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Carrier Plans of Veterinary Faculty Students After Graduation and Their Expectations Regarding Working Conditions

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Abstract: The objective was to determine the distribution of future carrier preferences of Istanbul University-Cerrahpasa Veterinary Faculty students and the factors affecting this distribution. Data were collected via face-to-face questionnaires from 327 and 347 students who were in their 3rd, 4th, and 5th year and who responded to the survey in 2015 and 2021. The questionnaire consists of two parts: in the first part, students' gender, class, place of birth, grade point averages and income levels of their families. In the second part, the field they want to work in after graduation, their expectations regarding working conditions, and their monthly income were questioned. Gender has a highly significant effect on students' career choices in both years ($P<0.001$). While the first choice of female students in both years was the companion animal clinic, the first choice of male students was the farm animal practice in 2015 and the companion animal clinic in 2021. Monthly family income significantly affected student career choices in 2015 while not in 2021. It is seen that 39.4% of the students whose monthly family income is below 685 USD preferred farm animal practice. In comparison, 51.1% of students whose family income is 1601-2050 USD prefer to work in companion animal clinics. The study's findings of the study highlight the importance of gender, hometown and monthly family income considerations in shaping the career plans of veterinary students. There was also an apparent decrease in preference for farm animal practice and an increase in companion animal practice.

Keywords: Career choices, education, professional expectations, undergraduate, veterinary student

Veteriner Fakültesi Öğrencilerinin Mezuniyet Sonrası Kariyer Planları ve Çalışma Koşullarına İlişkin Beklentileri

Öz: Çalışmanın amacı, İstanbul Üniversitesi-Cerrahpaşa Veteriner Fakültesi öğrencilerinin gelecekteki meslek tercihlerinin dağılımını ve bu dağılımı etkileyen faktörleri belirlemektir. Veriler, 2015 ve 2021 yıllarında ankete yanıt veren 3., 4. ve 5. sınıfta okuyan 327 ve 347 öğrenciden yüz yüze anket yoluyla toplanmıştır. Anket iki bölümden oluşmaktadır: Birinci bölümde öğrencilerin cinsiyeti, sınıfı, doğum yeri, not ortalamaları ve ailelerinin gelir düzeyleri; ikinci bölümde ise veteriner hekim olarak aylık gelir beklentileri, mezuniyetten sonra çalışmak istedikleri alan ve çalışma koşullarına ilişkin beklentileri sorgulanmıştır. Cinsiyetin her iki yılda da öğrencilerin kariyer tercihleri üzerine oldukça anlamlı bir etkisi olduğu tespit edilmiştir ($P<0.001$). Kız öğrencilerin her iki yılda da ilk tercihleri küçük hayvan hayvan kliniği iken, erkek öğrencilerin ilk tercihi 2015 yılında çiftlik hayvanı pratiği, 2021 yılında ise küçük hayvan kliniği olmuştur. Aylık aile geliri öğrencilerin kariyer seçimlerini 2015 yılında önemli ölçüde etkilerken 2021 yılında etkilememiştir. Aylık aile geliri 685 ABD dolarının altında olan öğrencilerin %39.4'ünün çiftlik hayvanı pratiğini tercih ettiği görülmektedir. Aile geliri 1601-2050 ABD doları olan öğrencilerin %51.1'i küçük hayvan kliniklerinde çalışmayı tercih etmektedir. Çalışma bulguları, veterinerlik öğrencilerinin kariyer planlarını şekillendirmede cinsiyet, doğum yeri ve aylık aile geliri etkilerinin önemini vurgulamaktadır. Çiftlik hayvanı pratiğine olan tercihte belirgin bir azalma ve küçük hayvan hayvan pratiğinde ise artış olduğu da görülmüştür.

Anahtar kelimeler: Kariyer tercihi, eğitim, lisans, mesleki beklenti, veteriner fakültesi öğrencisi

Introduction

Several scientific studies have investigated the factors affecting the working area preferences of veterinary students and their expectations regarding working conditions. Demographic factors such as age, gender, and prior experience significantly affect career choices and attitudes toward different veterinary

fields. Background experience before admission to veterinary school and personal interests strongly influence the choice between small-animal practice, large-animal practice, research, and other specializations. People who experience interacting with animals during their childhood display long-term preferences and attitudes towards animals in the later stages of their lives (Serpell, 2004). Veterinary students are among the representatives of this idea (Serpell, 2005). Studies show that most veterinarian candi-

dates prefer the profession with a pre-existing interest and love for animals (Heath et al., 1996). It is reported that veterinarians who prefer companion animal clinics after graduation adopt animals in the early stages of their lives, and female veterinarians prefer farm animal practice less than men (Kinnison and May, 2013; Serpell, 2005). Veterinarians work in many different areas, especially in farm animal practice, companion animal clinics, food hygiene and safety, pharmaceutical and feed industries. The demand for veterinarians depends on various factors such as the prevalence of livestock farming, rates of pet ownership, and the level of development of the food, feed and pharmaceutical industries.

This study aimed to determine the distribution of future carrier preferences among Istanbul University-Cerrahpasa Veterinary Faculty students and the factors affecting this distribution. Knowledge of which fields veterinary medicine graduates would prefer to work in can contribute significantly to the planning of veterinary faculty education and to taking action to include graduates in practice areas that are less preferred. In addition, this study tested the hypothesis that the Turkish economic crisis and the pandemic impacted students' career choices and monthly income expectations. In this context, the survey results of 2015 and 2021 were compared.

