stood between proper treatment and the pet owner who was not willing to pay the cost. The veterinarians wanted to help animals but customers refused treatment, as a result of which veterinarians had to make decisions against their personal values and beliefs [44]. During a veterinarian visit, the customers weighted the communication skills, the respect towards the pet and owner and the value of their pet as their most important aspects [44]. The veterinarian service, which was fixing the problem, was not mentioned by the customers. They wished for a stress-free environment, an informative and serious conversation and proper examination and explanation. The veterinarians' point of view suggested that the customers wanted an attentive, good listener and problem solver, who was available for their concerns. In order to establish a good reputation, a high customer satisfaction was required. By having good relationships, loyal and trusting customers could be expected. Close relationships might, however, result in less privacy of the veterinarians who might get approached in private situations outside of working hours. Sometimes owners' expectations could not be fulfilled because of their missing knowledge and wrong estimation of the situation. They expected treatment and recovery options that were not possible. This problem could be solved by a clear communication about treatment options [44].

Customers might use several platforms on the internet (e.g. Google, forums, groups) to develop their own diagnosis making it difficult for the veterinarian to explain their point of view. Some might even have needed to defend themselves against wrong accusations. This could be a critical point for the owner as well because they did not trust the veterinarian to find a solution or hoped for less costs and tests that were needed to find the diagnosis. The customers were the most satisfied when their emotionally vulnerable position was respected and understood. The pet was often seen as part of their family and a happy and stress-free animal might influence the owner's opinion about the veterinarian [44]. On the other hand, dissatisfaction would be intensified if a negative emotional position played an important

role, like a death of an animal, connected to unsatisfied veterinary behaviour. The veterinarians got less blame for the treatment and recovery if the overall experience was satisfactory. By admitting to weaknesses or specialised areas, the veterinarian could become more trustworthy. As a veterinarian, it was important to have good skills in calm communication as well as self-confidence [44].

The management might have influenced the owner's experience by pressuring the effectiveness of the veterinarians work in clinics. This could have led to an assembly line feeling. The more customers were treated in a day per veterinarian the less time with the single patients would be available. This rush led to less communication, attention and patience towards the owners followed by negative experiences and less customer satisfaction. It was important not to prioritise profit above animal welfare. Management over-focusing income could have problems with burned out employees [44]. Situations could get more difficult if the customers' behaviour changed to ignorance and non-willingness to pay for important procedures. This led to frustration of veterinarians. The expectations of the customers were very high and caused a lot of stress so that many veterinarians changed their career path. The universities did not cover this aspect of the profession, but veterinary graduates needed to learn how to deal with this kind of stress quickly. Animals were only the third most important part of their job. The consumer expectations came first, and the economic issues were the second. Personal stressors like shyness or being introverted might have made the veterinary profession even more difficult [44].

2.7. Work-life-balance and work satisfaction in the veterinary profession

2.7.1. United States of America, Canada and Australia

In the USA, veterinarians' satisfaction with their job was partly associated with restoring the animals' health and partly with connecting with clients. The part leading to dissatisfaction was the poor financial situation, the time commitment and the financial constraints of clients. Veterinarians were struggling most with inadequate pay, negative work-life balance, staff changes and relationships with clients [33]. Most of the graduated American veterinarians would become a veterinarian again if they had to choose (n=504). Later after graduation, they became slightly more unsure. The non-practitioners had reviewed their decision of becoming a veterinarian more (n=514) [33]. Among them, the majority wanted to work fewer hours. This desire increased, the longer their graduation had

passed [24]. The suicide rate of veterinarians was higher than of the general population, and especially the male veterinarians had a higher risk. Over the age of 65 years the risk of suicide decreased [45]. Important categories for the topic of suicide and stress were psychological, social and biological stressors, that stood in interaction with each other [46]. For biological factors, gender and age could influence the stress level in the job. Female veterinarians struggled more with stress and burnouts than male veterinarians [47].

Data from the years between 2016 and 2020 showed that burnout costs were high in the USA. The turnover costs consisted of the potential income that was lost because of their sick-leave and additionally the replacement costs. The highest costs in case of a burnout per American veterinarian were seen in the Food Animal Medicine, and the lowest cost of burnout per veterinarian applied to Equine veterinarians. However, the highest burnout costs were coming from Small Animal Medicine and Mixed Animal Medicine [48]. The percentage of veterinarians who had no job and were unemployed in the profession decreased over the four years from 2016 to 2020 (n=2,780), but the unemployed period did not change. Over these years more veterinarians moved to working fewer hours for less compensation. The rate of veterinarians preferring to work more hours for more compensation was decreasing. It was possible to see a difference between women and men regarding this decision. Female veterinarians tended to prefer working for fewer hours for less compensation. Males were feeling similar but a few more tended to work more hours for more compensation and a few less male than female wanted to work less hours for less compensation. For all veterinarians aiming for fewer hours, their optimal weekly hours were less than 40. Most veterinarians wished to work between 40 to 49 hours a week. In clinical working fields and research, veterinarians also wanted to work less hours. Underemployment was observed in industry and commercial fields, internships and residencies and not-for-profit organisations [24].

In Canada between the years 2008 and 2013, most veterinarians were happy with their job position and only small percentages were not satisfied. From the entire sample (n=477), 90,1 % of the respondents considered that the continuing education allowance was the most offered benefit in the veterinarian jobs, followed by paid provincial licensing fees with 75.8 % [23].

According to an Australian study (n=881), men were more likely to leave their clinical practice compared to female veterinarians between the years 2019 and 2020. In rural regions, veterinarians were less likely to leave than in metropolitan regions. There were no differences between the working fields in practice like companion animals, horses or food-

producing animals. Having on-call duties had a significant impact and those veterinarians affected were 10 times more likely to change jobs (n=881). Also, longer working hours and low salaries had an important impact [49]. Personal factors and work experience were in close relationship with each other when considering the decisions to leave practice. The personal factors could be separated into subtypes which were: alternative interests, beliefs, negative thoughts, mental health, time management for personal relationships. The work experience could also be separated into subtypes, which were: moral and ethical conflicts, pay and remuneration, safety, workload, relationships with colleagues and clients, toxic work environment. The decision to leave clinical practice depended on a combination of personal factors and work experience [50].

2.7.2. European countries in general

A European study from 2018 showed that veterinarians were the most satisfied with the veterinary profession in Latvia (8.5 points), Russia (8.2 points) and Denmark (8.0 points) (where the 0 = “complete dissatisfaction” and 10 = “complete satisfaction”). Hungary (6.3 points) was with Portugal (6.1 points) and North Macedonia (5.8 points) one of the countries with the lowest satisfaction with their choice of career. Germany was also in the lower half of the enumeration about satisfaction. When looking at the salary satisfaction on a scale from 0 to 10, where 0 meant “complete dissatisfaction” and 10 meant “complete satisfaction”, Germany (5.4 points) was above the European average (5.3 points) and Hungary was even more satisfied (5.9 points) with their salary. Germany had a relatively good satisfaction when looking at the business environment (6.9 points) whereas Hungary (5.7 points) was below the European average (6.4 points). For the question about the likelihood of choosing the veterinary profession again, Germany had low results and was below the European average (6.5 points) with only 5.5 points. Hungary was more likely to choose this profession again with an average of 6.8 points [14].

2.7.3. Hungary

In a study from 2020, 65.4% of the respondents did not have on-call duties. A few of those who got on-call duties got one day off or a surcharge. Most respondents who did not yet work on-call duties would do it for a charge of HUF 5,000 net hourly rate. There was a significant correlation of increased salary demand for on-call duties [40]. Another study in 2020 showed that a positive work-life balance was the most important aspect for the Hungarian veterinarians. Outstanding earnings was the lowest rated category. This confirmed that a work-life balance is prioritised over the money [21]. A study in 2021

showed that only 26% of women and 51% of men were satisfied with their possibility to start a family while working in the veterinary profession [20]. Another Hungarian study in 2020 showed that the majority of the veterinarians (n=134) worked between 31 and 50 hours per week. Employees working over 41 hours (n=34) mostly belonged to generation Y (born between 1980 and 1996). Managers were mostly generation X and 43% of generation Y worked in Budapest [29]. A study in Hungary from 2022 showed that one main factor for suicidal tendencies among veterinarians were work related stressors like the clients' expectation to diagnose immediately and anxiety due to conscientiousness and punctuality. The factor of emotional impact of tasks like performing euthanasia was not influencing the suicidal tendencies for the average veterinarian, however, the older participants (over 54-year-olds) tended to feel a higher emotional impact in this context. From the entire sample (n=719), 22.4% of the women (n=640) were likely to seek professional counselling while only 9.1% of the men (n=79) would do so. More veterinarians in older generations were able to take care of their mental health than the younger veterinarians in this study [51].

2.7.4. Germany

A study from Germany showed (n=1,930) that the work satisfaction was in high correlation with a "good working atmosphere" in 2016, which also included their colleagues [25]. There were not enough young colleagues and around 12 % were not working in the veterinary field and have left the profession. Psychological illnesses were reported at higher numbers. Men saw more importance in their salary level in order to achieve a higher satisfaction than women. For women a good working atmosphere and family friendly arrangements were more important (n=1,930) [25]. An adapted salary and better work conditions improved the work life satisfaction, and a higher satisfaction ensured a better performance [25]. Work satisfaction mostly correlated with income or colleagues. Life satisfaction was mostly in correlation with family and health [12]. This study found that veterinarians working in practices were more satisfied with their working hours than in clinics. It also showed that the working hours were less in practices in comparison to clinics. Especially veterinarians in Equine Medicine had long working hours. Mothers tended to work less hours than fathers. A median number for having paid off days was 25 days in one year for full time working assistance veterinarians. Owning a practice led to having less free days, in this case the median was 20 days a year [25]. Especially important was the fact that almost half of the questioned veterinarians in Germany worked longer than 10 hours daily

and/or 48 hours weekly (n=1,930). These working hours represented the legal maximum working time and should not be extended [25].

This study showed that there was a correlation between satisfaction with their work and their working hours. More working hours per week led to a reduced satisfaction in the categories of job and work hours and veterinarians earning less showed a stronger dissatisfaction with their salary than with their job. The satisfaction improved with an increasing salary. Most of the participants believed that for them there was a correlation between work satisfaction and life satisfaction. Almost a third of them would not choose this job again (n=1,930). Since 2006 the working hours of veterinarians had decreased but their salaries had increased [25]. Veterinarians who owned a practice earned more money than other academics working self-employed. But in employed positions, veterinarians earned less than similar levels of academics. When comparing the satisfaction of different aspects of life, it became obvious that employed veterinarians were less satisfied. But they were happier with their overall health and living situation than the other academics at similar levels. Female veterinarians who owned a practice showed much more dissatisfaction in many aspects of their life than other female academics (n=1,930) [25].

In 2018, Ewert found that 88 % would choose their job again and even 80 % would choose the same veterinary working field (n=670). But when considering choosing the studies again, they were more hesitant, with only 59%. There was no difference in gender for these statements [17]. For non-curative working veterinarians it was most important to have a good working environment. For women, communication, fair salary and self-responsive work were also important. For men, self-responsive work, fair salary and varied tasks were the other most important factors. Veterinarians in leading positions were 69% male and 49% female (n=670). Female veterinarians working in leading positions were not as confident and satisfied with their position as their male counterparts [17]. Veterinarians in non-curative jobs were overall satisfied with their work. No difference in gender was identified. Practitioner veterinarians were in almost all areas less satisfied and only more satisfied regarding their colleagues. However, the non-curative working veterinarians were still less satisfied than people in other academic jobs. Self-employed practitioners were more satisfied with their opportunities for development than the employed practitioners (n=670) [17]. Work satisfaction and the salary rate were in correlation. At a higher salary the satisfaction did not increase anymore or even decreased slightly. The satisfaction only increased for veterinarians with a salary up to EUR 54,100 gross salary a year. To the statement, that when reliving life, they would not change much, the veterinarians reacted

neutrally, and they did not agree to a statement saying that they achieved their life goals (n=670) [17].

Comba et al. found that a quarter of the veterinarians stated to not feel appreciated by their boss. There was a correlation between the feeling of appreciation and satisfaction in the job (n=1,033) [16]. In the age of under 35 and over 45, the discrimination of gender was around 44%. For veterinarians over 45 years old the discrimination was lower with 33.9% (n=1,033). Men at the age of over 45 years had the lowest discrimination rate. People working in employed positions experienced more discrimination than self-employed veterinarians. Over 67% agreed to the statement that women were more sensitive than men. Over 68% agreed that women were more self-sacrificing than men. Almost a quarter of them agreed that male veterinarians were more suitable for farm animal practice than women. Discrimination had a major influence on satisfaction (n=1,033) [16].

2.7.5. Other European countries

A study of the FVE looked at the numbers of all European countries. The satisfaction with their education and how prepared they felt for their job was only neutral. The satisfaction with the job seemed relatively low. Only 60% of the European veterinarians would choose this profession again. A reason could be stress and mental exhaustion. They rated their stress level on a scale of 1 to 10 as 7 points, and 26% had even taken more than 2 weeks off work to recover from depression, burnout or similar psychological stress [14].

In Austria, one of the biggest stressors in veterinary medicine was the social interaction with, for example, animal handlers [52]. In 2008, almost all veterinarians (n=87) chose this job because of their interest in this subject and a very large number described the veterinary job as their vocation. Almost none of them stated the influence of their parents as a reason to start veterinary studies. The financial interest was only important to around 15% [30]. Veterinarians had a tendency to overtax themselves regarding salary expectations and in relation to working hours. That was especially prominent in the curative working fields. The motivation for this job was often to help and treat animals, but when having to implement cost efficiency measures the frustration increased. Especially young veterinarians tended to overlook their needs regarding their salary satisfaction and priorities [30]. There was a big difference in satisfaction between the curative and non-curative jobs. These fields differed especially in their working conditions. Working hours were changed more often in the curative working field and shifts were typical. In clinics late night-, weekend- and emergency services were required. The non-curative working condition showed more stability in

working hours [Putz et. al 2008]. In Austria, around 91% of veterinarians were satisfied with their job activities, their employment and their colleagues. Only half of them were happy with their salary, work-life balance and career options (n=87). There was a difference in gender in the field of job security. The most negative impact was the irregularity of working hours, the daily rush as well as long working hours and overtime. The daily rush was more a concern of the men and the missing support more a concern of the females [Putz et. al 2008]. Only 36% of the graduated students from University of Veterinary Medicine Vienna (n=87) would recommend the veterinary studies to others whereas 76% of men and 68 % of women would choose to study veterinary medicine again (n=87) [30].

In the University of Veterinary Medicine Vienna, the interest in curative fields was the highest. Most students only realised the problems of this field after their graduation. A quarter of the students believed in good career chances. Almost all students wished to study veterinary medicine and had it as their first university choice [30]. The young graduates had barely practical experience, and this was the reason why they were not seen as fully finished veterinarians in the work fields. Because of their low experience level, they might get routine tasks, would not improve their skills and could not change their market level when looking for a new job as a result [30].

There was a significant relationship between the salary and the work satisfaction in the UK. Most of the veterinarians who earned around the upper end of the salary range were quite or extremely satisfied with the job. In comparison though the veterinarians earning less money showed all ranges of satisfaction and dissatisfaction. In 2016 and 2017, the veterinarians working for an average salary had an average satisfaction towards their job and those earning the most had a high satisfaction. Overall, half of the veterinarians were very satisfied and over 75% were satisfied (n=2,780) [24]. Looking at stress and burnout factors in the UK, it was found that between the years 2015 and 2017, the employment and preparation for their job had a significant influence. The number of working hours per week led to a higher likelihood of burnout and traumatic stress. Females tended to be more likely to burn out or have traumatic stress. Young veterinarians who graduated in the last 10 years had the highest burnout risk. The risk decreased by the number of years since graduation. The job with the lowest burnout risk was to work in uniformed services (n=2,780) [24].

