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ABSTRACT

Perception is defined as the result of an awareness process about phenomena, things (living animals, plants, or humans), connections between objects by activities including noticing, observing, differentiating, and acknowledging. A recent study was conducted to investigate the undergraduate's perception of areas of psychology. This research used the Vietnamese version of the Scale of Interests by Areas of Psychology (EIAPsi) including ten subscales to survey 252 psychology students (57 males and 195 females) from four universities in Vietnam. The findings showed significant effects of university and major on psychology undergraduate's perception of areas of psychology. Students majoring in Counseling and Clinical Psychology had more general knowledge about the functions and roles of Clinical and Health Psychology and Neuropsychology than other undergraduates. Industrial and Organizational Psychology students had more general knowledge about Organizational Psychology than students in other majors.

Keywords: perspective, undergraduate, psychology, major, Vietnamese

INTRODUCTION

The time that people are living in is called the era of industrial revolution which is characterized by a high fusion of physical and digital hyper connected systems with a particular emphasis on Internet, Technology, Science or Artificial Intelligence (AI). Technology is becoming more and more advanced; humans can access a wide variety of data applications and social networking sites. This leads to the transformation of individuals as people have to change themselves in order to open the knowledge horizons and adapt to the technology context. Consequently, human psychology has many fluctuations which resulted in the highly developed Psychology. It was born to explain issues that technology could not, which is becoming an internal science by its peculiarities. Psychological Science is creating interventions that improve people's lives in various spheres, particularly, enhancing educational achievements, enriching work life (Clay, November 2017). Besides, according to American Psychological Association, Psychology is defined as a variety of scientific disciplines including numerous main fields of research such as cognitive, biological, personality, developmental, social, experimental. Kalat (2021) stated that Psychology is also a systematic research of the way that people behave and the things that have happened to individuals that influence the way they think and behave on sensation and perception, learning and memory, hunger and thirst. The study of human behavior, cognition, emotion, and motivation is known as psychology, which has a long tradition and can be subdivided into many different specializations such as clinical, industrial/organizational, neuropsychology, educational, health (APA, 2020c). Kuther (2019) classified Psychology into several subfields comprising behavior neuroscience, clinical psychology, cognitive psychology, community psychology, counseling psychology, developmental psychology, educational psychology, experimental psychology, forensic psychology, health psychology, human factors psychology, industrial-organizational psychology, school psychology and social psychology.

Owing to the development of psychological science, Psychology has been a tendency of academic discipline in students. This field is extremely popular in college, numerous students have chosen Psychology as their major for future career options. According to the estimation, there were between 1.2 million and 1.6 million undergraduate students enrolling in introductory psychology classes each year (Gurung et al., 2016). Similar to business, health profession associated programs, social science and history, Psychology has been reported to take the 4th place in the most prevalent individual specialties in general based on the statistics of the United State Department of Education (Clay, November 2017). For a developing nation like Vietnam, the pressure of work productivity, life standard, individual development and individual outcome has become the main causes of mental health, therefore,

Vietnam society has needed a number of expertise who can help people reduce problems related to mental health. Meanwhile, Psychology has been a new discipline in higher education leading to the extremely scarce human resource. This is the reason why young people tend to choose Psychology as a major. Due to the novelty of this academic discipline, students learning Psychology have fallen under the umbrella of many challenges and obstacles such as lack of major documents, being good at statistics, having fluent science language or gaining medical knowledge. Conversely, Psychology also brings several benefits for students studying it including: (i) becoming a psychological consultant, (ii) becoming a lecturer, (iii) becoming a person is able to help people interpreting and balancing their initial emotions and psychological problems, (iv) gaining understanding and ability to work with people effectively in other subfields of Psychology. Because of aforementioned benefits, more and more students have been interested in learning Psychology which resulted in deciding Psychology as an academic major. The interest in selecting Psychology as a discipline of undergraduate students in Illinois University dramatically grew from 1925 to 1944 (Fischer & Hinshaw, 1946). Until now, there are 17 universities which enroll students in Psychology in Vietnam. In 2020, more than 900 students applied and entered the Department of Psychology in Vietnam universities (excluding overseas students). Bott, Stuhlmacher, and Powaser (2006) reported an increasing interest in Industrial and Organizational psychology among undergraduate students. Specifically, most of the survey participants offered one or more courses related to Industrial/Organizational psychology in learning programs such as Introduction to Industrial and Organizational psychology, Psychometrics/Measurement, and Independent Study. From 1975, the number of Industrial/Organizational and counseling psychology courses increased substantially and were in the top 30 areas of psychology which were most frequently required at the undergraduate level (Perlman & McCann, 1999). Another study showed that undergraduate psychology students had more interest in clinical and counseling psychology when learning and getting the greater knowledge about clinical and counseling psychology than other areas (Stark-Wroblewski, Wiggins, & Ryan, 2006).