Material and Methods

The Istanbul University-Cerrahpasa ethics committee approved the study's appropriateness (Approval number: 2021/304).

Questionnaire and Participants

In this study 327 and 347 students in their 3rd, 4th, and 5th year at Istanbul University-Cerrahpasa, the Faculty of Veterinary Medicine, responded to the survey in 2015 and 2021, respectively. No sampling was conducted within the scope of the study. All 3rd, 4th, and 5th-year students at the current IUC Faculty of Veterinary Medicine were invited to participate in this study. The data of the students who volunteered to participate in the study are presented in the article. The study conducted in 2015 was repeated in 2021 to reveal the post-graduation career preferences of IUC Faculty of Veterinary Medicine students and whether the factors affecting these preferences have changed after the pandemic and economic crisis. Within the scope of the study, a 10-question survey was conducted to determine the distribution of carrier choices of veterinary students and the factors affecting this distribution. The questionnaire consisted of two parts. In the first part, participants were asked to give demographic information such as gender, class,

hometown, grade points average (GPA), and family income. In the second part, students' career choices after graduation (farm animal practice, companion animal clinic, equine practice, poultry practice, feed industry, food hygiene and safety, pharmaceutical industry, public employee, academia), their monthly income expectations as a veterinarian, and their expectations regarding working conditions were questioned. The minimum wage was used to create monthly income expectation ranges. The monthly income expectation range was asked in TL to the students, and to compare income expectation in different time periods, it was converted to USD using the Central Bank of Türkiye exchange rate for the relevant period. Students' monthly income expectation range were <1140 USD, 1141 – 1370 USD, 1371 – 1600 USD, 1601 – 1830 USD, 1831 – 2050 USD, and >2050 USD. During the data editing, students' GPA information was transformed into the following four categories: i. <2, ii. 2.00-2.49, iii. 2.50-2.99, iv. >3.00. Hometown data consists of metropolis, city, and rural/village. Students were informed about the questionnaire, and participation in the study was voluntary. The questions about the identity information of the students were not included in the questionnaire.

Statistical Analyses

The study considered the student's daily working hours expectation, working time expectation, income expectation and career preference as dependent variables. The independent samples chi-square test of association was used to compare the subgroups of the student's gender, class, hometown, GPA and monthly family income, and year factors in terms of dependent variables. In case of statistical significance, pairwise chi-square or Fisher's exact test was applied to determine which subgroup differences were significant. The significance for averages with more than 3 letters was expressed in the tables by placing a hyphen between the first and last letters. The statistical significance level was determined as $P < 0.05$. To summarize the data, n (%) was used. All analyses were performed with the Jamovi 2.3.28 program (The Jamovi Project, 2025).

Results

Table 1 presents the demographic information of the respondents and percentages of students in each subgroup. Demographic information of respondents shows that most of the participants in 2015 and 2021 were male (57.80% and 51.9%). Approximately 92% of participants in both years came from metropolises and cities, while 7% of them came from rural areas. While the monthly income of the families of 44% of the

students who participated in the survey conducted in 2015 was below 1141 USD, it is seen that this proportion increased to 67.7% in 2021.

The effects of respondents' gender, class, hometown, GPA, and family income on the students' expectation of daily working time as a veterinarian are represented in Table 2. Gender has a significant effect on expectation of daily working time in 2021, while monthly family income has a significant effect in 2015 ($P < 0.05$). In 2021, whereas 69.7% of female students preferred an 8 h working in a day, 60.7% of male students preferred it. Moreover, 21.9% of male students preferred 8-12 h working in a day, while 11.5% of female students preferred it. On the other hand, the year generally effects on expectations of daily working time. The percentage of students preferring less than 8 h, and 8-12 h working a day in 2015 and 2021 decreased from 25.7% and 18.3% to 18.1 and 16.9%, respectively. In contrast, the students' 8 h working a day preference increased in 2021 compared to 2015.

Preferences for the time periods in which students want to work during the day are shown in Table 3. The results point out that gender, GPA, and monthly family income affect students' preferences for the working time period. Moreover, the effect of the year on the expectation of daily working period was also found significant. It is seen that the daytime preferences of students decreased from 76.8% to 57.3%, while "no

matter" preferences increased from 17.1% to 41.2% in 2021 compared to 2015.

The effects of respondents' gender, class, hometown, GPA, and family income on their income expectations in 2015 and 2021 are given in Tables 4 and 5. The results indicate that monthly family income can affect students' income expectations in 2015 and 2021, moreover gender and class also affect it in 2021.

The influence of respondents' gender, class, hometown, GPA, and family income on the career choices of veterinary students in 2015 and 2021 are represented in Tables 6 and 7. Considering the overall evaluation, while the career choices of the students in 2015 are listed as companion animal clinic, farm animal practice, food hygiene and safety, and public employee, those in 2021 are listed as companion animal clinic, academia, farm animal practice, and food hygiene and safety. Moreover, the effects of respondents' gender, hometown, GPA, and monthly family income on their career choices were significantly important in both years. In addition, Table 8 represents P-values for the year effect regarding monthly income expectation and students' career choices.