In Ireland, 32.8% were likely to leave the profession and 55.3% were not likely to leave their profession in 2019 (n=2,596). Less than half of the veterinarians were satisfied with the work-life balance they were experiencing, but 59 % were unhappy with their work-life

balance. Even though the study suggested a higher stress level in female veterinarians, they tended to seek help [53].

3. Materials and Methods

3.1. The development of the questionnaire and the way of conducting the survey

After working through articles about these topics, the direction of the questionnaire became clearer. It was important to gain enough background information to be able to find influencing factors, but at the same time it was important to maintain their anonymity. With the help of the articles, it was possible to gain estimated amounts that can be used for answer options. The draft was developed in English and revised multiple times, to be sure of the completeness.

The finalised questionnaire got sent out to Hungarian and German veterinarians. The survey was adapted to the country. The questions for the estimated salary amounts for the gross salary income and demand for income, living areas, and further job advantages varied slightly regarding their answer options. The survey was sent in a link with a short description of the topic and purpose of this study. It gave information about the estimated time for processing the questionnaire and the anonymity of the collected data. The questionnaire was designed with Google Forms.

The questionnaire in Hungary was shared in the “Állatorvosok-Vets” and “Hungarovet” Facebook groups and sent out to the “Vetmail” veterinary professional mailing list. In Germany, the questionnaire was shared in a Facebook-Vet group “TierärztInnen unter sich :)” and via email to individuals.

The questionnaire was opened on 2nd of October 2022 and closed on the 8th of October 2023. It consisted of 39 questions and was estimated to take 10 minutes to be answered. Of the 39 questions, 32 were “Closed-questions”, 4 were “Semi-closed questions” (including 32 single-choice questions and 4 multiple-choice questions) and 3 were “Open-ended questions”. The first 5 questions were about background information. Their age, gender, children, population of their place of residencies, living area. The next questions 6 to 12 were more detailed about their work as a veterinarian. Their working field, experience, position as employer or employee, working hours, starting salary, gross monthly salary, and wished salary. The questions 13 to 19 were statements that needed to be agreed or disagreed to. The Likert-scale had 5 options from strongly disagree to strongly agree, with 1 = strongly

disagree, 2 = disagree, 3 = undecided, 4 = agree, 5 =strongly agree. The statements covered work and salary satisfaction. Questions 20 to 25 provided answer options. These questions inquired about their benefits and advantages and disadvantages of their job. Question 26 to 34 were again statements that got answered with the Likert-scale from 1 = strongly disagree to 5 = strongly agree. Those statements focused on the priorities when looking for a job. Question 35 to 38 asked about future plans and changes the veterinarians would make. The last question number 39 was a space for further commentary of veterinarians. The questions are all around the salary, life and work satisfaction and priorities in a job.

3.2. Analysis and processing of data

Depending on the type of question, different methods were used to analyse the data. Data processing included the qualitative analysis of “Semi-closed questions” and “Open-ended questions” with the possibility of individual responses offered with free text boxes. These responses were analysed qualitatively in terms of the content of the responses, categorised using key terms, and then mapped and interpreted according to the corresponding topics. Many individual comments could be assigned to more than one topic, but nevertheless the most frequently mentioned topics are presented in this study. All data were checked and those that were unclear in content and meaning were excluded from the evaluation. Because of these exclusions and the different response profiles, the sample element numbers for some questions are different.

Responses from the questionnaire were analysed using Microsoft Excel. The percentages were calculated for all questions, and the mean (M) and the standard deviation (SD) was found for the five-scale Likert questions. Statistical analyses were performed in R version 4.2.1 [54]. The categorical variables were analysed using Pearson’s chi-square (χ^2) test to see how significantly the results differed between countries (Hungary and Germany), the age groups (23-34 years, 35-54 years and over 54 years) and genders (males and females) amongst Hungarian veterinarians. Two-sided test was used, where the row variables were the countries, age groups and genders, and the column variables were the questions assessing the differences between countries and factors associated with salary demand. The overall level of statistical significance was defined as $p < 0.05$.

4. Results

4.1. General and sociodemographic characterisation of respondents by age group and gender

Altogether 282 veterinarians participated in the online questionnaire with the majority of respondents working in Hungary (n=203, 72.0%) followed by Germany (n=79, 28.0%). The 1st question was about the gender of the participant. Of all respondents, 67.4% were females (n= 190) and 32.6% were males (n=92). From the total Hungarian veterinarians, 58.1% were females (n=118) and 41.9% were males (n=85). In the German questionnaire, 91.1% were females (n=72) and 8.9% were males (n=7). The 2nd question inquired about the age. The majority of respondents were in the age group 23-34 years (n= 134, 48.6%), followed by age group 35-54 years (n=109, 38.7%), and then age group over 54 year (n=36, 12.8%). The Hungarian questionnaire was answered by 43.8% of veterinarians who were 23-43 years old (n=89), 42.9% were 35-54 years old (n=87) and 13.3% were over 54 years old (n=27). In the German questionnaire, 60.8% of the participants were 23-34 years old (n=48), 27.8% were 35-54 years old (n=22) and 11.4% were over 54 years old (11.4%). The 3rd question related to their family, whether they had children, and if so, how many. From the entire sample, half of the respondents (50.4%) had no child, 33.0% had 1 or 2 children (n=93) and 16.7% had 3 or more children (n=47). In Hungary, 42.9% had no children (n=87), 36.9% had 1 or 2 children (n=75), and only one fifth (n=41, 20.2%,) had 3 or more children. Amongst German veterinarians, 69.6% had no children (n=55), one fifth had 1 or more children (n=18, 22.8%,), and only 7.6% had 3 or more children (n=6).

The 4th question was about the size of their hometown. Out of Hungarian veterinarians, around one third (n=66, 32.5%) were living in Budapest. The second largest group with over one fourth (n=56, 27.6%) of the participants was living in small towns. The distribution of the responding Hungarian veterinarians' place of residence is shown in Chart 1.

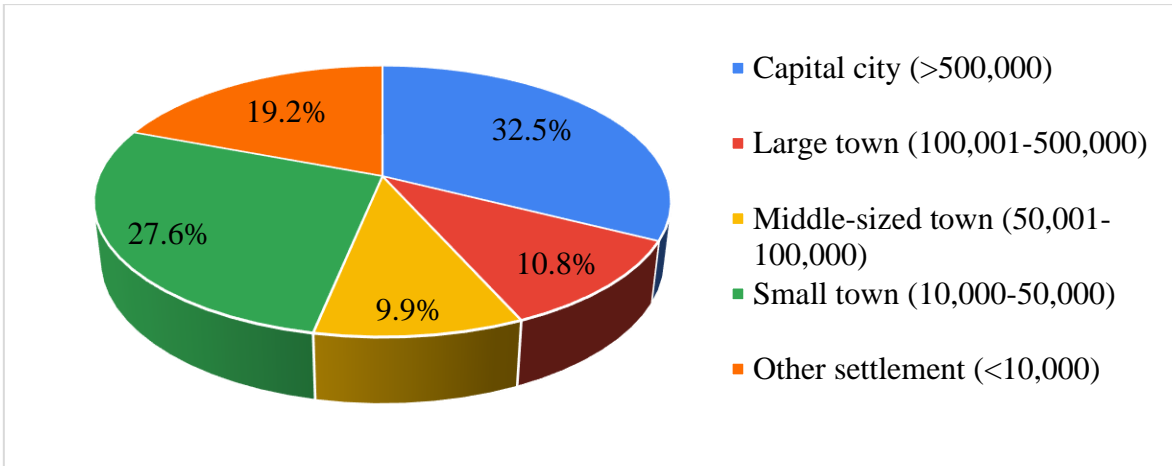


Chart 1. The distribution of the responding Hungarian veterinarians' place of residence (n=203).

The most German veterinarians with 30.4% (n=24) were living in small towns between 10,000 to 50,000 residents and around one fourth (n=21, 26.6%) of them were living in towns with under 10,000 residents. The 4 other categories with over 1,000,000 to 50,001 residents had similar results with a little over and under 10%. The distribution of the responding German veterinarians' place of residence is shown in Chart 2.

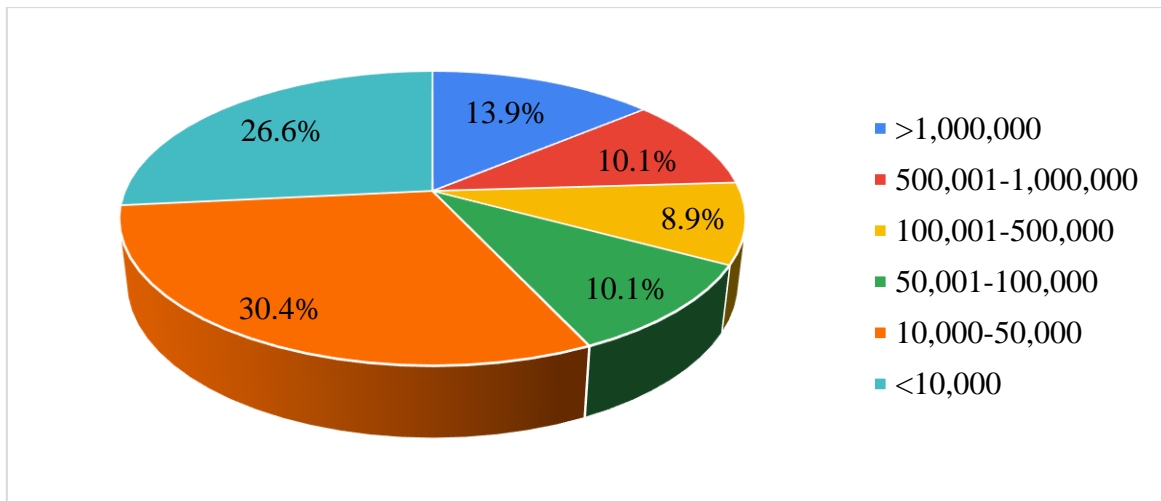


Chart 2. The distribution of the responding German veterinarians' place of residence (n=79).

The 5th question asked which regions and states veterinarians worked in. Around 40% of the Hungarian participants lived in Budapest (n=83) and the second largest group was with almost one fifth from Central Hungary (n=37, 18.2%). The least participants were from Northern Great Plain (n=10) and Southern Transdanubia (n=8). The distribution of the responding Hungarian veterinarians' workplace by region is shown in Chart 3.

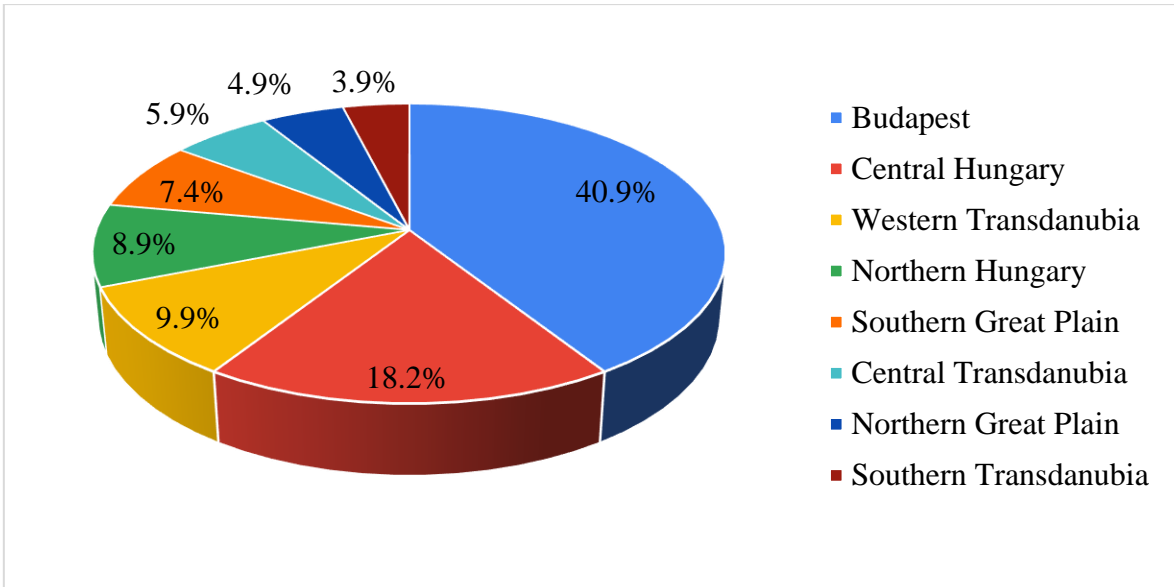


Chart 3. The distribution of the responding Hungarian veterinarians' workplace by regions (n=203).

Out of the German veterinarians, almost one fourth (24.1%) worked in Bayern (n=19) or Nordrhein-Westfalen (n=19), 12.7% worked in Niedersachsen (n=10). The Others included Schleswig-Holstein (n=3), Sachsen, Sachsen-Anhalt, Berlin (n=2) and Thüringen, Hamburg (n=1). There were no participants from Saarland, Brandenburg, Bremen and Mecklenburg-Vorpommern. The distribution of the responding German veterinarians' workplace by states is shown in Chart 4.

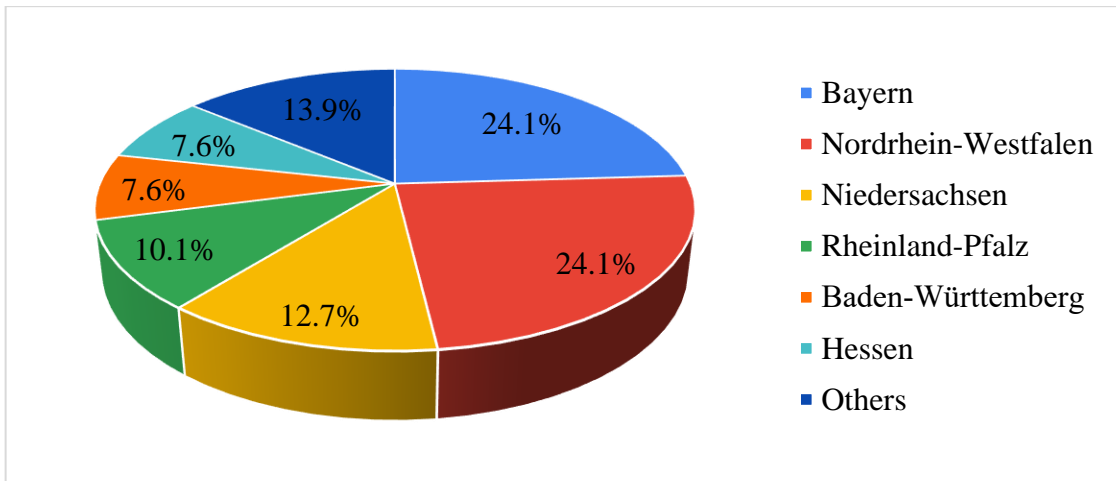


Chart 4. The distribution of the responding German veterinarians' workplace by states (n=79).

The 6th question was referred to the work specialisation and in what area they worked. From the entire sample, the majority of respondents practiced in Small Animal Medicine (n=201, 71.3%). They were followed by respondents working in Equine Medicine (n=49, 17.4%) and Bovine Medicine (n=38, 13.5%). The distribution of the veterinarians working fields is shown in Chart 5. For both countries, Small Animal Medicine was the largest group: 73.9% (n=150) of the Hungarian and 64.6% (n=51) of the German veterinarians worked in this field. In Hungary the second largest group was the Authorities/State Veterinary field with 14.8% (n=30), while only 2.5% of the German participants (n=2) worked in this field. Almost one third (n= 26, 32.9%) of the German participants worked in Equine Medicine. Among Hungarian respondents, there were roughly similar proportions of veterinarians working in Bovine Medicine (n=28, 13.8%), Teaching/Research/PhD (n=26, 12.8%), Exotic Animals and Pig Sector (n=24, 11.8%) and Equine Medicine (n=23, 11.3%). Among German respondents, 12.7% worked in Bovine Medicine (n=10) and 5.1% in Pig Sector (n=4). Among Hungarians, 8.9% worked in Poultry Industry (n=18), while no one from Germany completed the questionnaire in this field. Veterinarians who worked in Pharmaceutical industry (production, trade, distribution, safety), Farm animal feed trade or Veterinary practice management were included in the category Others.