There have been numerous studies focusing on student's perception of psychology for decades. According to American Psychology Association Dictionary, perception is defined as the result of an awareness process about phenomena, things (living animal, plant, or human), connections between objects by activities including noticing, observing, differentiating and acknowledging (APA, 2020b). Organisms could arrange the information and interpret the stimulation received from the environment into useful knowledge and to act in a systematic way without interruption or difficulty with these activities. Efron (1969) considered perception as a fundamental form of cognitive interaction with the natural environment and the world. Morales, Abramson, Nain, Junior, and Bartoszeck (2005) conducted a research with 190 Brazilian undergraduate students, survey participants and showed that more than half of undergraduates considered psychology a science. Specifically, undergraduates agreed that psychology could be in the same category as natural science and psychology courses were necessary for university education. These findings supported previous studies of Wood, Jones, and Benjamin (1986) and McGuire and Borowy (1979). Bartels, Hinds, Glass, and Ryan (2009) revealed a positive effect of the number of psychology courses on undergraduate student's perception of psychology. The authors indicated that students who participated in four or more psychology courses would have stronger perceptions of psychology as a science. However, Gardner and Dalsing (1986) reported that students had lots of misconceptions about the areas of psychology when entering college and those false beliefs which are affected by parents and incorrect information from the media still existed after participating in some psychology courses. Besides, Malin and Timmreck (1979) surveyed 418 psychology students and showed that most of them wanted to learn clinical psychology or counseling for achieving career goals. Moreover, the authors reported that three main reasons for pursuing psychology include (i) hoping to have a psychology-related or closely related career; (ii) taking pleasure in taking psychology courses; (iii) understanding of themselves and other people.

To the best of my knowledge, there are few studies investigating the student's perception of areas of psychology in Vietnamese educational context for the past few years. To bridge this gap, our study is conducted to examine the psychology undergraduates' perception of areas of psychology. The research starts with the literature review of student's perception of psychology. The methodology is shown in the following sections. Then, the research results and discussion are respectively reported. The last is the conclusion with contributions from the study.

METHOD

Research hypotheses

A 4×3 factorial design was used. The independent variables were: University (HCMUE - Ho Chi Minh City University of Education, HUTECH - Ho Chi Minh City University of Technology, UED - University of Science and Education, University of Danang, and ULSA - University of Labour and Social Affairs) and Major (Industrial/Organizational Psychology; Counseling and Clinical Psychology, and Educational Psychology). Ten dependent variables were measured: Clinical and Health, Sport, Teaching and Research, Educational, Legal, Neuropsychology, Organizational, Psychodiagnosis, Social, and Traffic. The null hypotheses that were tested were as follows:

H₀₁ (main effect): There is no significant difference among four study groups of university when they are compared simultaneously on ten factors.

H₀₂ (main effect): There is no significant difference among three study groups of major when they are compared simultaneously on ten factors.

H₀₃ (interaction effect): There is no significant interaction between university and major when they are compared simultaneously on ten factors.

Participants

An online survey was conducted, and 252 responses were collected fully valid. Among 252 psychology students, 57 (22.6%) were male and 195 (77.4%) were female. There were 75 students majoring in Industrial/Organizational Psychology, 69 majoring in Educational Psychology, and 108 majoring in Counseling and Clinical Psychology. All the distributions of participants were shown in Figure 1.

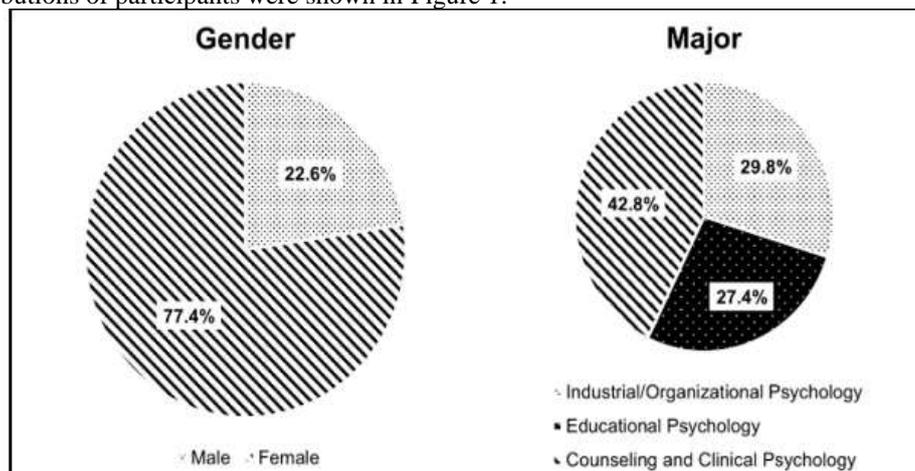


Fig.1: Percentage of 252 participants in gender and major.