Table 1. Demographic information of respondents

Items	2015		2021	
	Frequency n	Percentage %	Frequency n	Percentage %
Gender				
Male	189	57.80	180	51.9
Female	138	42.20	167	48.1
Class				
3	110	33.64	101	29.1
4	117	35.78	85	24.5
5	100	30.58	161	46.4
Hometown				
Metropolis	187	57.19	222	64.0
City	115	35.17	98	28.2
Rural/village	24	7.34	27	7.8
GPA				
< 2	32	9.79	3	0.9
2.00 - 2.49	152	46.48	58	16.7
2.50 - 2.99	79	24.16	94	27.1
> 3.00	64	19.57	192	55.3
Monthly family income (USD)*				
< 685	35	10.70	108	31.1
685 - 1140	109	33.33	127	36.6
1141 - 1600	99	30.28	59	17
1601 - 2050	45	13.76	16	4.6
> 2050	39	11.93	37	10.7
TOTAL	327	100.00	347	100.00

*USD exchange rate calculations were made based on 2.19 for 2015 and 8.30 for 2021.

Table 2. The effects of student gender, class, hometown, GPA and family income level on students' daily work time expectations.

Item	2015						2021						P-value for year effect
	< 8 h		8 h		8-12 h		< 8 h		8 h		8-12 h		
	n	%	n	%	n	%	n	%	n	%	n	%	
Gender													
Male	50	26.5	99	52.4	40	21.2	31	17.4 ^{bc}	108	60.7 ^a	39	21.9 ^b	0.104
Female	34	24.6	84	60.9	20	14.5	31	18.8 ^{bc}	115	69.7 ^a	19	11.5 ^c	0.271
Class													
3	35	31.8	60	54.5	15	13.6	22	21.8	68	67.3	11	10.9	0.157
4	30	25.6	62	53.0	25	21.4	9	10.7	54	64.3	21	25.0	0.036
5	19	19.0	61	61.0	20	20.0	31	19.6	101	63.9	26	16.5	0.768
Hometown													
Metropolis	46	24.6	103	55.1	38	20.3	35	16.0	151	68.9	33	15.1	0.015
City	35	30.4	64	55.7	16	13.9	20	20.6	58	59.8	19	19.6	0.208
Rural/village	3	12.5	16	66.7	5	20.8	7	25.9	14	51.9	6	22.2	0.437
GPA													
< 2	5	15.6	18	56.3	9	28.1	1	33.3	1	33.3	1	33.3	0.673
2.00 - 2.49	40	26.3	89	58.6	23	15.1	11	19.0	38	65.5	9	15.5	0.529
2.50 - 2.99	19	24.1	43	54.4	17	21.5	11	12.0	60	65.2	21	22.8	0.111
> 3.00	20	31.3	33	51.6	11	17.2	39	20.5	124	65.3	27	14.2	0.128
Monthly family income (USD)*													
< 685	14	40.0 ^{bc}	16	45.7 ^{abc}	5	14.3 ^{de}	20	18.7	67	62.6	20	18.7	0.037
685 - 1140	31	28.4 ^{cd}	65	59.6 ^a	13	11.9 ^e	25	19.8	85	67.5	16	12.7	0.301
1141 - 1600	22	22.2 ^d	59	59.6 ^a	18	18.2 ^{de}	5	8.6	42	72.4	11	19.0	0.087
1601 - 2050	12	26.7 ^{cd}	24	53.3 ^{ab}	9	20.0 ^{de}	2	12.5	10	62.5	4	25.0	0.510
> 2050	5	12.8 ^{de}	19	48.7 ^{ab}	15	38.5 ^{bcd}	10	27.8	19	52.8	7	19.4	0.107
Overall	84	25.7	183	56.0	60	18.3	62	18.1	223	65.0	58	16.9	0.032

*USD exchange rate calculations were made based on 2.19 for 2015 and 8.30 for 2021.
a-e: The differences between percentages without shared letters among subgroups of "the family income level x students' daily work time expectations" and "gender x students' daily work time expectations" are significant (P<0.05).

Table 3. The effects of student gender, class, hometown, GPA and family income level on students' daily working period expectations.