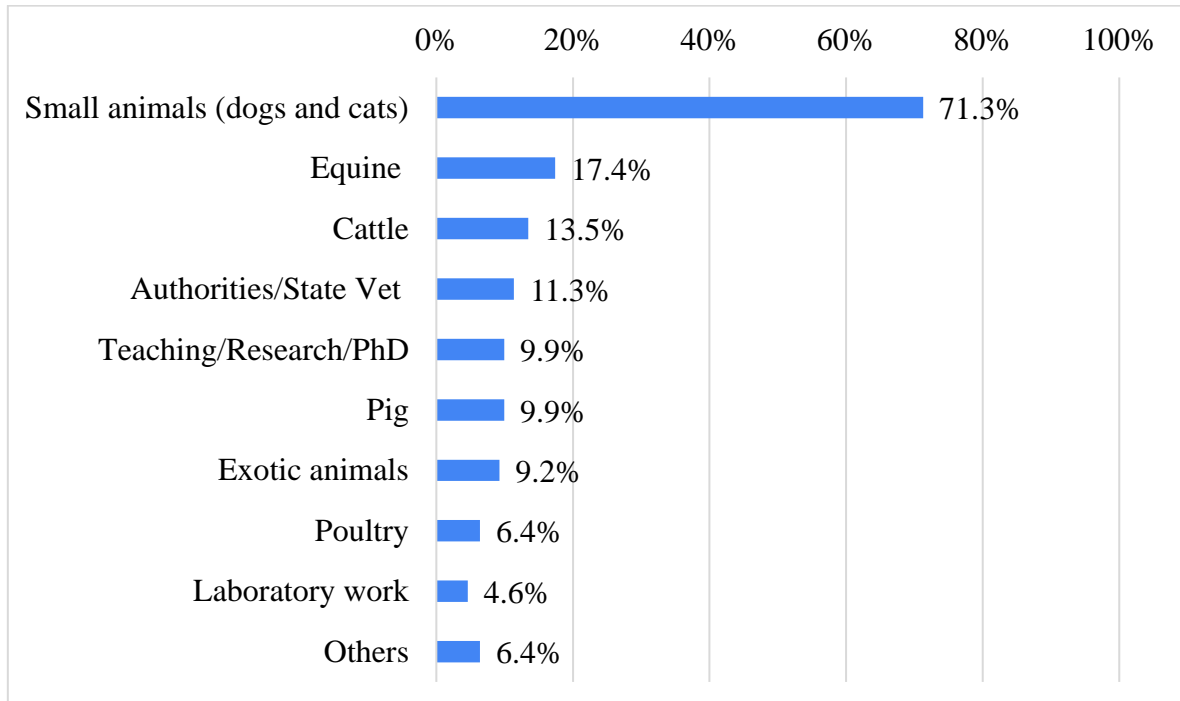


Chart 5. Distribution of the working fields for the entire sample (n=282).

The 7th question covered the years of professional practice experience in their work field. From the entire sample, most respondents had 1-3 years and 11-20 years of experience (n=57, 20.2%). The distribution of professional experience is shown in Chart 6. Most Hungarian participants had work experience of 11-20 years (n=45, 22.2%). There was an equal proportion of veterinarians with 1-3 years and 21-30 years of experience (n=35, 17.2%). Around one fourth of the German veterinarians had only 1-3 years of work experience (n=22, 27.8%). The second largest group, one fifth (n=17, 21.5%) of the participants, had work experience of 4-6 years. The least German veterinarians had more than 30 years' work experience (n=2, 2.5%).

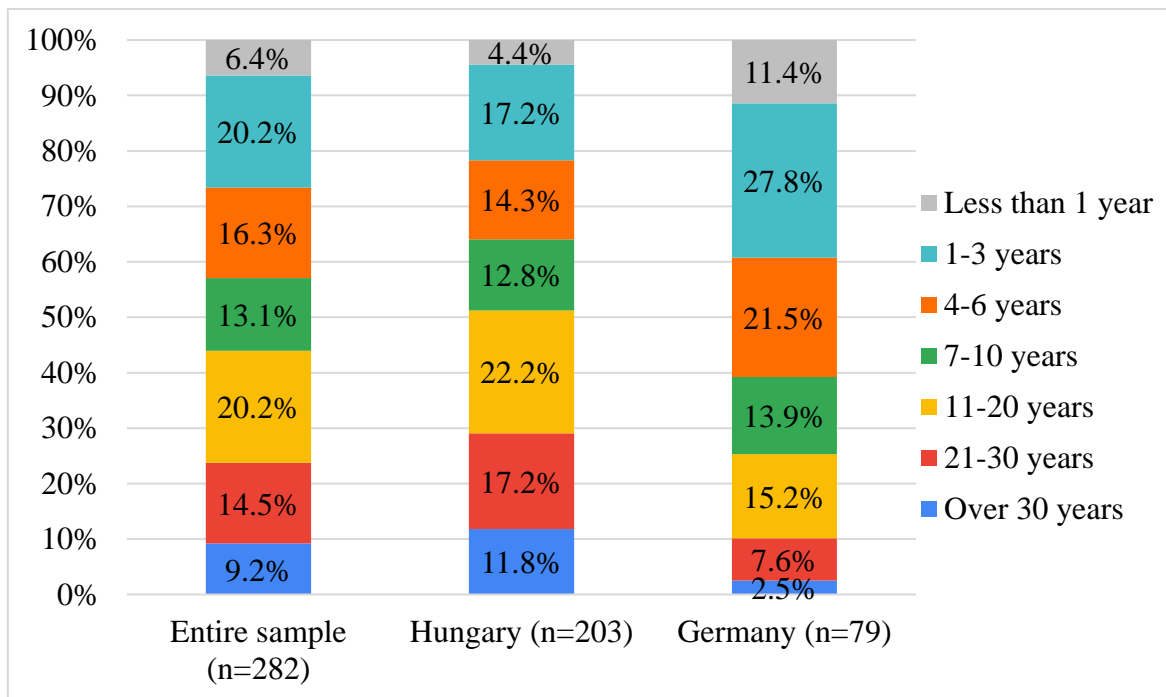


Chart 6. Distribution of veterinarians' professional practice experience they had.

The 8th question asked about the position at their current job. From the entire sample, the majority worked as an employee/non-managerial position (n=184, 65.2%) and the other respondents were in owners/manager positions (n=98, 34.8%). Amongst Hungarian respondents, 60.6 % (n=123) were employees and 39.4% (n=80) were practice owners or managers. In Germany over three quarters (n=61, 77.2%) of the participants were working in employed positions and only 22.8% of the participants (n=18) were practice owners or managers. When looking at the gender it was possible to see in the Hungarian results that 73.7% (n=87) of the female Hungarian veterinarians were working in employed positions while 57.6 % (n=49) of the male veterinarians were self-employed ($p < 0.0001$).

The 9th question asked about the weekly working hours. From the entire sample, the proportion of veterinarians working 31-40 hours (n=99) and 41-50 hours (n=102) per week had the highest ratio. The responses from both countries were similar. The distribution of veterinarians' weekly working time is shown in Chart 7. In Hungary, due to differences within age groups, the results were significant ($p<0.05$). Veterinarians aged 23-34 worked the most 31-40 hours a week (n=42, 47.2%) and 40-50 hours a week (n=33, 37.1%). But one third of the veterinarians aged 35-54 also worked 31-40 hours a week (n=29, 33.3%) and 36.8% worked 40-50 hours a week (n=32). When looking at the gender, fewer Hungarian female veterinarians (n=36, 30.5%) worked between 40-50 hours, compared to 41.2% of men (n=35). The German veterinarians between 23 and 34 years old were the largest working age group. One third of them worked 31 to 40 hours a week (n=16, 33.3%) and almost half of this age group worked 41 to 50 hours a week (n=23, 47.9%).

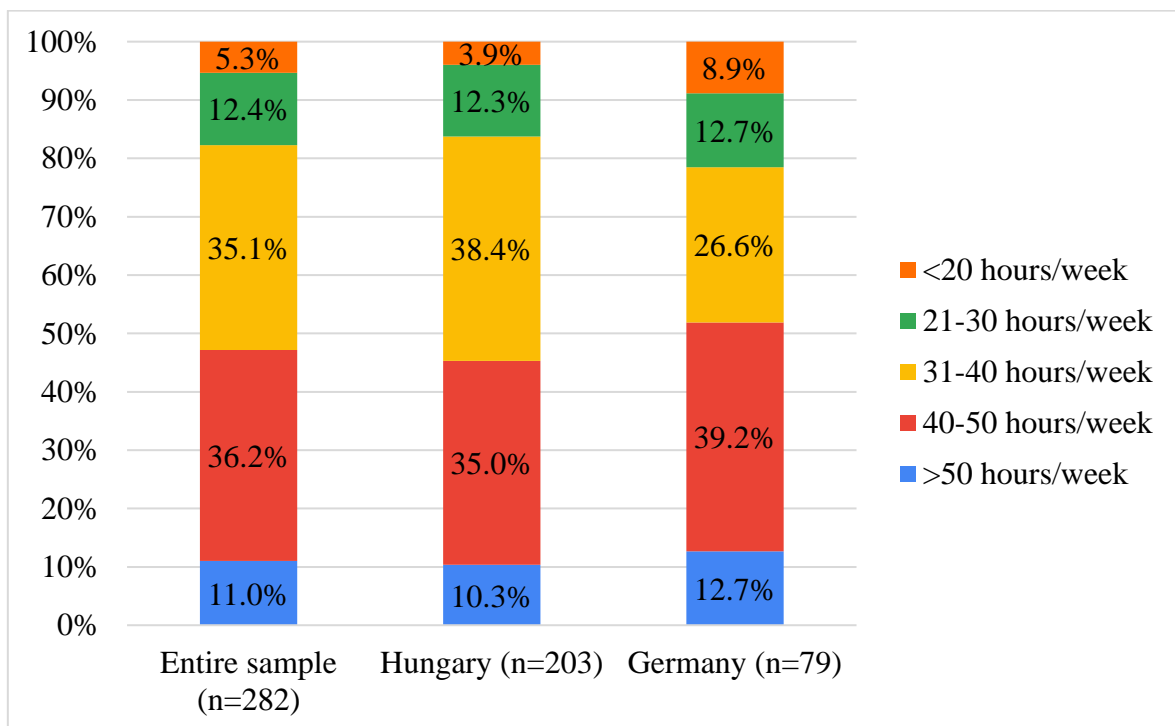


Chart 7. Distribution of veterinarians' weekly working time.

In questions 11th and 12th, we asked about the average salary at their current job and the wished amount they would have found appropriate in their job position. The previous one had a relatively similar distribution which is shown in Chart 8. Most of the Hungarian veterinarians had a salary of HUF 450,001-600,000 (n=55), almost one fourth had a salary of over HUF 900,000 (n=39) and a little less had a salary of HUF 300,001-450,000 (n=37). Not even 10% had a salary of under HUF 300,000 (n=17).

In terms of age, 44.4% of the veterinarians older than 54 had a salary over HUF 900,000 (n=12) compared to veterinarians aged 23-34 (n=10, 11.4%) and 35-54 (n=17, 19.5%). However, 37.1% of veterinarians aged 23-34 earned between HUF 450,001-600,000 (n=33) and 21.3% of them earned between HUF 300,001-450,000 (n=19) compared to veterinarians aged 35-54 (n=17, 19.5% and n=16, 18.4%) ($p<0.01$). When looking at the gender it was possible to see that less males had a salary of under HUF 300,000 (n=5, 5.9%), and more of them (n=28, 32.9%) had a salary of over HUF 900,000 compared to females. There were female respondents earning less than HUF 300,000 (n=12, 10.2%), while the share of those earning over HUF 900,000 was only 9.3% (n=28). But there were also more female veterinarians earning HUF 600,001-750,000 (n=20, 16.9%) compared to males (n=9, 10.6%) ($p<0.0001$).

Almost half of the Hungarian veterinarians (n=94) believed a salary of over HUF 900,000 would be the appropriate income. Only 2.5% of the participants believed (n=5) that a salary lower than HUF 450,000 would be appropriate. In terms of age, 77.8% of veterinarians older than 54 believed a salary over HUF 900,000 (n=21) would be appropriate for their work compared to veterinarians aged 23-34 (n=26, 29.2%) and 35-54 (n=47, 54.0%). However, no veterinarians aged 23-34 or over 54 believed a salary under HUF 300,000 would be appropriate. However, more veterinarians aged 23-34 and 35-54 thought that a salary between HUF 750,001-900,000 (n=19, 21.3% and n=17, 19.5%) would be appropriate compared to veterinarians older than 54 (n=2, 7.4%) ($p<0.01$). When looking at the gender it was possible to see that no males believed a salary of under HUF 300,000 (n=0, 0.0%), and 69.4% of them thought that an appropriate salary would be over HUF 900,000 (n=59). In contrast, there were female respondents believing less than HUF 300,000 (n=1, 0.8%) would be appropriate, while the share of those believing over HUF 900,000 was only 29.7% (n=35). But there were also more female veterinarians believing HUF 600,001-750,000 (n=30, 25.4%) would be appropriate compared to males (n=14, 16.5%) ($p<0.0001$).

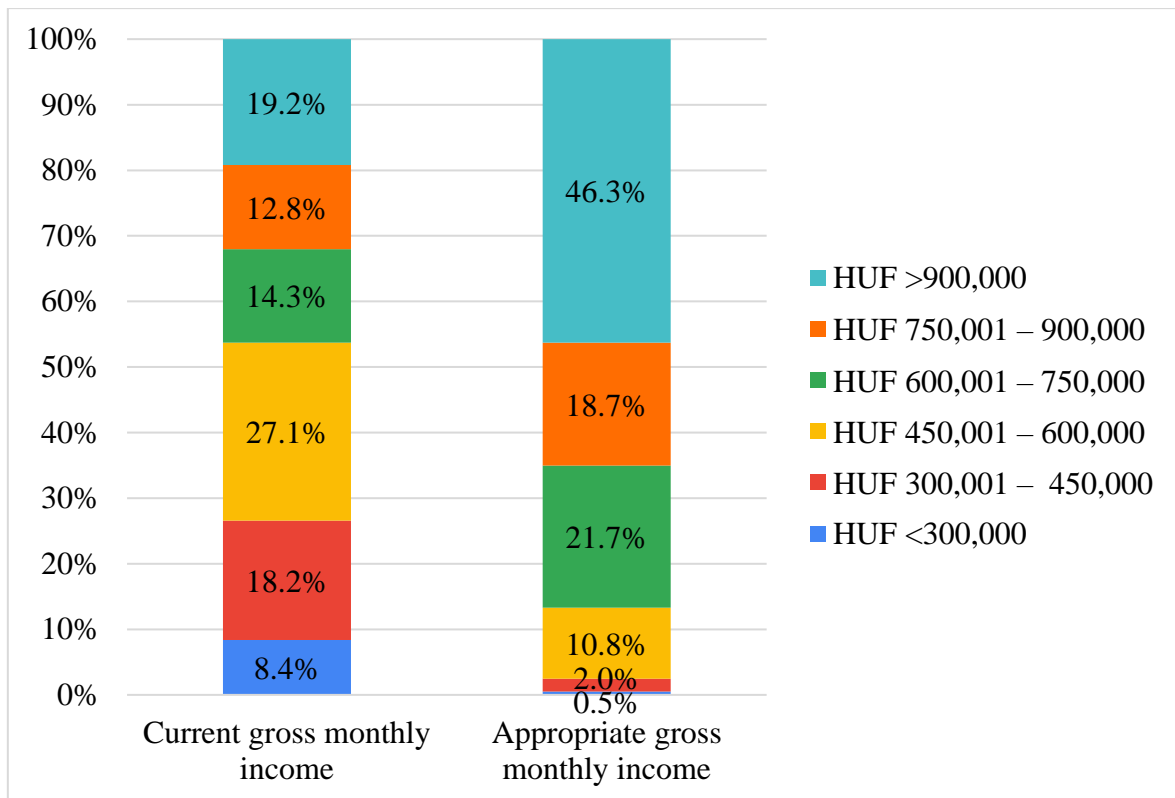


Chart 8. Distribution of Hungarian veterinarians' current and appropriate gross monthly salary (n=203).