Data Collection Tools

The 90 items of EIAPsi were translated into Vietnamese by two bilingual researchers. One of them is a Vietnamese native speaker who is fluent in English. The other one speak English as the first language and be fluent in Vietnamese. Forward and backward translation procedures were conducted following the guidelines. The initial order of items was unchanged in the Vietnamese version of the 90-item EIAPsi. All survey participants were asked to read the questionnaire carefully and choose the answers which most described them.

First, participants completed social-demographic questions. Then, they were asked to answer the Vietnamese version of the Scale of Interests by Areas of Psychology (EIAPsi) based on the Portuguese version of Ambiel et al. (2020). According to Ambiel et al. (2020), EIAPsi assesses the interests of Psychology students regarding the different areas of the profession. The questionnaire included 90 items, divided into ten factors (known as ten areas of psychology), which are: Clinical and Health, Sport, Teaching and Research, Educational, Legal, Neuropsychology, Organizational, Psychodiagnosis, Social, and Traffic. We decided to use all ten factors (90 items): Clinical and Health (15 items), Sport (8 items), Teaching and Research (14 items), Educational (9 items), Legal (7 items), Neuropsychology (7 items), Organizational (12 items), Psychodiagnosis (8 items), Social (5 items), and Traffic (5 items) to examine students' perception in this study. The participants answered at five different stages of interest on a 5-point Likert scale (Croasmun & Ostrom, 2011). In this current study, the highest Cronbach's Alpha score was .930 for Clinical and Health factor, and the lowest was .699 for Social factor.

Analyses

The Social Sciences Statistics Program (SPSS) version 22 was used for data processing. First, descriptive statistics were used to describe the student's perception of ten areas of psychology. The coding procedure was performed as follows: 1 = Not at all interested, 2 = Not very interested, 3 = Neutral, 4 = Somewhat interested, 5 = Very interested. To set up the group boundary value for outcome discussions, the interval width of the 5-Likert scale should be computed (Malhotra, Nunan & Birks, 2017). Based on the above interval width, which is judged as follows, group boundary values are built to assist in the discussion of research findings:

- + 1.00 - 1.80 = Not at all interested
- + 1.81 - 2.60 = Not very interested
- + 2.61 - 3.40 = Neutral
- + 3.41 - 4.20 = Somewhat interested
- + 4.21 - 5.00 = Very interested

Then, Multivariate Analysis of Variance (MANOVA) was used to analyze the difference between university and major.

RESULTS

Descriptive Analysis

The participants scored in the average range on the scale of EIAPsi. The mean scores, listed from the highest to lowest score, are as below: Psychodiagnosis (M = 3.61, SD = .63), Clinical and Health (M = 3.60, SD = .64), Educational (M = 3.58, SD = .64), Neuropsychology (M = 3.57, SD = .64), Social (M = 3.54, SD = .59), Organizational (M = 3.53, SD = .64), Sport (M = 3.44, SD = .69), Teaching and Research (M = 3.40, SD = .62), Legal (M = 3.31, SD = .71), and Traffic (M = 3.31, SD = .77). Table 2 presents reliability and descriptive statistics of ten dependent variables.

Table 1: Cronbach's Alpha and Descriptive Statistics of ten factors.

	No. items	α	M	SD
Clinical and Health	15	.930	3.60	.64
Sport	8	.894	3.44	.69
Teaching and Research	14	.901	3.40	.62
Educational	9	.884	3.58	.64
Legal	7	.871	3.31	.71
Neuropsychology	7	.848	3.57	.64
Organizational	12	.912	3.53	.64
Psychodiagnosis	8	.869	3.61	.63
Social	5	.699	3.54	.59
Traffic	5	.833	3.31	.77

No. items: Number of items; α : Cronbach's Alpha; M: Mean; SD: Standard Deviation.

Inferential Analysis

A multivariate analysis of variance (MANOVA) was performed with university and major as the independent variable and the ten subscales of EIAPsi as the dependent variables.

The multivariate homogeneity of variance-covariance matrices tested with Box's M test revealed that the M value of 1113.656 was significant ($p < 0.05$) based on Huberty and Petoskey's guideline (Huberty & Petoskey, 2000). Therefore, the assumption of multivariate homogeneity of covariance matrices was not satisfied. As a result, Pillai's Trace value - a more robust statistic, was used in order to report the result.