Item	2015					2021					P-value for year effect			
	Day-time		At night		No matter	P-value	Day-time		At night			No matter	P-value	
	n	%	n	%	n		%	n	%	n	%	n		%
Gender														
Male	135	71.4 ^b	12	6.3 ^d	42	22.2 ^c	0.014	82	46.9 ^b	3	1.7 ^d	90	51.4 ^b	<0.001
Female	116	84.1 ^a	8	5.8 ^d	14	10.1 ^d		114	68.3 ^a	2	1.2 ^d	51	30.5 ^c	<0.001
Class														
3	83	75.5	11	10.0	16	14.5		54	54.0	1	1.0	45	45.0	<0.001
4	89	76.1	6	5.1	22	18.8	0.263	44	53.0	1	1.2	38	45.8	<0.001
5	79	79.0	3	3.0	18	18.0		98	61.6	3	1.9	58	36.5	0.006
Hometown														
Metropolis	139	74.3	9	4.8	39	20.9		134	60.9	3	1.4	83	37.7	<0.001
City	92	80.0	10	8.7	13	11.3	0.198	48	50.5	2	2.1	45	47.4	<0.001
Rural/Village	19	79.2	1	4.2	4	16.7		14	51.9	0	0	13	48.1	0.041
GPA														
< 2	16	50.0 ^b	3	9.4 ^{cd}	13	40.6 ^b		1	33.3 ^{bc}	0	0 ^d	2	66.7 ^{ab}	0.647
2.00 - 2.49	121	79.6 ^a	4	2.6 ^d	27	17.8 ^c	0.001	22	38.6 ^b	3	5.3 ^{cd}	32	56.1 ^a	0.014
2.50 - 2.99	61	77.2 ^a	8	10.1 ^c	10	12.7 ^c		58	63.0 ^a	1	1.1 ^d	33	35.9 ^b	<0.001
> 3.00	53	82.8 ^a	5	7.8 ^{cd}	6	9.4 ^c		115	60.5 ^a	1	0.5 ^d	74	38.9 ^b	<0.001
Monthly family income (USD)*														
< 685	23	65.7 ^c	3	8.6 ^{gh}	9	25.7 ^e		56	52.8 ^{bc}	0	0 ^e	50	47.2 ^{bc}	0.002
685 - 1140	89	81.7 ^{ab}	7	6.4 ^{gh}	13	11.9 ^{fg}		68	54.0 ^{bc}	5	4.0 ^e	53	42.1 ^{cd}	<0.001
1141 - 1600	86	86.9 ^a	4	4.0 ^h	9	9.1 ^{gh}	0.004	36	63.2 ^{ab}	0	0 ^e	21	36.8 ^{cd}	<0.001
1601 - 2050	31	68.9 ^{bc}	3	6.7 ^{gh}	11	24.4 ^{ef}		9	56.3 ^{ab}	0	0 ^e	7	43.8 ^{bcd}	0.241
> 2050	22	56.4 ^{cd}	3	7.7 ^{gh}	14	35.9 ^{de}		27	73.0 ^a	0	0 ^e	10	27.0 ^d	0.127
Overall	251	76.8	20	6.1	56	17.1		196	57.3	5	1.5	141	41.2	<0.001

*USD exchange rate calculations were made based on 2.19 for 2015 and 8.30 for 2021.
^{a-h}: The differences between percentages without shared letters among subgroups are significant ($P<0.05$).

Table 4. The effects of student gender, class, hometown, GPA and family income level on student income expectations in 2015.

Item	Monthly income expectation of the student, USD*										P-value	
	< 1140 USD		1141 – 1370 USD		1371 - 1600 USD		1601 – 1830 USD		1831 - 2050 USD			> 2050 USD
	n	%	n	%	n	%	n	%	n	%	n	%
Gender												
Male	20	10.6	25	13.2	41	21.7	31	16.4	27	14.3	45	23.8
Female	10	7.2	25	18.1	35	25.4	25	18.1	16	11.6	27	19.6
Class												
3	10	9.1	11	10.0	31	28.2	19	17.3	18	16.4	21	19.1
4	5	4.3	22	18.8	25	21.4	23	19.7	13	11.1	29	24.8
5	15	15.0	17	17.0	20	20.0	14	14.0	12	12.0	22	22.0
Hometown												
Metropolis	22	11.8	27	14.4	37	19.8	34	18.2	23	12.3	44	23.5
City	7	6.1	20	17.4	34	29.6	16	13.9	15	13.0	23	20.0
Rural/village	1	4.2	3	12.5	5	20.8	5	20.8	5	20.8	5	20.8
GPA												
< 2	3	9.4	4	12.5	7	21.9	6	18.8	3	9.4	9	28.1
2.00 - 2.49	18	11.8	29	19.1	33	21.7	20	13.2	20	13.2	32	21.1
2.50 - 2.99	3	3.8	7	8.9	24	30.4	16	20.3	15	19.0	14	17.7
> 3.00	6	9.4	10	15.6	12	18.8	14	21.9	5	7.8	17	26.6
Monthly family income (USD)*												
< 685	3	8.6 ^{def}	7	20.0 ^{a-d}	8	22.9 ^{abc}	3	8.6 ^{def}	8	22.9 ^{abc}	6	17.1 ^{bcd}
685 - 1140	18	16.5 ^{cd}	25	22.9 ^{abc}	29	26.6 ^{abc}	17	15.6 ^{cd}	9	8.3 ^{def}	11	10.1 ^{de}
1141 - 1600	5	5.1 ^{ef}	12	12.1 ^{c-f}	26	26.3 ^{abc}	21	21.2 ^{bc}	11	11.1 ^{def}	24	24.2 ^{abc}
1601 - 2050	3	6.7 ^{def}	2	4.4 ^{ef}	8	17.8 ^{cd}	9	20.0 ^{a-d}	7	15.6 ^{cd}	16	35.6 ^{ab}
> 2050	1	2.6 ^f	4	10.3 ^{def}	5	12.8 ^{c-f}	6	15.4 ^{cd}	8	20.5 ^{abc}	15	38.5 ^a
Overall	30	9.2	50	15.3	76	23.2	56	17.1	43	13.1	72	22.02

*USD exchange rate calculations were made based on 2.19 for 2015 and 8.30 for 2021
a-f: The differences between percentages without shared letters among subgroups are significant (P<0.05).

Table 5. The effects of student gender, class, hometown, GPA and family income level on student income expectations in 2021.