Most German participants (21.5%) had a salary of EUR 3,001-3,500 (n=17), and around one fifth had a salary of EUR 4,001-5,000 (n=15). In summary, over half of all participants were earning more than EUR 3,001 (n=54, 68.4%), which is shown in Chart 9. No male German veterinarian was earning under EUR 3,000, while 16.6% of female veterinarians were earning under EUR 3,000 (n=12). The results of the German veterinarians had a similar direction as the Hungarians' about the appropriate salary. Only 8.9% of the participants believed that a salary of under EUR 2,500 would be appropriate for their work position (n=7). Over 80% believed a salary of EUR 3,000 and more would be appropriate (n=66). Within this, almost one quarter of them even believed that a salary of over EUR 5,000 would be appropriate (n=19). Amongst German male veterinarians, 42.9% believed a salary of over EUR 5,000 would be appropriate (n=3).

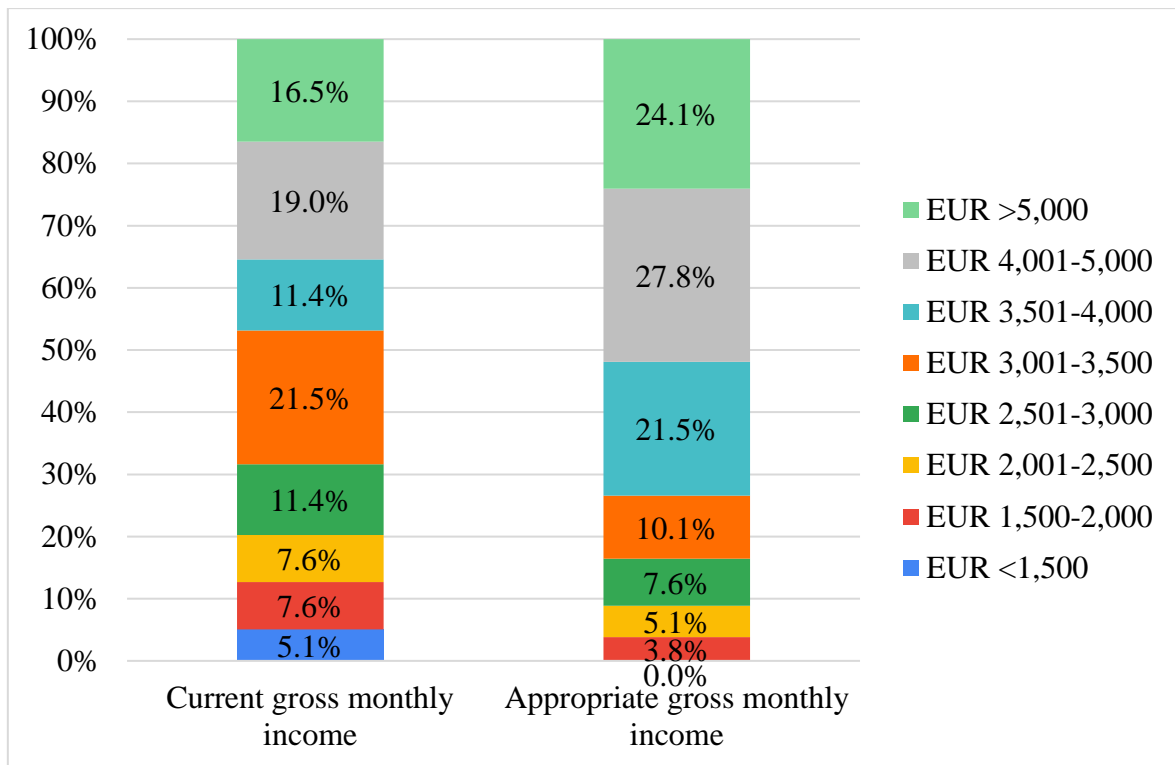


Chart 9. Distribution of German veterinarians' current and appropriate gross monthly salary (n=79).

4.2. Veterinarians' attitudes towards their current job status by age group and gender

The 13th-19th questions were statements that needed to be answered by a 5 point-Likert-scale. The different response percentages are summarized in Charts 10 and 11. The veterinarians were asked whether they would choose this profession again or not. This statement showed their satisfaction in their job. The mean value was 2.15 ± 1.38 points for Hungarian respondents and 2.38 ± 1.31 points for German respondents ($p=0.09088$). Almost half of the Hungarian veterinarians strongly disagreed with this statement ($n=101$). Male Hungarian veterinarians answered that they would more likely choose this profession again ($n=46$, 54.1%), in comparison to the women ($n=55$, 46.6%) ($p=0.3875$). Over one third of the German veterinarians also strongly disagreed with this statement ($n=30$). But over 45% of them were undecided/agreed/strongly agreed with this statement. The veterinarians were further asked whether they would choose their current place of employment again or not. The mean value was 1.84 ± 1.10 points for Hungarian respondents and 2.33 ± 1.33 points for German respondents ($p < 0.05$). Over half of the Hungarian participants strongly disagreed with this statement ($n=107$). Only under 10% agreed or strongly agreed to this statement ($n=9$). However, one fifth of the German participants agreed or strongly agreed to this

statement (n=17). Over one third of them strongly disagreed and would choose their place of employment again (n=29) and almost one fourth of them agreed (n=19).

When asked if they had been looking for their job for a long time before they found it, over 60% of the Hungarian participants (n=128) and also German participants (n=48) strongly disagreed with this statement. The mean value was 1.75 ± 1.19 points for Hungarian respondents and 1.86 ± 1.28 points for German respondents ($p=0.9302$). The options undecided/agreed/strongly agreed each received under 10% among Hungarians (n=16/16/10). Germans answered under or around 10% to these options (n=8/7/5). When asked if they could cover all their expenses and if they did not need money support sometimes, most veterinarians in Hungary (n=91) and Germany (n=35) had a strong agreement. The mean value was 3.78 ± 1.41 points for Hungarian respondents and 3.78 ± 1.34 points for German respondents ($p=0.4608$). One third of the Hungarian participants were undecided (n=25) or agreed (n=44). The German participants were undecided (n=14) and agreed (n=14) with each 17.7%.

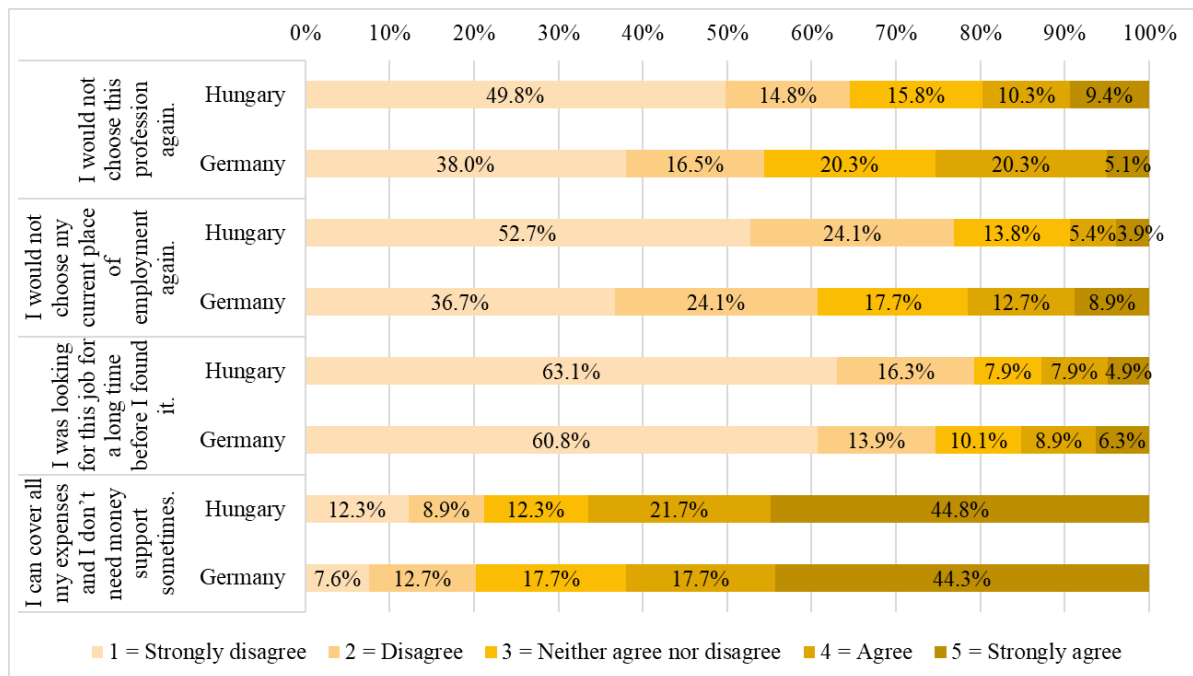


Chart 10. Response percentages of Hungarian (n=203) and German (n=79) veterinarians according to statements about their attitude towards their veterinary profession.

The veterinarians were asked whether they had known about the financial situation in their profession before they had started working as a vet. The answers showed a clearly visible difference between the Hungarian and German veterinarians. The mean value was 2.47 ± 1.42 points for Hungarian respondents and 3.38 ± 1.44 points for German respondents ($p < 0.001$). The significance clearly showed that the knowledge about the financial situation

was more known in Germany. A little under half of the German veterinarians answered with agreed (n=11) or strongly agreed (n=27). In comparison, the Hungarian participants were over half of them strongly disagreeing (n=70) and disagreeing (n=46). The veterinarians older than 54 were the ones who were the most educated about their financial situation before starting to work (n=9, 33.3%) in comparison to veterinarians aged 23-34 (n=9, 10.1%) or 35-54 (n=12, 13.8%). Almost half of the veterinarians aged 35-54 did not know about the financial situation and strongly disagreed with this statement (n=42, 48.3%) ($p<0.001$). In Germany, over one third of the younger ages (23-34 years old) did know about the financial situation and strongly agreed with the statement (n=17) and 22.9% agreed (n=11). Also 40.9% of the participants strongly agreed and were in the age group between 35 and 54 years old (n=9).

The veterinarians were asked if they were satisfied with their current salary. The Hungarian and German questionnaire had similar results. The mean value was 3.07 ± 1.38 points for Hungarian respondents and 3.03 ± 1.29 points for German respondents ($p=0.6274$). In Germany, the largest groups agreed (n=19) or disagreed (n=19) with this statement the undecided position followed with almost one fifth of the participants (n=18). In Hungary, one quarter of the participants agreed (n=49) or strongly agreed (n=38) with this statement and were satisfied with their salary. Similar to the German responses, there were slightly over one fifth of the Hungarian participants in the undecided position (n=43). When looking at the difference between the gender answering this statement, it was clear to see that female Hungarian veterinarians were less satisfied with their current salary. About a third of them agreed (n=30, 25.4%) or strongly agreed (n=16, n=13.6%). Almost half of the men answered that they were satisfied with their salary. They agreed (n=19, 22.4%) or strongly agreed (n=22, 25.9%) with this statement ($p=0.08973$).

The veterinarians were further asked whether a younger veterinarian could charge the same amount of money for a treatment as an older, experienced veterinarian. The mean value was 3.37 ± 1.33 points for Hungarian respondents and 2.89 ± 1.24 points for German respondents ($p<0.001$). Over one quarter of the Hungarian veterinarians strongly agreed (n=53) and 22.7% agreed (n=46) with this statement, but another quarter was undecided (n=53). Overall, on average the Hungarian veterinarians believed that a younger veterinarian could charge the same. Amongst the German participants, almost one third disagreed with this statement (n=26) compared to Hungarians, and one quarter of them agreed that they could charge the same (n=19). The numbers of answers with the strong option (strongly

disagree/strongly agree) were relatively low (n=10 and n=9). Almost one fifth had an undecided position about this statement (n=15).

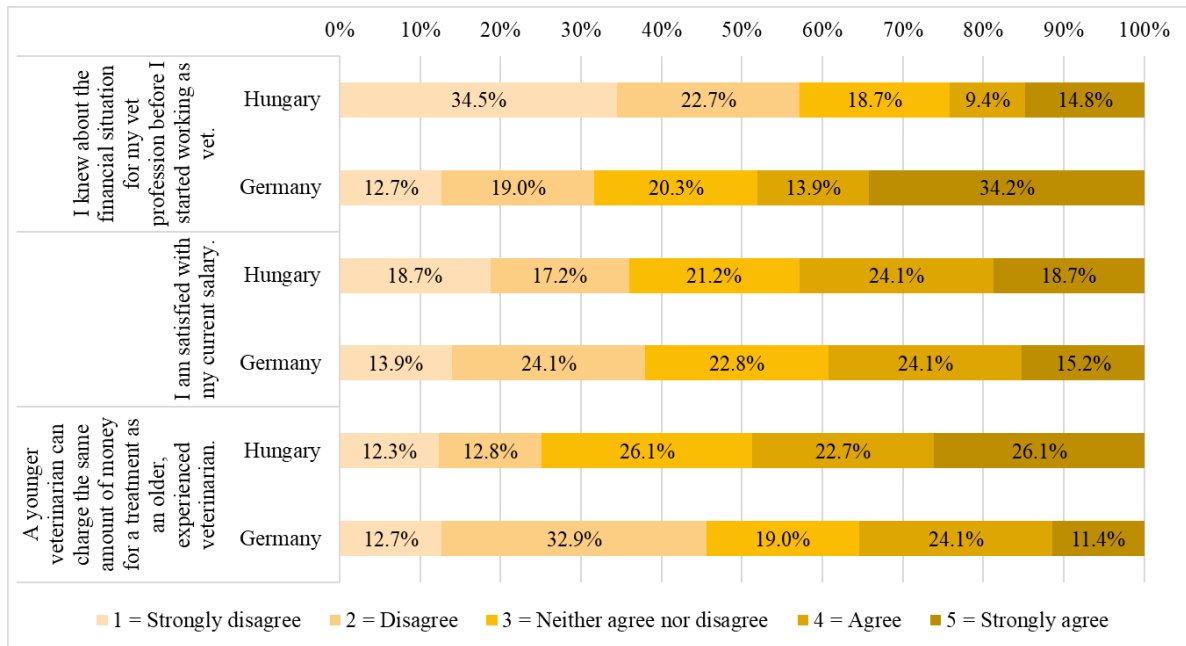


Chart 11. Response percentages of Hungarian (n=203) and German (n=79) veterinarians according to statements about their attitude towards their veterinary profession.

The 20th question asked about advantages and benefits they got from their employers. From the entire sample, 55.0% of them received continuing education allowance (n=155). The proportion of the additional benefits is shown in Chart 12. Over three quarters of the German participants were granted continuing education allowance (n=62). This was also the biggest group of the Hungarian participants, a little less than half of them (n=93). A little over one fifth of them had a vehicle allowance (n=17) and a little under one fifth of them had premiums for after-hours premium. Only 10.1% of them had additional sick/compassionate leave (n=8). In contrast, more Hungarian veterinarians had received sick and compassionate leave than Germans, this was the second biggest group with 43,8% (n=89). Around only one fifth of them had a clothing allowance (n=48), compared to German veterinarians because over 60% of them had received this (n=48). More Hungarian veterinarians had no additional benefits (n=22, 10.8%) compared to Germans (n=4, 5.1%). The following benefits are included in the Others category by Hungarian respondents (n=33): Cafeteria, SZÉP-card, childcare allowance, membership fee of the Hungarian Veterinary Chamber, professional liability insurance, travel allowance, housing allowance, money commission, laptop and language-learning support. And for Germans (n=6): other social benefits and supplements, money commission, monthly coupon card and company pension scheme.