Based on the significant effects found from the MANOVA, a separate two-way univariate analysis of variance (ANOVA) for each of the dependent variables was conducted. In order to perform a series of follow-up ANOVAs, the homogeneity of variance assumption was tested for three subscales. If Levene's test is significant, this means that the assumption has not been satisfied. Based on a series of Levene's Test of Equality of Error Variances, the homogeneity of variance assumption was satisfied, even though one of the three Levene's F tests were statistically significant ($p > .05$). In this study, the value of Levene's test was non-significant for all dependent variables: Clinical and Health, $F_{(11, 240)} = .1002$, $p = .445$; Sport, $F_{(11, 240)} = 1.205$, $p = .284$; Teaching and Research, $F_{(11, 240)} = .756$, $p = .683$; Educational, $F_{(11, 240)} = 1.173$, $p = .307$; Legal, $F_{(11, 240)} = .678$, $p = .759$; Neuropsychology, $F_{(11, 240)} = 1.286$, $p = .233$; Organizational, $F_{(11, 240)} = 1.631$, $p = .091$; Psychodiagnosis, $F_{(11, 240)} = .752$, $p = .688$; Social, $F_{(11, 240)} = .907$, $p = .534$; and Traffic, $F_{(11, 240)} = .908$, $p = .534$.

Table 3: Combined Univariate ANOVA Table

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial η^2
Corrected Model	Clinical and Health	15.240 ^a	11	1.385	3.771	.000	.147
	Sport	8.339 ^b	11	.758	1.657	.084	.071
	Teaching and Research	7.596 ^c	11	.691	1.868	.044	.079
	Educational	16.347 ^d	11	1.486	4.085	.000	.158
	Legal	9.251 ^e	11	.841	1.745	.065	.074
	Neuropsychology	15.546 ^f	11	1.413	3.865	.000	.150
	Organizational	15.739 ^g	11	1.431	3.889	.000	.151
	Psychodiagnosis	9.070 ^h	11	.825	2.204	.015	.092
	Social	5.858 ⁱ	11	.533	1.570	.108	.067
Traffic	10.520 ^j	11	.956	1.942	.035	.082	
University	Clinical and Health	2.670	3	.890	2.423	.067	.029
	Sport	4.307	3	1.436	3.139	.026	.038
	Teaching and Research	4.436	3	1.479	3.999	.008	.048

	Educational	6.238	3	2.079	5.716	.001	.067
	Legal	5.608	3	1.869	3.879	.010	.046
	Neuropsychology	3.138	3	1.046	2.860	.038	.035
	Organizational	5.292	3	1.764	4.794	.003	.057
	Psychodiagnosis	2.034	3	.678	1.812	.146	.022
	Social	2.904	3	.968	2.853	.038	.034
	Traffic	4.949	3	1.650	3.350	.020	.040
Major	Clinical and Health	7.577	2	3.788	10.312	.000	.079
	Sport	.279	2	.140	.305	.737	.003
	Teaching and Research	2.287	2	1.144	3.093	.047	.025
	Educational	5.349	2	2.675	7.352	.001	.058
	Legal	.693	2	.346	.719	.488	.006
	Neuropsychology	6.613	2	3.307	9.043	.000	.070
	Organizational	6.528	2	3.264	8.872	.000	.069
	Psychodiagnosis	2.986	2	1.493	3.989	.020	.032
	Social	.596	2	.298	.878	.417	.007
	Traffic	.703	2	.351	.713	.491	.006
University* Major	Clinical and Health	2.180	6	.363	.989	.433	.024
	Sport	2.877	6	.480	1.049	.395	.026
	Teaching and Research	1.181	6	.197	.532	.784	.013
	Educational	2.687	6	.448	1.231	.291	.030
	Legal	2.290	6	.382	.792	.577	.019
	Neuropsychology	3.576	6	.596	1.630	.140	.039
	Organizational	5.421	6	.904	2.456	.025	.058
	Psychodiagnosis	2.528	6	.421	1.126	.348	.027
	Social	1.529	6	.255	.751	.609	.018
	Traffic	3.302	6	.550	1.117	.353	.027
Error	Clinical and Health	88.173	240	.367			
	Sport	109.766	240	.457			
	Teaching and Research	88.745	240	.370			
	Educational	87.304	240	.364			
	Legal	115.654	240	.482			
	Neuropsychology	87.760	240	.366			
	Organizational	88.298	240	.368			
	Psychodiagnosis	89.806	240	.374			
	Social	81.416	240	.339			
	Traffic	118.205	240	.493			
Total	Clinical and Health	3367.413	252				
	Sport	3103.578	252				
	Teaching and Research	3016.168	252				
	Educational	3337.012	252				
	Legal	2884.102	252				
	Neuropsychology	3315.551	252				
	Organizational	3242.583	252				
	Psychodiagnosis	3385.891	252				
	Social	3241.840	252				
	Traffic	2892.840	252				
Corrected Total	Clinical and Health	103.413	251				
	Sport	118.104	251				
	Teaching and Research	96.342	251				
	Educational	103.651	251				
	Legal	124.905	251				
	Neuropsychology	103.306	251				