Item	Monthly income expectation of the student, USD*																		P-value
	< 1140 USD			1141 – 1370 USD			1371 – 1600 USD			1601 – 1830 USD			1831 - 2050 USD			> 2050 USD			
	n	%		n	%		n	%		n	%		n	%		n	%		
Gender																			
Male	45	25.7 ^b		57	32.6 ^{ab}		10	5.7 ^{de}		2	1.1 ^f		18	10.3 ^{cd}		43	24.6 ^b	0.037	
Female	60	36.4 ^a		62	37.6 ^a		4	2.4 ^{ef}		1	0.6 ^f		16	9.7 ^{cd}		22	13.3 ^c		
Class																		0.032	
3	19	20.0 ^{bc}		28	29.5 ^{ab}		5	5.3 ^{def}		1	1.1 ^{fg}		14	14.7 ^c		28	29.5 ^{ab}		
4	29	34.1 ^a		28	32.9 ^a		3	3.5 ^{efg}		1	1.2 ^{efg}		10	11.8 ^{cd}		14	16.5 ^c		
5	57	35.6 ^a		63	39.4 ^a		6	3.8 ^{efg}		1	0.6 ^g		10	6.3 ^{de}		23	14.4 ^c		
Hometown																		0.379	
Metropolis	76	34.9		74	33.9		9	4.1		2	0.9		18	8.3		39	17.9		
City	23	24.0		38	39.6		4	4.2		0	0.0		12	12.5		19	19.8		
Rural/Village	6	23.1		7	26.9		1	3.8		1	3.8		4	15.4		7	26.9		
GPA																		0.782	
< 2	1	33.3		1	33.3		0	0.0		0	0.0		0	0.0		1	33.3		
2.00 - 2.49	24	41.4		18	31.0		3	5.2		1	1.7		2	3.4		10	17.2		
2.50 - 2.99	29	30.9		33	35.1		4	4.3		1	1.1		7	7.4		20	21.3		
> 3.00	51	27.6		67	36.2		7	3.8		1	0.5		25	13.5		34	18.4		
Monthly family income (USD)*																		0.043	
< 685	41	38.3 ^a		40	37.4 ^a		2	1.9 ^{gh}		1	0.9 ^{gh}		7	6.5 ^{def}		16	15.0 ^{cd}		
685 - 1140	41	33.1 ^a		39	31.5 ^{ab}		7	5.6 ^{efg}		1	0.8 ^{gh}		9	7.3 ^{def}		27	21.8 ^{bc}		
1141 - 1600	16	27.6 ^{ab}		23	39.7 ^a		4	6.9 ^{def}		0	0.0 ^h		8	13.8 ^{cde}		7	12.1 ^{cde}		
1601 - 2050	1	7.1 ^{d-g}		3	21.4 ^{bcd}		0	0.0 ^h		0	0.0 ^h		4	28.6 ^{abc}		6	42.9 ^a		
> 2050	6	16.2 ^{bcd}		14	37.8 ^a		1	2.7 ^{e-h}		1	2.7 ^{e-h}		6	16.2 ^{bcd}		9	24.3 ^{abc}		
Overall	105	30.9		119	35.0		14	4.1		3	0.9		34	10.0		65	19.1		

*USD exchange rate calculations were made based on 2.19 for 2015 and 8.30 for 2021.
^{a-h}; The differences between percentages without shared letters among interaction are significant ($P<0.05$).

Table 6. The effects of student gender, class, hometown, GPA and family income level on career choice in 2015.