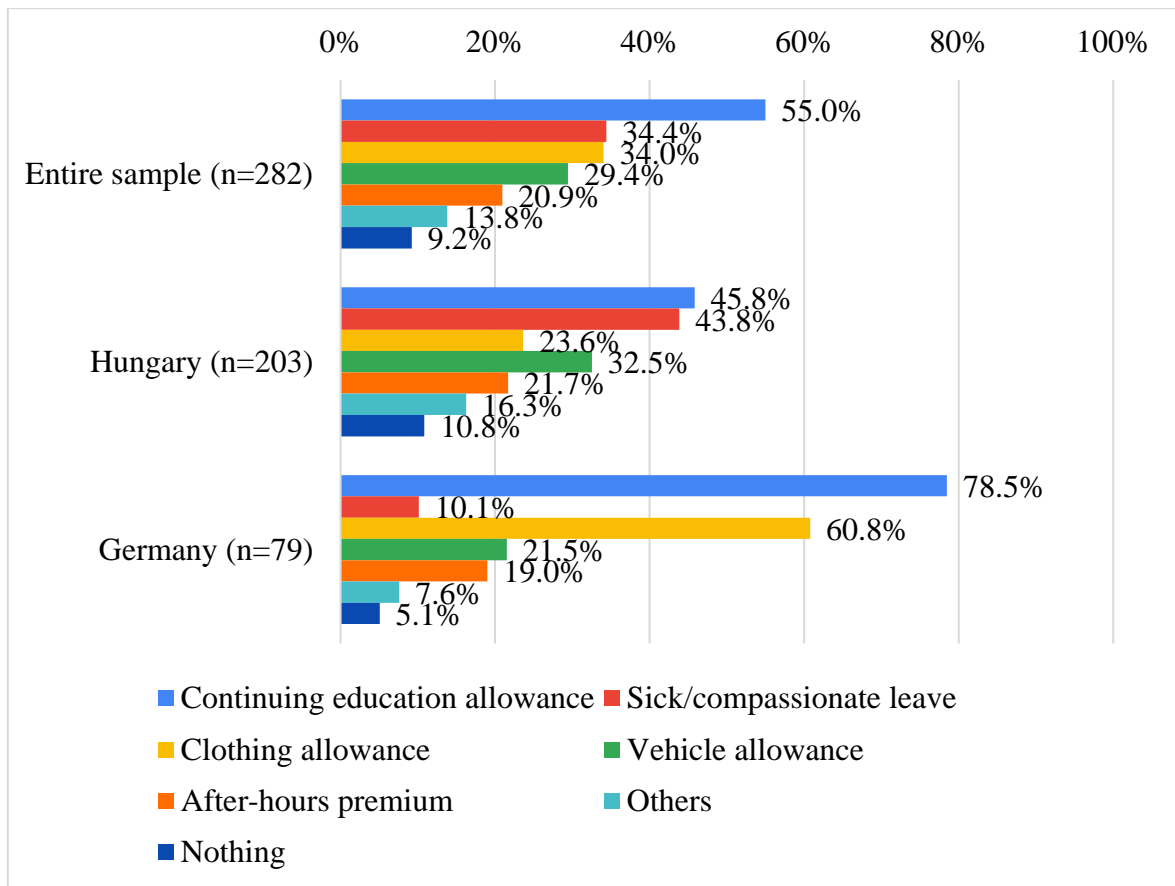


Chart 12. The proportion of the most recent additional benefits in the veterinary profession.

The 21st question asked about debts. From the entire sample, 75.5% of the respondents (n=213) had never loans. Out of the Hungarian participants, 79.8% never had debts (n=162). Only one fifth had debts (n=41 20.2%) and even half of them had already paid them (n=19, 9.4%). Almost two third of the German veterinarians never had debts (n=51, 64.6%), 22.8% had already paid their debts (n=18) and 12.7% still had debts that needed to be paid (n=10). The difference was significant between the countries ($p < 0.01$). When looking at the distribution across the age group it was clear to see a significant difference ($p < 0.0001$). None of the Hungarian participants over 54 years old had debts, but 19.5% of the veterinarians aged 35-54 (n=17) had already paid their debts and 16.9% of the veterinarians aged 23-34 (n=15) were still paying their debts. When looking at the gender, it was possible to see that the female Hungarian veterinarians were more likely to have debts (n=31, 11.7%) than the male counterparts (n=10, 26.3%) ($p < 0.05$). This difference was not possible to see in the German questionnaire. Most German participants over 54 years old had no debts and 44.4% paid their debts already (n=4). Veterinarians aged 23-34 (n=7, 14.6%) and 35-54 (n=3, 13.7%) had less debt but more of them still needed to pay them.

The 22nd question investigated how they found their job. From the entire sample, most veterinarians were familiar with the company or clinic via previous work (n=107, 38.2%),

the proportion of the job finding methods is shown in Chart 13. Over one third of responding Hungarian veterinarians found their job because they knew a company/clinic via previous work (n=71) and another third of them have had colleagues or friends who suggested or mentioned this job advertisement (n=71). Some of them had seen an advertisement for a job opening (Facebook, Vetmail list, LinkedIn, etc.) (n=27). Almost half of the German veterinarians were also familiar with a company/clinic via previous work (n=36). One quarter of them were looking actively for jobs to find their employment (n=21) and another quarter had a colleague or friend who suggested or mentioned this job advertisement (n=18). Only 3.8% of the German participants (n=3) had started to run their own business/clinic/practice compared to a higher ratio of Hungarians (n=29, 14.4%).

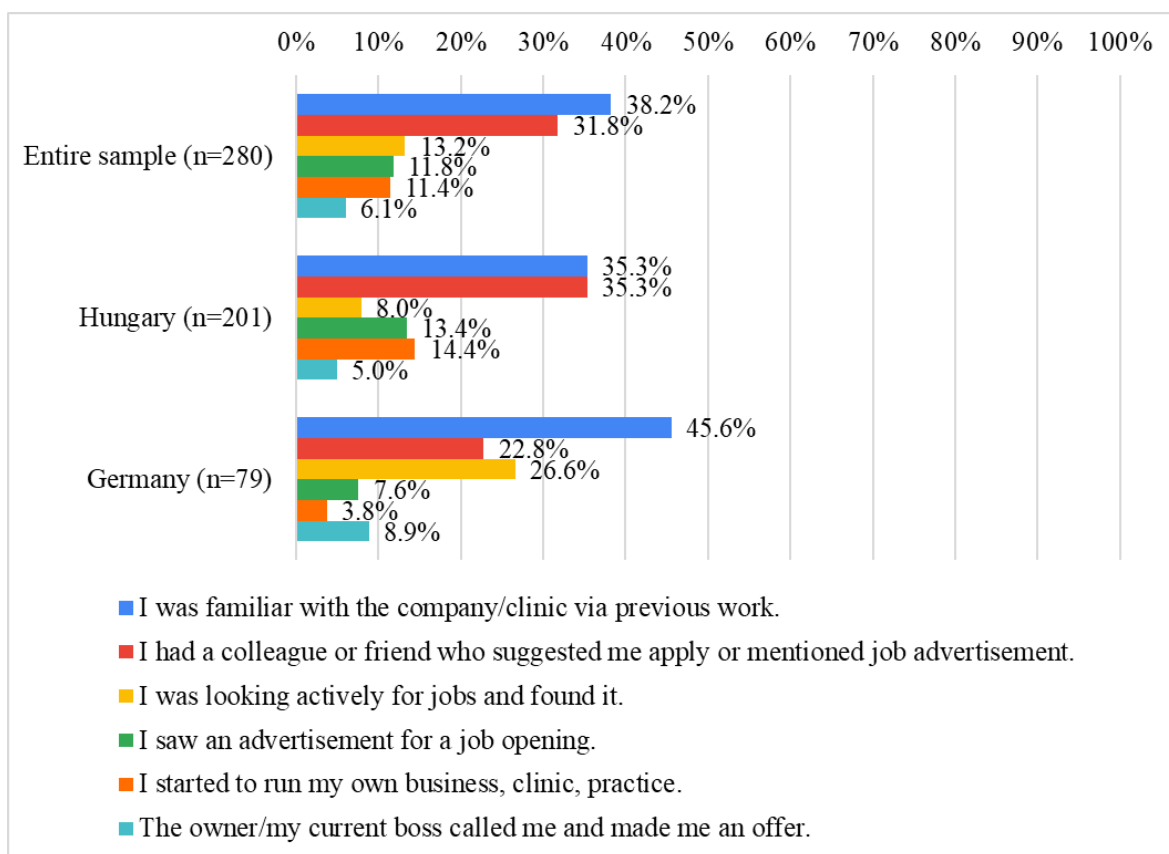


Chart 13. The proportion of how veterinarians found their current jobs.

The 23rd question was about the frequency of the on-call duties, night shifts and weekend work. From the entire sample, most veterinarians did not undertake any of them (n=107, 37.9%), the proportions are shown in Chart 14. Over 41% of the Hungarians (n=85) and almost 30% of the Germans (n=22) did not undertake night service or on-call duties (n=85). Around one third of Hungarians had 1-2 times per month a night or on-call service (n=76). They were less likely to have duties 8 times or more in a month (n=5, 2.5%) compared to Germans (n=11, 13.9%) ($p < 0.0001$).

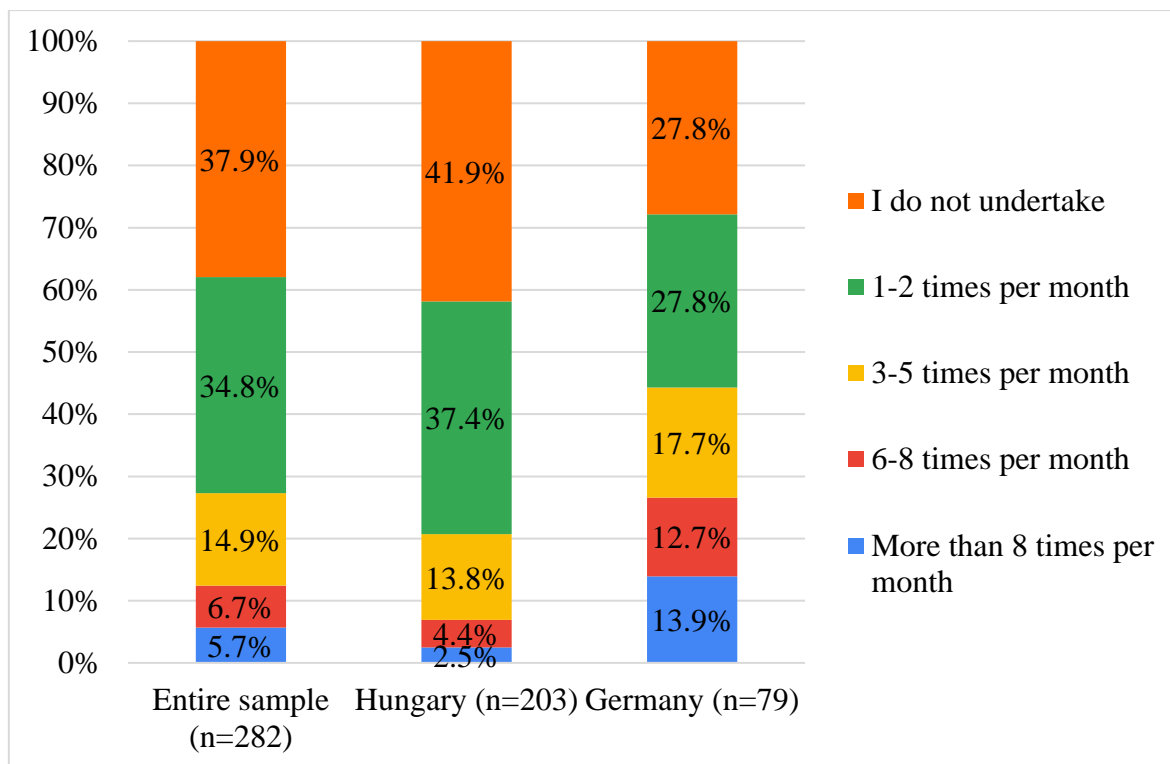


Chart 14. The proportion of veterinarians' on-call duties, night shifts and weekend work a month.

The 24th question was about extra payments for overtime work. From the entire sample, 33.0% of the respondents (n=93) always got extra payment, whilst 39.7% of them (n=112) never got anything. One third of the Hungarian participants were paid overtime (n=68, 33.5%) and another third was never had paid overtime (n=71, 35.0%). Over half of them did not really or not at all got their overtime work paid (n=112, 55.2%). In Germany, over half of them never got their overtime work paid (n=41, 51.9%). Almost one third of them always got their overtime work paid (n=25, 31.6%). These results showed a significant difference between the countries ($p < 0.05$). More Hungarian veterinarians older than 54 years (n=17, 63.0%) received no payment of the overtime work at all compared to veterinarians aged 23-34 (n=24, 27.0%) and 35-54 (n=30, 34.5%) ($p < 0.01$). When looking at the gender it was possible to see that more female Hungarian participants got their overtime paid (n=56, 47.5%) than male veterinarians (n=35, 41.2%), also more of them answered that they did not really get their overtime paid (n=22, 25.9%) compared to females (n=19, 16.1%) ($p < 0.05$). The German participants at the age of 35 and over were more likely to get their overtime paid (n=4, 44.4%) than the participants aged 23-34 (n=12, 25.0%). Female German participants were less likely to get their overtime paid (n=22, 30.6%) than their male counterparts (n=3, 42.9%).

The 25th question asked if they had changed their job profession inside the veterinary field and when. From the entire sample, 66.7% of the respondents (n=188) did not change

their job field: 61.1% of the Hungarian veterinarians (n=124) and 81.0% of the German veterinarians did not change their job (n=64). One fifth of the Hungarians had changed it in the last 5 years (n=43) and 17.7% did change their job over 5 years ago (n=36). There was German participants who had changed their job in the last 5 years (n=10, 12.7%) and 6.3% of them did change over 5 years ago (n=5). The difference between the countries is significant ($p<0.01$). In Germany, 89.6 % of the age group between 23 and 34 years old had not changed their job in the veterinary field. One third of the participants over 54 years old had changed their job and it was over 5 years ago (n=3). It was similar in the age groups of the Hungarian questionnaire see the significant difference in the age groups ($p<0.0001$): more veterinarians aged 23-34 (n=65, 73.0%) had not changed their job compared to veterinarians older than 54 (n=13, 40.7%). By comparing the gender, a significant difference could be seen ($p<0.05$). Female Hungarian participants tended to change their job position in the last 5 years (n=28, 23.7%) and more male Hungarian participants had changed their job over 5 years ago (n=23, 27.1%). For the German questionnaire it showed different results. More male veterinarians had changed their job in the last 5 years (n=2, 28.6%) compared to females (n=3, 4.2%).

The 38th question asked if they were looking for a new job in the last 2 years. From the entire sample, two third of the respondents said “No” (n=189, 67.0%) and one third of them said “Yes” (n=93, 33.0%). Out of the Hungarian veterinarians, 72.4% said they had not thought about changing their job in the last 2 years (n=147). In the German questionnaire, over half of the participants said they had thought about changing their job (n=42, 53.2%). The Hungarians were less likely to change their job than the Germans ($p<0.01$). By looking at the age it was possible to see in the Hungarian questionnaire that the age was in correlation with the idea of changing their job. Veterinarians aged 35-54 (n=69, 79.3%) and older than 54 (n=26, 96.7%) were less likely to change jobs and had not thought about it, while veterinarians aged 23-34 had thought a little more about it (n=52, 58.4%) ($p<0.0001$). Among Germans, it was similar: 88.9% of the veterinarians over 54 years old (n=8) said they had not thought about changing their job in the last 2 years while 58.3% of the veterinarians aged 23-34 said that they had thought about changing their job (n=28).

4.3. Veterinarians' future attitudes and expectations of their work by age group and gender

The 26th-34th questions were about the importance of different values at their job. The categories could be answered by a 5-point Likert-scale. The different response points are summarized in Chart 15.

The most important aspect was the good working atmosphere and working conditions. Almost all Hungarians agreed (n=23, 11.3%) or strongly agreed (n=178, 87.7%) and among Germans a little less agreed (n=12, 15.2%) or strongly agreed (n=61, 77.2%) ($p<0.05$).

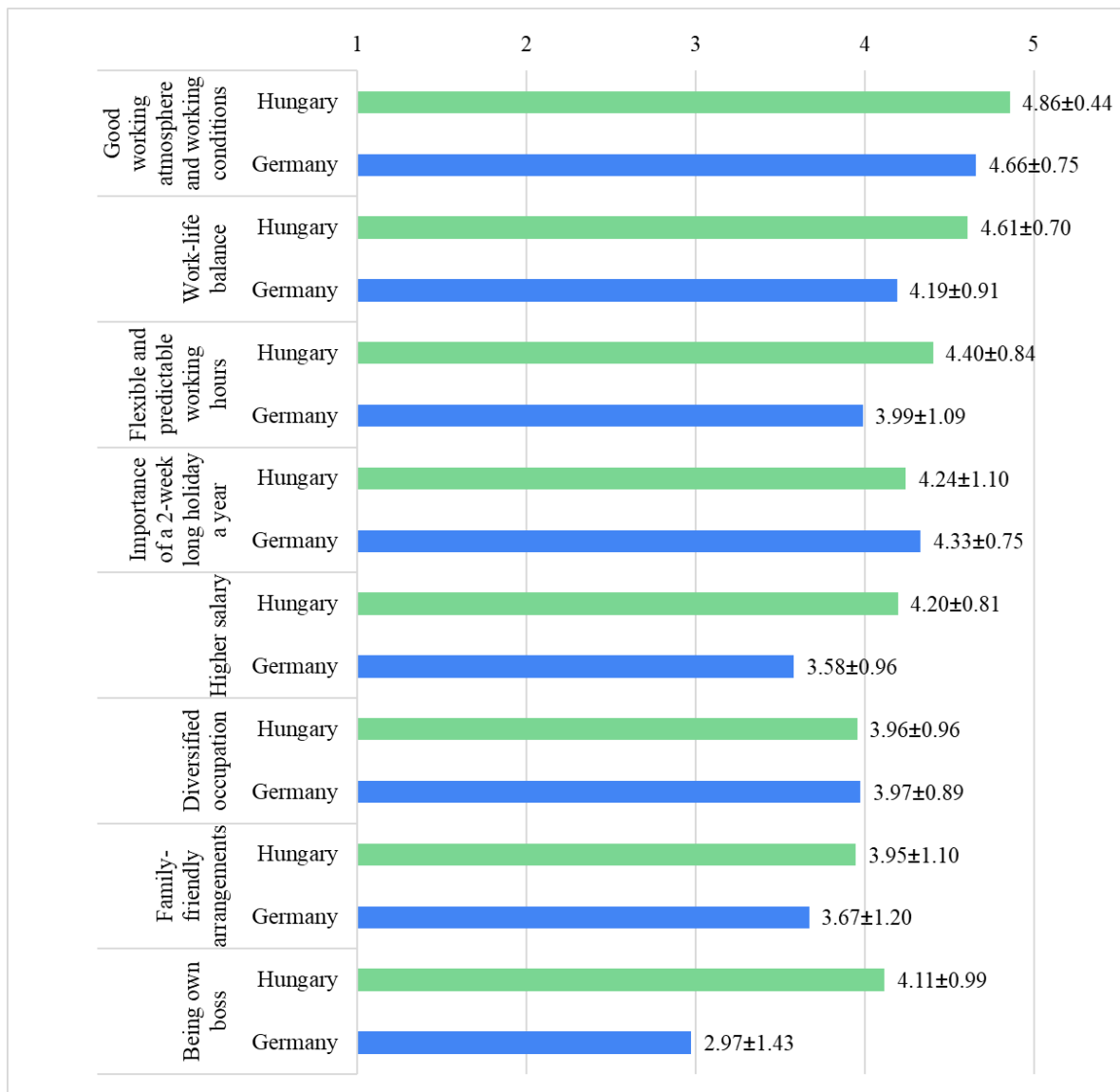


Chart 15. Mean values for the most important aspects of their workplace when looking for a job in Hungary (n=203) and Germany (n=79). On a 5-point Likert Scale, where 1 = strongly disagree and 5 = strongly agree.

The second most important aspect was the work-life balance. Only 0.5% and 1.0% of Hungarian participants strongly disagreed (n=1) or disagreed (n=2) with this statement and

21.2% and 70.9% of them agreed (n=43) or strongly agreed (n=144). Almost half of the German participants strongly agreed with this statement (n=37, 46.8%) and almost one third agreed (n=24, 30.4%), which is a little less than the Hungary results showed ($p<0.001$). Only 5.1% of participants disagreed (n=4) and none of them strongly disagreed. Hungarian (n=91, 77.1%) and German (n=35, 48.6%) female veterinarians were thinking more strongly about work life balance than their male counterparts (n=53, 62.4% and n=2, 28.6%) ($p<0.05$). The next category was about flexible and predictable working hours. Over two third of the Hungarian participants agreed (n=57, 28.1%) or strongly agreed (n=118, 58.1%) and 10.8% were neutral about this option (n=22). Almost two third of the German participants also agreed (n=23, 29.1%) or strongly agreed (n=33, 41.8%), but 2.5% and 8.9% of them strongly disagreed (n=2) or disagreed (n=7), which showed a significant difference between the countries ($p<0.05$). Veterinarians were asked whether it was important to be able to go on a 2-week-long holiday a year: 59.1% of the Hungarians strongly agreed to this statement (n=120). The next largest group with 18.2% of participants agreed (n=37). Not even 10% of them strongly disagreed (n=8, 3.9%) or disagreed (n=9, 4.4%). Almost 90% of the German participants agreed (n=35, 44.3%) or strongly agreed (n=36, 45.6%), which was significantly less than in Hungary ($p<0.001$).

Veterinarians were asked how important the higher salary was. Over 80% of the Hungarian participants agreed (n=86, 42.4%) or strongly agreed (n=82, 40.4%) that a higher salary was important. In Germany only a little over half of the participants agreed (n=32, 40.5%) or strongly agreed (n=12, 15.2%). According to this, there was a significant difference between the countries ($p<0.0001$). Over one third of them were undecided about the higher salary (n=29, 36.7%). When looking at the age, Hungarian veterinarians aged 23-34 had 41.6% agreeing (n=37) or 50.6% strongly agreeing (n=45) to the importance of a higher salary. The veterinarians older than 54 strongly agreed with only 40.7% (n=11) ($p<0.05$). In Germany, half of the 23-34-year-old veterinarians agreed (n=24) and 45.5% of the 35-54-year-old veterinarians were neutral about the higher salary (n=10). The gender difference in the Hungarian veterinarian were seen by the strong or less strong opinions. Most female veterinarians (n=57, 48.3%) agreed with this statement and a little less (n=46, 39.0%) strongly agreed. For the male veterinarians it was the opposite. Most of them strongly agreed (n=36, 42.4%) and a little less (n=29, 34.1%) agreed to this statement ($p=0.1994$).

The following category referred to the importance of diversified occupation. Over one third of Hungarian veterinarians strongly agreed (n=71, 35.0%) and another third agreed (n=66, 32.5%). Over one quarter were undecided about this statement (n=55, 27.1%). In

Germany the opinion's direction was also towards agreement to the importance of diversified occupation: 30.4% strongly agreed (n=24) and 44.3% agreed (n=35), but 17.7% of them were undecided about this statement (n=14). It was possible to see that it was more important to the Hungarian veterinarians older than 54 (n=12, 44.4% strongly agree and n=10, 37.0% agree) compared to veterinarians aged 23-34 (n=31, 34.8% and n=31, 34.8%) or 35-54 (n=28, 32.2% and n=25, 28.7%) ($p < 0.05$). Amongst Germans the correlation to the age groups was not possible to see, the contributions of the opinion towards this statement were evenly distributed.

The veterinarians were asked about the importance of family friendly arrangements. In Hungary, 39.4% of the participants strongly agreed to the importance of family friendly arrangements (n=80) and 30.5% agreed (n=62). However, 3.4% of them strongly disagreed (n=7) or 7.9% of them disagreed (n=16). In Germany, 30.4% strongly agreed (n=24) and a little under 29.1% agreed (n=23). Almost one quarter were undecided (n=19, 24.1%), 10.1% of them disagreed (n=8) and over 6.3% strongly disagreed (n=5) with this statement. It was possible to see in the results that this statement was in correlation with age. The German results showed that the older age groups tended to prioritise the family friendly arrangement more than the younger age groups: 22.2% or 44.4% of veterinarians older than 54 agreed (n=2) or strongly agreed (n=4), while 27.3% or 36.4% of veterinarians aged 35-54 agreed (n=6) or strongly agreed (n=8) and 31.2% or 25.0% of the veterinarians aged 23-34 agreed (n=15) or strongly agreed (n=12). Similar results were seen amongst Hungarians: decreasing percentages in correlation with age ($p = 0.1178$).

The last statement investigated if they wanted to be their own boss. Almost half of the Hungarian participants strongly agreed and wanted to be their own boss (n=97, 47.8%). Around one quarter of them were undecided regarding this statement (n=50, 24.6%). The results of the German questionnaire were not as strongly indicating that they wanted to be their own boss as the Hungarian ones ($p < 0.0001$). Around one fifth of the German strongly agreed (n=16, 20.3%) but also a little over one fifth strongly disagreed with this statement (n=17, 21.5%). When looking at the age distribution it was possible to see that around one third of the German veterinarians aged 35-54 year (n=7, 31.8%) and also veterinarians older than 54 (n=3, 33.3%) strongly agreed and wanted to be their own boss, while the younger age group (veterinarians aged 23-34) were less sure and only 12.5% of them strongly agreed (n=6, 12.5%). The correlation of the age to this statement was even clearer amongst Hungarians ($p < 0.01$). The numbers for the older age groups that strongly agreed were higher than the lower age groups: 81.5% of the veterinarians older than 54 strongly agreed (n=22),

50.6% of the 35–54-year-olds strongly agreed (n=44) and 34.8% of the 23–34-year-olds strongly agreed (n=31). The gender showed a clear difference ($p < 0.001$). Over half of the Hungarian women agreed (n=27, 22.9%) or strongly agreed (n=42, 35.6%) that they wanted to be their own boss. A significant majority of males agreed (n=18, 21.2%) or strongly agreed (n=55, 64.7%).

The further important aspects are mentioned by Hungarian respondents (n=21): there were different formulations about the respect, appreciation and fairness of the colleagues and with the boss was a priority. Some of them mentioned that good communication was needed (n=6). A little less mentioned problems with the working hours. They prioritised a flexible working schedule or free weekends for proper rest to prevent burnout (n=5). A few also mentioned that they looked at the reported salary and social security options when choosing a job (n=3). Another one prioritised the equipment and standards that needed to be on a high level. Among Germans (n=4), most of them (n=3) mentioned that they needed the possibility to improve and have continuing education at their job position. The fourth one mentioned the way of getting to the job is important, which might mean the time needed and the options of public transport to get to and from the job.

The 35th question was about different options they would prefer in their current job. From the entire sample, around two third of the respondents (n=182) preferred the higher reported salary. The proportion of the wished benefits is shown in Chart 16. The categories followed each other in the same order for both countries. Hungarian veterinarians (n=129) would have chosen the higher salary (63.5%) and over 45 % would have chosen to have more time off (n=92). Over one quarter would choose fewer hours (n=58). In Germany, two third of them would also choose a higher salary (n=53). Over half of them would also choose to have more time off (n=41), and like the Hungarians, the third most wished for option was fewer working hours (n=29). Over 20% of the Hungarians (n=47) and Germans (n=16) would wish for a car or possible petrol allowance. The following wished options were included in the Others category by Hungarian respondents (n=15): better infrastructure, higher professional standards, there should be no difference between veterinarians, whether they are owners or employees, access to support as a start-up entrepreneur (e.g. purchase of equipment), help more people with a team of veterinarians, greater scope, better working conditions (e.g. tools, protocols), accepted decisions, long term thinking should be at the forefront, job security, regular salary increases following cost increases (not just inflation-linked), that income from a job which could support a family, meaningful work, support for professional development, equipment development, flat rate taxpayers in higher cost

brackets, more autonomy in decision-making, more work from home, more solvent owners and loyalty to the company. For Germans (n=8): overtime compensation (temporal or financial), recording of working hours, better planning of services, personal differences, appointment management, more appreciation, fewer weekend services.

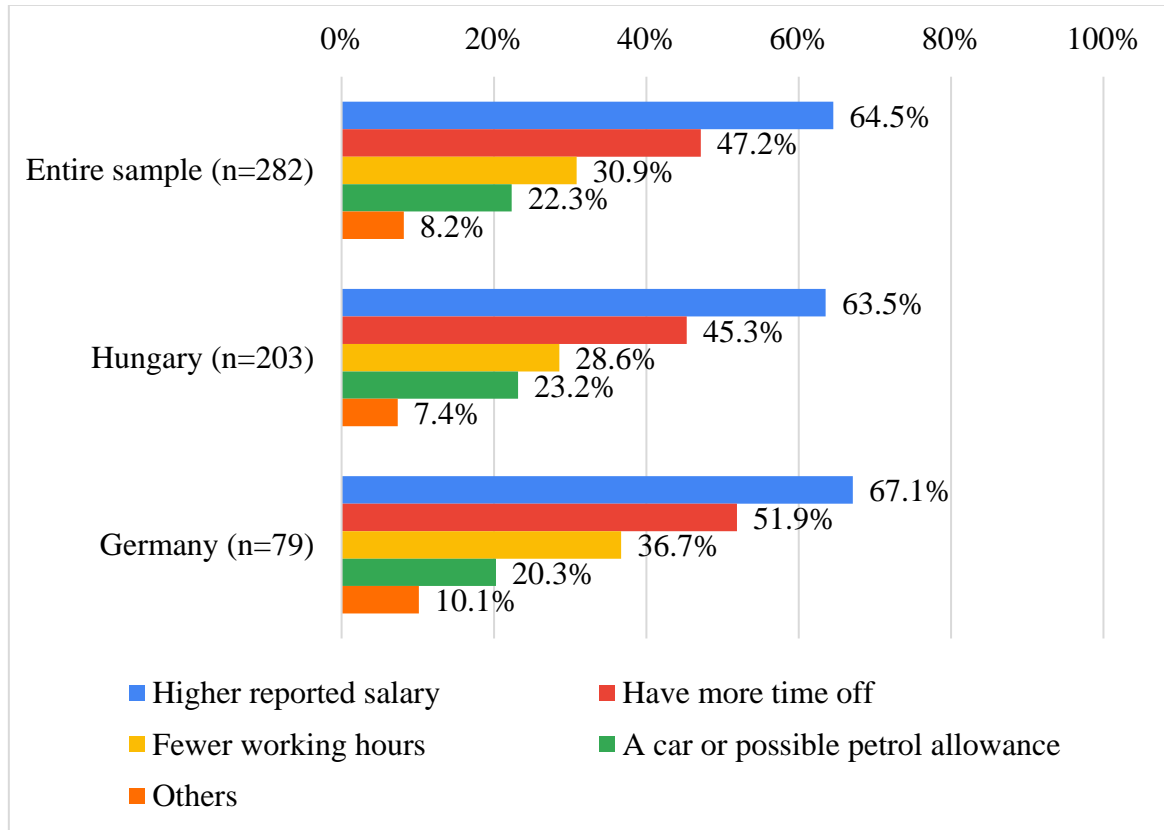


Chart 16. Proportion of veterinarians' wishes of the veterinary profession.