Item	Student's Career Choice																P- value																				
	Farm Anim. Practice				Companion Anim. Clinic				Equine Practice				Poultry Practice					Feed Industry				Food Hyg. and Safety				Pharm. Industry,				Public Employee				Academia			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%		n	%	n	%	n	%	n	%	n	%	n	%	n	%						
Gender																																					
Male	54	29.3 ^a	50	27.2 ^{ab}	1	0.5 ^j	10	5.4 ⁱ	9	4.9 ^{gh}	23	12.5 ^{cde}	6	3.3 ^{hij}	18	9.8 ^{d-g}	13	7.1 ^{e-h}	<0.001																		
Female	15	10.9 ^{c-f}	35	25.4 ^{ab}	4	2.9 ^{hij}	7	5.1 ⁱ	3	2.2 ^{ij}	20	14.5 ^{cd}	15	10.9 ^{c-f}	25	18.1 ^{bc}	14	10.1 ^{c-g}																			
Class																																					
3	25	22.9	30	27.5	3	2.8	8	7.3	4	3.7	10	9.2	6	5.5	14	12.8	9	8.3																			
4	22	19.1	28	24.3	1	0.9	6	5.2	6	5.2	16	13.9	7	6.1	16	13.9	13	11.3	0.797																		
5	22	22.4	27	27.6	1	1.0	3	3.1	2	2.0	17	17.3	8	8.1	13	13.3	5	5.1																			
Hometown																																					
Metropolis	36	19.5 ^{cd}	57	30.8 ^b	3	1.6 ^j	9	4.9 ^{ij}	7	3.8 ^{hij}	30	16.2 ^{cde}	7	3.8 ^{hij}	20	10.8 ^{efg}	16	8.6 ^{gh}																			
City	21	18.6 ^{cde}	27	23.9 ^{bc}	2	1.8 ^j	6	5.3 ^{ij}	5	4.4 ^{ij}	11	9.7 ^{efg}	14	12.4 ^{def}	19	16.8 ^{cde}	8	7.1 ⁱ	0.003																		
Rural/ village	12	52.2 ^a	0	0 ^j	0	0 ^j	2	8.7 ^{e-i}	0	0 ^j	2	8.7 ^{e-i}	0	0 ^j	4	17.4 ^{c-f}	3	13.0 ^{c-g}																			
GPA																																					
< 2	9	30.0 ^{ab}	9	30.0 ^{ab}	0	0 ^j	1	3.3 ^{gh}	0	0 ^j	8	26.7 ^{ab}	0	0 ^j	2	6.7 ^{e-i}	1	3.3 ^{ghi}	<0.001																		
2.00 - 2.49	36	24.0 ^{abc}	49	32.7 ^a	2	1.3 ^j	7	4.7 ^{gh}	6	4.0 ^{gh}	12	8.0 ^{efg}	8	5.3 ⁱ	26	17.3 ^{bcd}	4	2.7 ^{hi}																			
2.50 - 2.99	12	15.4 ^{b-e}	19	24.4 ^{abc}	2	2.6 ^{hi}	3	3.8 ^{gh}	3	3.8 ^{gh}	14	17.9 ^{bcd}	8	10.3 ^{deg}	11	14.1 ^{b-e}	6	7.7 ^{e-h}																			
> 3.00	12	18.8 ^{bcd}	8	12.5 ^{c-f}	1	1.6 ^{hi}	6	9.4 ^{d-g}	3	4.7 ^{gh}	9	14.1 ^{bcd}	5	7.8 ^{e-h}	4	6.3 ^{e-h}	16	25.0 ^{abc}																			
Monthly family income (USD)*																																					
< 685	13	39.4 ^{ab}	5	15.2 ^{c-g}	0	0 ^j	4	12.1 ^{d-h}	0	0 ^j	2	6.1 ^{ij}	2	6.1 ^{ij}	3	9.1 ^{d-i}	4	12.1 ^{d-h}																			
685 - 1140	23	21.5 ^{cd}	21	19.6 ^{cd}	2	1.9 ^{ij}	6	5.6 ^{ij}	9	8.4 ^{e-h}	14	13.1 ^{d-g}	9	8.4 ^{e-h}	19	17.8 ^{cd}	4	3.7 ^{hij}																			
1141 - 1600	18	18.2 ^{cd}	26	26.3 ^{bc}	1	1.0 ^j	6	6.1 ^{ij}	1	1.0 ^j	16	16.2 ^{cde}	7	7.1 ⁱ	16	16.2 ^{cde}	8	8.1 ^{e-h}	0.002																		
1601 - 2050	5	11.1 ^{d-h}	23	51.1 ^a	1	2.2 ^{hij}	0	0 ^j	1	2.2 ^{hij}	4	8.9 ^{d-h}	0	0 ^j	3	6.7 ^{ij}	8	17.8 ^{c-f}																			
> 2050	10	26.3 ^{bcd}	10	26.3 ^{bcd}	1	2.6 ^{hij}	1	2.6 ^{hij}	1	2.6 ^{hij}	7	18.4 ^{cde}	3	7.9 ^{e-i}	2	5.3 ^{ij}	3	7.9 ^{e-i}																			
Overall	69	21.4	85	26.4	5	1.6	17	5.3	12	3.7	43	13.4	21	6.5	43	13.4	27	8.4																			

*USD exchange rate calculations were made based on 2.19 for 2015 and 8.30 for 2021.
a-i: The differences between percentages without shared letters among interaction are significant (P<0.05).

Table 7. The effects of student gender, class, hometown, GPA and family income level on career choice in 2021.