The 36th question was about other incomes that did not come from their veterinary work. From the entire sample, two thirds of veterinarians had no other income (n=186, 66.0%). Amongst Hungarian veterinarians, 59.6% did not have a second financial income (n=121). Over one fifth had a regular second income (n=45, 22.2%) and a little less of them had a second income but not a regular one (n=37, 18.2%). A large percentage of the German participants had no second income (n=65, 82.3%) which was significantly different from Hungarians' responses ($p<0.01$). Slightly over 10% had a second income that was regular (n=8, 10.1%) and only 7.6% of them (n=6) had a non-regular second income.

The 37th and final question was if they expected an increase in their salary soon. From the entire sample, half of the respondents (n=146, 51.8%) did not expect an increase and over one fifth of them answered that they did not know (n=52, 18.4%). Over half of the Hungarian veterinarians did not expect an increase in their salary (n=112, 55.2%). Around one quarter believed in a salary increase (n=56, 27.6%). Amongst German veterinarians, a little less did not expect a salary increase (n=34, 43.0%) than Hungarians, but one third of

them believed they would get an increase in salary soon (n=28, 35.4%) ($p=0.1864$). Female Hungarian veterinarians (n=22, 18.6%) expected less to get an increase in salary than their male counterparts (n=34, 40.0%) ($p<0.01$).

5. Discussion

The study showed that the work atmosphere and good colleagues are a very important factor when talking about the satisfaction in the job [12]. The veterinarians want to be treated with respect, fairness and get appreciation. This was confirmed by our results as good working conditions had the highest agreement of our statements (87.7% of Hungarians strongly agreed and 77.2% of the Germans strongly agreed) and Hungarian participants added fairness, respect and similar formulations to their priorities when looking for a job. This sounds logical but is more difficult than it seems. The stress especially in practices and clinics and as practice owners and in boss positions can easily lead to quick inattentive work towards their employees. The change in veterinary medicine developed towards losing hierarchy and openness towards the employees' ideas and hopes [28]. Both men and women were prioritising their work environment. But women preferred to work in teams with colleagues while men prioritised being their own boss and working independently [20–21].

Another important factor of satisfaction in this profession is the option to continuous education [23]. In our study, German participants mentioned continuous education as their priority when looking for a job. Younger owners/practice managers might pay more attention to the aspect of employee management and less hierarchy but because of their missing experience some might have problems teaching and supporting continuous education. The best would maybe be a combination of two owners/ practice managers, to minimise the stress of the individual and have the experience and employee management in place to ensure the best working conditions.

The veterinary field has a lot of problems with burn out and suicidal tendencies, and the younger graduates have the highest risk [51]. Women tend to be more likely for burnout [24, 47, 55], but also are more likely to seek help [53]. At most risk is those working in curative jobs, especially small animal medicine [48]. The number of working hours is also in correlation with burnout [24]. Our results showed that having more time off was the second highest priority of German and Hungarian veterinarians with 47.2%. To help with the mental stress and psychological problems in this profession, pet insurance could be supporting. Veterinarians often stand between proper treatment and the pet owners will [44]. The discussion about money for procedures would be way less and the problem withstanding

between the beliefs and the owner's wish would reduce [44]. Because more procedures would be possible, the salary might also improve. For now, pet insurance might not have spread because the selection is not wide enough and the requirements to get money back after the medical procedures might be too strict. Another possible support could be to offer working at home. It could improve family arrangements and can provide a break from stressful work environments. In our results 39.4% of Hungarian veterinarians strongly agreed to the importance of family friendly arrangements and 40.4% of German veterinarians strongly agreed. This aspect is difficult to combine with work in practices and clinics, but documentations and medication documentations could for example be prepared in the comfort of the home.

The results from most of the literature review [14, 17, 24] and the questionnaire showed that the salary in the curative field is the lowest. However, Jelenski et al. found the highest salary in the small animal field in Western Canada [27], which does not correspond with the other articles and our results. The starting salary improved in Canada by 5% from 2001 to 2002 [28]. The Hungarian veterinarians in 2020 believed that a salary between HUF 200,000 and 250,000 net in Small Animal Medicine for a beginner veterinarian would be appropriate [40]. In our study, almost half of the Hungarian participants agreed (22.7%) or strongly agreed (26.1%) that young veterinarians can charge the same amount of money for a treatment as an older and more experienced veterinarian. In Germany, only a little over a third agreed (24.1%) or strongly agreed (11.4%). Our results are different from the results from Mándoki in 2020 where the starting amount (below HUF 200,000 net) and salary amount for experienced vets (HUF 300,000 net) the participants believed were appropriate, had a significant difference [40]. The experience is in strong correlation with the earning amount, stated in the German study in 2021 [17].

A study in the USA showed that the newly graduates had more problems with paying off their debts than the older generations, who were able to pay off their debts in around 10 years [24]. Our results showed that the younger German veterinarians under 54 years old had less debts but were more likely to still need to pay them and almost 80% of the Hungarians never had debts. Because the low number of veterinarians in Hungary and Germany had debts, the problem described in a study in 2018, cannot be confirmed [24]. It said that veterinarians were forced to take unsatisfying employment to be able to pay off debts [24]. This might be the case for non-supported students who have added debts in the long years of study.

Finding a job was no problem for the newly graduates. The average search for a job took only a few months [22]. However, Putz et al. stated that there were more graduates than job positions [30], which contradicts with the results of our study and the study of Weigler et al. [22]. In our study, over 60% of German and over 60% of Hungarian participants strongly disagreed with our statement that they looked for a long time before they found a job. In addition, Putz et al. also mentioned that because of missing practical education the freshly graduated veterinarians had low market value, which was difficult to improve [30].

The salary overall was low in Hungary in comparison to the other European countries, which also fit with our results about the salary satisfaction [14]. The results of the wished for salary in comparison with the actual salary also showed a clear difference. In the Hungarian questionnaire 19.2% of the veterinarians earned over 900,000 HUF gross while 46.3% wished this amount and would find it appropriate. In Germany, the desired salary was over EUR 5,000 gross by 7.6% of the respondents. Germany already has a table of payment suggestions that can help to educate about the appropriate salary. It is an improvement, but it is not used in many cases. The gender wage gap is still a problem in the veterinary fields [11, 14]. But the tendency was going in the right direction and the gender wage gap was decreasing [14]. Our results did show a gender wage gap. Only 5.9% male Hungarians had a salary of under HUF 300,000 gross while 10.2% of female Hungarians had a salary of less than HUF 300,000 gross and 32.9% of men had a salary of over HUF 900,000 gross compared to 9.3% of women. The German results showed that no male was earning under EUR 3,000 gross while 16.6% of women were earning under that amount. In the German questionnaire were only 7 male participants which could have been a too low amount to have a meaningful result.

Hungary also was ranked low in the European study about the satisfaction of business management [14]. This could be confirmed by the answers we received about the Hungarian respondents' priorities in jobs. Many answered that they paid most attention to the registration of their salary. Veterinarians in Hungary have the problem that they are not registered for normal wage, but sometimes only for minimum wage. The registered and reported wages might not be the actual salary that they receive. This could be a reason for these unsatisfied veterinarians. When looking at the working hours in Germany it was possible to see that some were working more hours than the law allows. 12.7% of the German participants work over 50 hours a week. In many cases, the overtime does not get paid [17]. The average working hours were between 31 and 50 hours per week [30]. In 2020, 65.4% of Hungarian veterinarians got on call duties [40]. Similar to those results we found that only

37.9% of both German and Hungarian veterinarians did not undertake on-call duties, night shifts and weekend work. The working hours for women were less than for men which might be influenced by traditional gendered tasks like caring for a child and family. The mental stress could be a reason why they keep working over their paid hours. The beliefs to save and help the animals can satisfy the work [30]. However, these conditions are the reasons why the rate of burnouts and suicide are so high in the veterinary field. One measure to prevent unpaid overtime is to note the hours digitally. When arriving the time starts counting and when leaving it stops. By having exact numbers documented, it will be possible to realise the problem, which can be the first step in the right direction.

Written employment contracts are normal for the average veterinarian [28]. But they should include the amount they get paid for their overtime or what kind of compensation was agreed to improve this situation. A new idea for better working hours could be telemedicine. It could be used for night shifts to estimate if it is necessary to come to the clinic or not. But it might not be satisfactory for everyday medicine, because there might be challenges with legal liability and proper assessment of the situations.

Overall, to ensure that there will be enough veterinarians in the future with minimal psychological problems, it is necessary to ensure a proper payment and regulated hours. The curative work is less appealing because of night shift and on-call duties, though it is still the largest work field in the veterinary profession [23–24]. This is probably because the work with animals is the primary wish and belief for most veterinarians. The on-call duties have a significant impact on the likelihood to change job positions [50]. Employees with higher salaries were also less likely to look for a new job [31]. Not even half of the Hungarian veterinarians did on-call duties in 2020 [40]. Our study showed that more than half did night or on-call services. Around one third worked 1-2 times a month at night or on call. For Germany even one quarter of the veterinarians participated in night or on call duties 1-2 times a month. The non-curative jobs tend to have better and more stable work hours and better payment which are prioritised by more veterinarians [22, 30].

To keep the veterinarians motivated in the curative jobs it would be necessary to adjust the salary accordingly and prioritise their mental health. This can only be achieved by a good teamwork of all students, new graduates and veterinarians in the veterinary profession as well as educational locations like universities. Additionally, it is necessary to inform and educate animal holders as all stakeholders need to contribute to growing and changing the veterinary field.

6. Summary

The veterinary profession has recently undergone a major change due to the gender shift balance. The gender gap is significantly larger among younger age groups and career entrant veterinarians. The present study examines the main factors contributing to identify variations in salary, salary demand and satisfaction among veterinarians in Hungary and Germany. The survey was carried out using an online questionnaire and it examined country, age group and gender preferences and focused on the challenges associated with job satisfaction in veterinary medicine. By means of Google Forms, an online questionnaire composed of 39-questions was created and completed between 2nd October 2022 and 8th October 2023. A total of 282 veterinarians from Hungary and Germany completed the questionnaire: 203 from Hungary and 79 from Germany. The responses were analysed using Pearson's chi-square test.

The results showed that most of the responding Hungarian veterinarians had a gross salary of HUF 450,001-600,000. In terms of age, 44.4% of veterinarians older than 54 had a gross salary over HUF 900,000 compared to veterinarians aged 23-34 (11.4%) and 35-54 (19.5%) ($p < 0.01$). In addition, more males (32.9%) had a gross salary of over HUF 900,000 compared to females (9.2%) ($p < 0.0001$). At the same time, almost half of the Hungarian veterinarians believed a gross salary of over HUF 900,000 would be appropriate. Most German participants (68.4%) had a gross salary of over EUR 3,001 and more than 80% believed that a salary above this would be appropriate. Almost half of Hungarian veterinarians (49.8%) strongly disagreed with the statement that they would not choose this profession again, compared to 38.0% of German veterinarians. Otherwise, more veterinarians aged 23-34 (73.0%) had not changed their professional field compared to veterinarians older than 54 (40.7%) ($p < 0.0001$). Good working atmosphere and working conditions, work-life balance and flexible and predictable working hours were the most important aspects for veterinarians. However, 40.4% of the Hungarian participants, while only 15.2% of German veterinarians strongly agreed that a higher salary is important ($p < 0.0001$). Almost half of the Hungarian participants strongly wanted to be their own boss (47.8%) compared to German veterinarians (20.3%) ($p < 0.0001$) and 35.6% of the Hungarian women strongly agreed, but a significant majority of males strongly agreed with this statement (64.7%) ($p < 0.001$).

In order to keep veterinarians motivated in their curative profession, salaries should be set accordingly and mental health should be prioritised. This could be achieved through good cooperation between all stakeholders in the veterinary profession, so that the veterinary field can develop and change in an even more positive direction.

7. Összefoglalás

Az állatorvosi szakma a közelmúltban jelentős változáson ment keresztül a nemek közötti egyensúly eltolódása miatt. A nemek közötti különbség jelentősen nagyobb a fiatalabb korosztályok és a pályakezdő állatorvosok körében. Jelen tanulmány a magyarországi és németországi állatorvosok körében vizsgálja a fizetés, a bérigény és az ezekkel kapcsolatos elégedettség eltéréseinek azonosításához hozzájáruló fő tényezőket. A felmérést online kérdőív segítségével végeztük, az ország, a korcsoport és a nemek közötti preferenciákat vizsgáltuk, összpontosítva az állatorvosi munkával való elégedettséggel kapcsolatos kihívásokra. Egy 39 kérdést tartalmazó online kérdőívet (Google Forms) állítottunk össze, amelyet 2022. október 2. és 2023. október 8. között töltöttek ki a válaszadók. Összesen 282 állatorvos töltötte ki a kérdőívet a két országból: 203 fő Magyarországról és 79 fő Németországból. A válaszokat Pearson-féle khi-négyzet próbával elemeztük.

Az eredmények azt mutatták, hogy a legtöbb válaszadó magyar állatorvos bruttó 450.001-600.000 Ft közötti fizetéssel rendelkezett. Az életkort tekintve az 54 évnél idősebb állatorvosok 44,4%-a rendelkezett 900.000 Ft feletti bruttó fizetéssel, szemben a 23-34 éves (11,4%) és a 35-54 éves (19,5%) állatorvosokkal ($p < 0,01$). Emellett, több férfi (32,9%) rendelkezett 900.000 Ft feletti bruttó fizetéssel, mint nő (9,2%) ($p < 0,0001$). Ugyanakkor a magyar állatorvosok közel fele tartotta volna megfelelőnek a 900.000 Ft feletti bruttó fizetést munkájukért. A legtöbb német résztvevő állatorvos (68,4%) bruttó 3.001 € feletti fizetéssel rendelkezett, és több mint 80% úgy vélte, hogy az e feletti fizetés felel meg munkájukért. A magyar állatorvosok közel fele (49,8%) egyáltalán nem értett egyet azzal az állítással, hogy nem választaná újra ezt a szakmát, szemben a német állatorvosok 38,0%-os arányával. Azonban, több 54 évnél idősebb állatorvos (73,0%) váltott szakmai területet, mint a 23-34 éves korosztály (40,7%) ($p < 0,0001$). A jó munkahelyi légkör és a megfelelő munkakörülmények, a munka és a magánélet egyensúlya, valamint a rugalmas és kiszámítható munkaidő voltak a legfontosabb tényezők az állatorvosok számára. Ugyanakkor a magyar résztvevők 40,4%-a, míg a német állatorvosoknak csak 15,2%-a értett egyet teljes mértékben azzal, hogy a magasabb fizetés fontos ($p < 0,0001$). A magyar résztvevők majdnem fele erősen vágyott arra, hogy a munkában a maga ura legyen (47,8%), szemben a német állatorvosokkal (20,3%) ($p < 0,0001$). A magyar állatorvos nők 35,6%-a, míg a férfiak jelentős többsége (64,7%) teljes mértékben egyetértett ezzel az állítással ($p < 0,001$).

Annak érdekében, hogy az állatorvosok motiváltak tudjanak maradni a gyógyító hivatásukban, a fizetéseket ennek megfelelően lenne szükséges kialakítani, és a mentális egészség megőrzését kiemelten kezelni. Ezt az állatorvosi szakma valamennyi érdekelt felei közötti jó együttműködéssel lehetne elérni, hogy az állatorvosi szakma fejlődhessen és még pozitívabb irányba változhasson.

8. References

1. RCVS (2016) RCVS Facts 2014. In: RCVS. <https://www.rcvs.org.uk/news-and-views/publications/rcvs-facts-2014/> Accessed 2 Nov 2023
2. RCVS (2023) RCVS Facts 2021. In: RCVS. <https://www.rcvs.org.uk/news-and-views/publications/rcvs-facts-2021/?destination=%2Fnews-and-views%2Fpublications%2F>. Accessed 2 Nov 2023
3. Berrada M, Ndiaye Y, Raboisson D, Lhermie, G (2022) The gender wage gap in the French veterinary labor market. *Front Vet Sci* 9:1001012. <https://doi.org/10.3389/fvets.2022.1001012>
4. Veterinary women: past, present and future (2015) In: *Veterinary Woman*. <https://www.veterinarywoman.co.uk/2015/02/veterinary-women-past-present-and-future/>. Accessed 2 Nov 2023
5. Wuest P (2021) Assessing the Gender Pay Gap in Veterinary Medicine. In: *Today's Veterinary Practice*. <https://todaysveterinarypractice.com/diversity-equity-inclusion/assessing-the-gender-pay-gap-in-veterinary-medicine/>. Accessed 2 Nov 2023
6. Machin S, Puhani PA (2003) Subject of degree and the gender wage differential: evidence from the UK and Germany. *Econ Lett* 79:393-400. [https://doi.org/10.1016/S0165-1765\(03\)00027-2](https://doi.org/10.1016/S0165-1765(03)00027-2)
7. Smith DM (2002) Pay and productivity differences between male and female veterinarians. *ILR Review* 55:493-511. <https://doi.org/10.1177/001979390205500306>
8. Volk JO, Felsted KE, Cummings RF, Slocum JW, Cron WL, Ryan KG, Moosbrugger MC (2005) Executive summary of the AVMA-Pfizer business practices study. *J Am Vet Med Assoc* 226:212-218. <https://doi.org/10.2460/javma.2005.226.212>
9. Bristol DG (2011) Gender differences in salary and practice ownership expectations of matriculating veterinary students. *J Am Vet Med Assoc* 239:329-334. <https://doi.org/10.2460/javma.239.3.329>
10. Furnham A, Wilson E (2011) Gender differences in estimated salaries: A UK study. *J Soc Econ* 40:623-630. <https://doi.org/10.1016/j.socec.2011.04.019>
11. Segal D (2013) High debt and falling demand trap new vets. In: *New York Times*, 23. <https://eden.nationbuilder.com/assets/pages/1/HighDebtandFallingDemandTrapNewVets.docx>. Accessed 15 July 2023
12. Kersebohm JC, Doherr MG, Becher AM (2017) Long working hours, low income and dissatisfaction: comparison of veterinary practitioners' situation and similar professions of the German general population. *Berl Munch Tierarztl* 130:449-460
13. Weiss JF (2017) An investigation into the starting salaries of male and female veterinarians. Colorado State University, Fort Collins
14. FVE (2018) Survey of the Veterinary Profession in Europe. In: FVE. https://fve.org/cms/wp-content/uploads/FVE_Survey_2018_WEB.pdf. Accessed 22 oct 2023
15. Kersebohm JC (2018) Praktiker im Wandel: Untersuchung der Arbeitsbedingungen und Zufriedenheiten praktizierender Tiermediziner in Deutschland (2016). Freie Universitaet Berlin. <https://refubium.fu-berlin.de/handle/fub188/7585>
16. Comba AL (2020) Geschlechterspezifische Chancen und Herausforderungen in der Veterinärmedizin in Deutschland—Resultate einer Umfrage. Freie Universitaet Berlin. <https://www.proquest.com/openview/fbe84f7ba46759910277da311f3d59d3/1?pq-origsite=gscholar&cbl=2026366&diss=y>
17. Ewert MC (2021) Untersuchung der Arbeitsumstände und Zufriedenheit nicht-kurativ tätiger Tiermediziner* innen in Deutschland (2018). Freie Universitaet Berlin. <https://refubium.fu-berlin.de/handle/fub188/31325>

18. Ryan EG, Beatty SH, Gray E, Field N, Liston R, Rhodes V, Donlon J (2022) Factors affecting retention of veterinary practitioners in Ireland: a cross-sectional study with a focus on clinical practice. *Ir Vet J* 75:1-15. <https://doi.org/10.1186/s13620-022-00222-9>
19. Quadlin N, VanHeuvelen T, Ahearn CE (2023) Higher education and high-wage gender inequality. *Soc Sci Res* 112:102873. <https://doi.org/10.1016/j.ssresearch.2023.102873>
20. Horváth L, Bendzsel D, Ózsvári L (2021) The gender shift in veterinary medicine and its impact on veterinary profession in Hungary. *Magy Állatorvosok Lapja* 143:479-496
21. Tóth I (2020) Az állatorvosi munkavégzésre vonatkozó preferenciák felmérése Magyarországon. Állatorvostudományi Egyetem, Budapest
22. Weigler BJ, Thulin JD, Vandewoude S, Wolfle TL (1997) The supply and demand for laboratory animal veterinarians from 1980 to 2005. *J Am Assoc Lab Anim Sci* 36:39-46
23. Jelinski MD, Lissemore K (2015) Retrospective analysis of survey data relating to the employment conditions of Canadian veterinary graduates for the years 2008 to 2013. *Can Vet J* 56:1057-1063
24. Hansen C, Salios M, Bain B, Ouedraogo F, Dutton B (2018) 2018 AVMA Report on the Market for Veterinarians. Colorado State University, Fort Collins
25. Kersebohm JC, Lorenz T, Becher A, Doherr MG (2017) Factors related to work and life satisfaction of veterinary practitioners in Germany. *Vet Rec Open* 4:e000229. <https://doi.org/10.1136/vetreco-2017-000229>
26. Jelinski MD, Barth KK (2015) Survey of western Canadian veterinary practices: A demographic profile. *Can Vet J* 56:1245-1251
27. Jelinski MD, Campbell JR, Naylor JM, Lawson KL, Derkzen D (2009) Demographic survey of veterinarians employed in western Canada. *Can Vet J* 50:621-629
28. Tait J (2002) The evolving workplace for new veterinary graduates. *Can Vet J* 43:469-471
29. Fassang E (2020) A magyarországi állatorvosok bérigényeinek változása generációk szerint. Állatorvostudományi Egyetem, Budapest
30. Putz I, Mosberger B, Kreiml T, Kaupa I, Denkmayr E (2008) Berufseinstieg, Jobberfahrungen und Beschäftigungschancen von UNI-AbsolventInnen. Eine empirische Erhebung unter JungabsolventInnen der Studienrichtungen Geschichte, Humanmedizin, Rechtswissenschaften, Translationswissenschaft und Veterinärmedizin, AMS Österreich, Abteilung Arbeitsmarktforschung und Berufsinformation (ABI), Wien. <https://ams-forschungsnetzwerk.at/downloadpub/07038%20Endbericht%20Berufseinstieg%20AkademikerInnen%20280208.pdf>
31. Hagen JR, Weller R, Mair TS, Kinnison T (2020). Investigation of factors affecting recruitment and retention in the UK veterinary profession. *Vet Rec* 187:354-354. <https://doi.org/10.1136/vr.106044>
32. FVE (2015) Survey of the Veterinary Profession in Europe. In: FVE. https://fve.org/cms/wp-content/uploads/FVE-Survey-ALL-280416_AMENDED-April-2016.pdf. Accessed 22 Oct 2023
33. Bristol DG (2002) Using alumni research to assess a veterinary curriculum and alumni employment and reward patterns. *J Vet Med Educ* 29:20-27. <https://doi.org/10.3138/jvme.29.1.20>
34. Begeny C, Ryan M (2018) Gender discrimination in the veterinary profession. *Policy* 20:6370
35. Wieland B, Amarsanaa L (2014) Survey on gender equalities in the veterinary sector in Mongolia. In: Swiss Agency for Development and Cooperation SDC. https://www.eda.admin.ch/dam/countries/countries-content/mongolia/en/AFS_Gender_Survey_Veterinary_2014_Mongolia.pdf. Accessed on 21 August 2023

36. Neill CL, Kakpo AT, Mack R (2021) The role of experience, specialty certification, and practice ownership in the gender wage gap for veterinarians in the United States. *J Am Vet Med Assoc* 258:591-600. <https://doi.org/10.2460/javma.258.6.591>
37. Dodge LE, Koontz SR (2020) Explaining earnings variation of bovine veterinarians in private practice. *Bov Pract* 54:41-50. <https://doi.org/10.21423/bovine-vol54no1p41-50>
38. Shen Y, Knippenberg R, Dicks M (2015) The gender wage gap in veterinary medicine: Is clinical confidence a factor? In: *DVM360*. https://www.avma.org/sites/default/files/resources/2015-10-01_The-gender-wage-gap-in-veterinary-medicine_Is-clinical-confidence-a-factor_.pdf. Accessed 15 May 2023
39. Neill CL, Holcomb RB, Brorsen BW (2017) Starting on the right foot: does school choice affect veterinarian starting salaries? *J Agric Appl Econ* 49:120-138. <https://doi.org/10.1017/aae.2016.28>
40. Mándoki M (2020) Az állatorvosok fizetésének alakulása Magyarország régiói és szakterületek szerint. *Állatorvostudományi Egyetem, Budapest*
41. Kreisler RE, Spindel ME, Rishniw M (2020) Surveys of salary, benefits, and job responsibilities for veterinarians employed in the field of shelter medicine in the United States conducted in 2011 and 2018. *Top Companion Anim Med* 39:100430. <https://doi.org/10.1016/j.tcam.2020.100430>
42. Morello SL, Shiu KB, Thurston J (2022) Comparison of resident and intern salaries with the current living wage as a quantitative estimate of financial strain among postgraduate veterinary trainees. *J Am Vet Med Assoc* 260:124-132. <https://doi.org/10.2460/javma.21-07-0336>
43. Dicks MR (2015) How to predict Veterinary Compensation-Part 2. In: *DVM360*. https://www.researchgate.net/profile/Michael-Dicks-2/publication/280879011_How_to_predict_Veterinary_Compensation_-_Part_2/links/55c9eb9108aea2d9bdc1308/How-to-predict-Veterinary-Compensation-Part-2.pdf. Accessed 12 June 2023
44. Brastad VLS (2022) Between Two Worlds-Identification of Perception Gap between Customer and Veterinarian. *Norwegian University of Science and Technology, Ålesund*. <https://ntnuopen.ntnu.no/ntnu-xmlui/handle/11250/3015506>
45. Tomasi SE, Fechter-Leggett ED, Edwards NT, Reddish AD, Crosby AE, Nett RJ (2019) Suicide among veterinarians in the United States from 1979 through 2015. *J Am Vet Med Assoc* 254:104-112. <https://doi.org/10.2460/javma.254.1.104>
46. Engel GL (1977) The need for a new medical model: A challenge for biomedicine. *Science* 196:129-136
47. Shirangi A, Fritschi L, Holman CDJ, Morrison D (2013) Mental health in female veterinarians: effects of working hours and having children. *Aust Vet J* 91:123-130. <https://doi.org/10.1111/avj.12037>
48. Neill CL, Hansen CR, Salois M (2022) The economic cost of burnout in veterinary medicine. *Front Vet Sci* 9:814104. <https://doi.org/10.3389/fvets.2022.814104>
49. Arbe Montoya AI, Hazel SJ, Hebart ML, McArthur ML (2021) Risk factors associated with veterinary attrition from clinical practice: a descriptive study. *Aust Vet J* 99:495-501. <https://doi.org/10.1111/avj.13111>
50. Arbe Montoya AI, Hazel SJ, Matthew SM, McArthur ML (2021) Why do veterinarians leave clinical practice? A qualitative study using thematic analysis. *Vet Rec* 188:e2. <https://doi.org/10.1002/vetr.2>
51. Várnai CH (2022) International comparative study on suicidal tendency among veterinarians. *University Of Veterinary Medicine Budapest*. <http://huveta.hu/handle/10832/3498>

52. Stetina BU, Krouzecky C (2022) Reviewing a decade of change for veterinarians: past, present and gaps in researching stress, coping and mental health risks. *Animals* 12:3199. <https://doi.org/10.3390/ani12223199>
53. Dalum HS, Tyssen R, Hem E (2022) Prevalence and individual and work-related factors associated with suicidal thoughts and behaviours among veterinarians in Norway: a cross-sectional, nationwide survey-based study (the NORVET study). *BMJ open*, 12:e055827. <http://dx.doi.org/10.1136/bmjopen-2021-055827>
54. R Core Team (2022) *R: A language and environment for statistical computing*. R Foundation for Statistical Computing, Vienna, Austria
55. Steffey MA, Griffon DJ, Risselada M, Scharf VF, Buote NJ, Zamprogno H, Winter AL (2023) Veterinarian burnout demographics and organizational impacts: a narrative review. *Front Vet Sci* 10:1184526. <https://doi.org/10.3389%2Ffvets.2023.1184526>

9. Acknowledgements

The biggest "Thank you" goes to Dr. Marietta Máté for her expertise and knowledge that helped me have trust in the process. I really appreciated her reliable responsiveness, her perspectives and ongoing support. Without her initiative and engagement to obtain Hungarian data and statistics, this research would not have been possible. I will always be grateful for the opportunity to collaborate with her on this thesis.

Furthermore, I would like to thank my family and friends, who supported me in the background throughout this process by having an open ear for my challenges and achievements.

I hereby confirm that I am familiar with the content of the thesis entitled

Differences in salary demand according to age groups and gender among veterinarians in Hungary and Germany

..... written by Eva Schwarz

(student name) which I deem suitable for submission and defence.

Date: Budapest, 03 day 11 month 2023 year

Mate' Marietta

Dr Marietta Máté

Supervisor name and signature

Department of Veterinary
Forensics and Economics

Department



Thesis progress report for veterinary students

Name of student: Eva Schwarz

Neptun code of the student: JWZCIS

Name and title of the supervisor: Dr Marietta Máté, research fellow

Department: Department of Veterinary Forensics and Economics

Thesis title: Differences in salary demand according to age groups and gender among veterinarians in Hungary and Germany

Consultation – 1st semester

	Timing			Topic / Remarks of the supervisor	Signature of the supervisor
	year	month	day		
1.	2023	02	15	Planning the research for this semester, continuing to complete the questionnaire used for the study	Mate' Marietta
2.	2023	02	23	Continuing to complete the questionnaire used for the study	Mate' Marietta
3.	2023	03	23	Collecting and studying of the relevant national and international literature	Mate' Marietta
4.	2023	04	11	Writing the Introduction of the thesis	Mate' Marietta
5.	2023	05	05	Further collecting and studying of the relevant national and international literature and writing the Literature review of the thesis	Mate' Marietta

Grade achieved at the end of the first semester: *Excellent (5)*



Consultation – 2nd semester

	Timing			Topic / Remarks of the supervisor	Signature of the supervisor
	year	month	day		
1.	2023	10	08	Completing and closing the questionnaire and writing the Materials and Methods of the thesis	Mate' Manetta
2.	2023	10	10	Processing some of the data collected and writing the Results of the thesis	Mate' Manetta
3.	2023	10	17	Further processing of the collected data and writing the Discussion of the thesis, concluding own results	Mate' Manetta
4.	2023	11	02	Writing and finalising the Summary of the thesis	Mate' Manetta
5.	2023	11	03	Acceptance of the final form of the thesis	Mate' Manetta

Grade achieved at the end of the second semester: *Excellent (5)*

The thesis meets the requirements of the Study and Examination Rules of the University and the Guide to Thesis Writing.

I accept the thesis and found suitable to defence,

..... *Mate' Manetta*

signature of the supervisor

Signature of the student: *E. János*

Signature of the secretary of the department: *Béla Kiszta*

Date of handing the thesis in *10th November 2023*