Item	Student's Career Choice																		P-value
	Farm Anim. Practice		Companion Anim. Clinic		Equine Practice		Poultry Practice		Feed Industry		Food Hyg. and Safety		Pharm. Industry		Public Employee		Academia		
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	
Gender																			
Male	66	16.8 ^{cd}	114	29.1 ^b	22	5.6 ^{gh}	23	5.9 ⁱ	17	4.3 ⁱ	47	12.0 ^{de}	31	7.9 ^{e-h}	35	8.9 ^{efg}	37	9.4 ^{ef}	
Female	15	5.0 ^h	108	36.1 ^a	15	5.0 ^{hi}	5	1.7 ^j	4	1.3 ^j	33	11.0 ^e	35	11.7 ^{de}	26	8.7 ^{e-h}	58	19.4 ^c	
Class																			
3	17	9.4 ^{def}	62	34.3 ^a	21	11.6 ^{b-e}	8	4.4 ^{gh}	6	3.3 ^{ghi}	17	9.4 ^{def}	13	7.2 ^{efg}	10	5.5 ^{fgh}	27	14.9 ^{bcd}	
4	28	17.5 ^b	56	35.0 ^a	5	3.1 ^{ghi}	4	2.5 ^{hi}	1	0.6 ⁱ	14	8.8 ^{ef}	13	8.1 ^{efg}	12	7.5 ^{efg}	27	16.9 ^{bc}	
5	36	10.3 ^{def}	104	29.6 ^a	10	2.8 ^{hi}	16	4.6 ^{gh}	14	4.0 ^{gh}	49	14.0 ^{bcd}	39	11.1 ^{cde}	39	11.1 ^{cde}	44	12.5 ^{b-e}	
Hometown																			
Metropolis	33	7.8 ^{gh}	149	35.4 ^a	26	6.2 ^{gh}	16	3.8 ^{ij}	13	3.1 ^j	48	11.4 ^{ef}	41	9.7 ^{efg}	25	5.9 ^{ghi}	70	16.6 ^{bcd}	
City	28	13.5 ^{cde}	61	29.5 ^a	10	4.8 ^{hij}	7	3.4 ^{ij}	6	2.9 ^j	23	11.1 ^{def}	23	11.1 ^{def}	23	11.1 ^{def}	24	11.6 ^{def}	
Rural/Village	14	27.5 ^{ab}	12	23.5 ^{abc}	1	2.0 ^j	4	7.8 ^{e-i}	2	3.9 ^{hij}	4	7.8 ^{e-i}	2	3.9 ^{hij}	2	3.9 ^{hij}	3	5.9 ^{ij}	
GPA																			
< 2	1	25.0 ^{a-g}	0	0.0 ⁱ	2	50.0 ^{ab}	1	25.0 ^{a-g}	0	0.0 ⁱ	0	0.0 ⁱ	0	0.0 ⁱ	0	0.0 ⁱ	0	0.0 ⁱ	
2.00 - 2.49	17	15.3 ^{bc}	32	28.8 ^a	6	5.4 ^{e-i}	5	4.5 ⁱ	3	2.7 ^{hi}	16	14.4 ^{bcd}	11	9.9 ^{c-f}	10	9.0 ^{c-g}	11	9.9 ^{c-f}	
2.50 - 2.99	30	14.6 ^{bc}	59	28.8 ^a	14	6.8 ^{e-h}	10	4.9 ⁱ	9	4.4 ^{ghi}	28	13.7 ^{cd}	18	8.8 ^{c-g}	17	8.3 ^{d-g}	20	9.8 ^{c-f}	
> 3.00	33	9.2 ^{c-f}	131	36.7 ^a	14	3.9 ^{hi}	12	3.4 ^{hi}	8	2.2 ⁱ	36	10.1 ^{cde}	36	10.1 ^{cde}	33	9.2 ^{c-f}	54	15.1 ^{bc}	
Monthly family income (USD)*																			
< 685	37	16.7	66	29.9	7	3.2	10	4.5	6	2.7	25	11.3	15	6.8	28	12.7	27	12.2	
685 - 1140	27	10.7	83	32.8	14	5.5	11	4.3	7	2.8	27	10.7	28	11.1	20	7.9	36	14.2	
1141 - 1600	9	7.6	37	31.1	8	6.7	6	5.0	6	5.0	17	14.3	11	9.2	11	9.2	14	11.8	
1601 - 2050	1	4.3	11	47.8	2	8.7	0	0.0	0	0.0	3	13.0	3	13.0	0	0.0	3	13.0	
> 2050	7	10.0	26	37.1	5	7.1	1	1.4	2	2.9	8	11.4	9	12.9	2	2.9	10	14.3	
Overall	81	11.8	222	32.1	37	5.4	28	4.1	21	3.0	80	11.6	66	9.6	61	8.8	95	13.7	

*USD exchange rate calculations were made based on 2.19 for 2015 and 8.30 for 2021.
a-i: The differences between percentages without shared letters among interaction are significant (P<0.05).

Table 8. P-values for year effect regarding monthly income expectation and career choice of the students.

Items	Monthly income expectation of the student	Student's Career Choice
Gender		
Male	<0.001	0.003
Female	<0.001	0.001
Class		
3	<0.001	0.002
4	<0.001	0.028
5	<0.001	0.034
Hometown		
Metropolis	<0.001	<0.001
City	<0.001	0.438
Rural/village	0.054	0.177
GPA		
< 2	0.588	0.002
2.00 - 2.49	<0.001	0.011
2.50 - 2.99	<0.001	0.710
> 3.00	<0.001	0.001
Monthly family income (USD)*		
< 685	<0.001	0.047
685 - 1140	<0.001	<0.001
1141 - 1600	<0.001	0.047
1601 - 2050	0.074	0.155
> 2050	0.004	0.363
Overall	<0.001	<0.001

*USD exchange rate calculations were made based on 2.19 for 2015 and 8.30 for 2021.

Discussion

This study was conducted to determine the career plans of veterinary faculty students after graduation and their expectations regarding working conditions. Twenty-five percent of the students who participated in the survey in 2015 and 15.3% of the students who participated in the survey in 2021 came from high-income families with a monthly income of \$ 1601 or more. On the other hand, the percentage of students from lower-income families (below \$685 per month) increased from 10.7% to 31.1%, depending on the year. The highly possible reason for this was the economic crisis in Türkiye in 2021. The dollar exchange rate, which was 2.34 TL in January 2015, became 7.38 TL as of January 2021 and 13.30 TL in December 2021.

According to the results of the study, it is seen that more than half of the participants expected to work 8 hours a day, but it is a remarkable result that those who expected to work more than 8 hours were 16-18%. The effect of the year on daily working hours expectation was found to be significant. One of the striking findings is that while the desire to work among students with low family income (below \$1600 per month) was low in 2015 (≤ 8 h), the desire to work in the same group increased in 2021. Similarly, regarding the working period, while a significant portion of the participants (76%) preferred day-time in 2015, it is observed that this selectivity of the participants decreased in 2021. In addition, both genders were more flexible in terms of working time expectations in 2021.

Monthly family income significantly affected student's monthly income expectations in both years. However, it is noteworthy that students with low-income families also have low monthly earning expectations. On the other hand, while the percentage of participants with an income expectation of 1600 USD and below was 47.7% in 2015, the percentage of the same income expectation increased to 70% in 2021. Students with high-income families have a monthly earning expectation of 1831 USD and above, regardless of the year. Gender has a highly significant effect on the monthly income expectations of students in 2021, it was not important in 2015. With the economic crisis, the monthly income expectations of female students decreased by 1601 USD. The Presidency of the Republic of Turkey Human Resources Office reported that 33.8% of newly graduated veterinarians received minimum wage in their first job (UNI-VERI, 2024). In a study conducted with veterinarians in Turkey (Balaban and Güneş, 2023), the differences in future expectations between male and female veterinarians were found to be insignificant.

Gender has a highly significant effect on the career choices of students in both years. Most of the female participants preferred companion animal clinic and

public employee while male counterparts preferred farm animal practice and companion animal clinic in 2015. In 2021, female participants' career preferences included companion animal clinic first, and academia second. In male participants' career preferences, companion animal clinic ranked first in 2021, and farm animal practice ranked second. Lofstedt (2003) attributes the decline in veterinary graduates' participation in food animal practice to the high proportion of women graduating from veterinary schools. Wise and Gonzales (2002) reported that 56% of female graduates of American veterinary colleges in 2001 preferred companion animal clinics, while 4% preferred large animal practice. Moreover, 40% of male graduates of American veterinary colleges in 2001 preferred companion animal clinics, while 13% preferred large animal practice. Moreover, Kinnison and May (2013) showed that females' percentages were significantly lower than males' in choosing farm animals and equine practice. Serpell (2005) also reported employment preferences were strongly affected by gender, mostly a significant male gender bias toward food-animal practice. Another noteworthy point is that while 21.4% of students chose farm animal practice in 2015, this rate dropped dramatically to 11.8% in 2021. In recent years, it has been observed in other countries that veterinary faculty graduates have moved away from farm animal practice (Cornish et al., 2016; Kinnison and May, 2013).

Student' hometown was significant effect on their career choices in 2015 and 2021. While the first preference of the students coming from rural/village areas is the farm animal practice (52.2%), followed by public employees (17.4%) and academia (13%) in 2015. Most of the students coming from metropolis and cities preferred working in companion animal clinics 30.8% and 23.9%, respectively. This result may be due to the previous experiences of the students coming from the village, especially their experiences with farm animals. Similarly, Kinnison and May (2013) pointed out that individuals from urban areas were likelier to choose companion animal practice, while those from rural preferred farm animal practice. Heat (2007) reported that veterinarians who grew up with animals on farms were more likely to work with cattle and sheep after graduation compared to other students from different backgrounds. Jelinski et al. (2008) reported that colleges that accept more students from rural areas produce more FAR (food animal-related) participants after graduation. Moreover, they also report that students whose parents or grandparents dealt with farm animals preferred FAR practice more. In 2021, the number of students who want to work with farm animals has generally decreased. On the other hand, most of the students coming from the rural/village areas (27.5%) still preferred this area. It is also seen that the number of students who want to work with companion animals

has increased regardless of hometown compared to 2015. Similarly, Dernas and Siméone (2019) reported that French veterinarian students' choice to work with farm animals decreases yearly. Payne et al. (2022) reported that the most common factors influencing undergraduates' attitudes toward farm animal practice work were clinical and preclinical extramural studies and working conditions (species of animal, hours, working outside, salary and variety).

Monthly family income significantly affected student career choices in 2015 while it's not in 2021. It is seen that 39.4% of the students whose monthly family income is below 685 USD preferred farm animal practice while 51.1% of students whose family income is 1601-2050 USD preferred companion animal clinics. On the other hand, students from high-income families did not prefer public employee and poultry practice in both years.

Conclusion

The findings of the study highlight the importance of gender, hometown and monthly family income considerations in shaping the career plans of veterinary students. The most striking result of the study is that, regardless of the year, students from low-income families (<1601 USD) have lower expectations of both working hours and monthly income. On the other hand, students from high-income families (\geq 1601 USD) tend to work harder and earn more. There was also a clear decrease in preference for farm animal practice and an increase in companion animal practice. This decrease in farm animal practices may have negative effects on the country's future animal husbandry. To prevent this, special arrangements should be made in veterinary faculties so that students' interest in farm animal practices can be maintained. More positive farm animal clinical experiences should be provided to veterinary students.

Declaration of Competing Interest

The authors declare they have no conflicts of interest.

Author Contributions

Hulya Yalcintan: Conceptualization, Methodology, Formal analysis, Investigation Writing – original draft, Writing – review & editing. Pembe Dilara Kecici: Methodology, Formal analysis, Investigation, Writing – review & editing. Melek Özdemir: Methodology, Formal analysis, Investigation, Writing – review & editing. Bulent Ekiz: Conceptualization, Methodology, Formal analysis, Supervision, Writing – review & editing.

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