	Organizational	104.037	251				
	Psychodiagnosis	98.877	251				
	Social	87.274	251				
	Traffic	128.724	251				
<p>a. $R^2 = .147$ (Adjusted $R^2 = .108$) b. $R^2 = .071$ (Adjusted $R^2 = .028$) c. $R^2 = .079$ (Adjusted $R^2 = .037$) d. $R^2 = .158$ (Adjusted $R^2 = .119$) e. $R^2 = .074$ (Adjusted $R^2 = .032$) f. $R^2 = .150$ (Adjusted $R^2 = .112$) g. $R^2 = .151$ (Adjusted $R^2 = .112$) h. $R^2 = .092$ (Adjusted $R^2 = .050$) i. $R^2 = .067$ (Adjusted $R^2 = .024$) j. $R^2 = .082$ (Adjusted $R^2 = .040$)</p>							

There was a significant difference in the perception of areas of psychology between students from universities when considered jointly on the ten variables, Pillai's Trace value = .200; $F_{(30, 699)} = 1.667$, $p = .015$, partial $\eta^2 = .067$. Based on this result, the first hypothesis (H_{01}) was rejected. A separate ANOVA was conducted for each dependent variable, with each ANOVA evaluated at an alpha level of 0.005 (i.e., 0.05/10).

There was a significant difference between universities on Educational, $F_{(3, 240)} = 5.716$, $p = .001$, partial $\eta^2 = .067$, with HUTECH ($M = 3.90$, $SD = .12$) scoring higher than ULSA ($M = 3.73$, $SD = .10$), UED ($M = 3.54$, $SD = .06$), and HCMUE ($M = 3.34$, $SD = .10$).

There was a significant difference between universities on Organizational, $F_{(3, 240)} = 4.794$, $p = .003$, partial $\eta^2 = .057$, with HUTECH ($M = 3.78$, $SD = .13$) scoring higher than ULSA ($M = 3.74$, $SD = .10$), UED ($M = 3.49$, $SD = .06$), and HCMUE ($M = 3.33$, $SD = .09$).

There was not a significant difference between universities when considered jointly on Clinical and Health, $F_{(3, 240)} = 2.423$, $p = .067$, partial $\eta^2 = .029$; Sport, $F_{(3, 240)} = 3.139$, $p = .026$, partial $\eta^2 = .038$; Teaching and Research, $F_{(3, 240)} = 3.999$, $p = .008$, partial $\eta^2 = .048$; Legal, $F_{(3, 240)} = 3.879$, $p = .010$, partial $\eta^2 = .046$; Neuropsychology, $F_{(3, 240)} = 2.860$, $p = .038$, partial $\eta^2 = .035$; Psychodiagnosis, $F_{(3, 240)} = 1.812$, $p = .146$, partial $\eta^2 = .022$; Social, $F_{(3, 240)} = 2.853$, $p = .038$, partial $\eta^2 = .034$; and Traffic, $F_{(3, 240)} = 3.350$, $p = .020$, partial $\eta^2 = .040$.

There was a significant difference in the perception of areas of psychology between majors when considered jointly on the ten variables, Pillai's Trace value = .544; $F_{(20, 464)} = 8.677$, $p = .001$, partial $\eta^2 = .272$. Based on this result, the second hypothesis (H_{02}) was rejected. A separate ANOVA was conducted for each dependent variable, with each ANOVA evaluated at an alpha level of 0.005 (i.e., 0.05/10).

There was a significant difference between majors on Clinical and Health, $F_{(2, 240)} = 10.312$, $p = .001$, partial $\eta^2 = .079$, with Counseling and Clinical Psychology students ($M = 3.83$, $SD = .06$) scoring higher than Educational Psychology students ($M = 3.53$, $SD = .10$), and Industrial/Organizational Psychology students ($M = 3.39$, $SD = .08$).

There was a significant difference between majors on Educational, $F_{(2, 240)} = 7.352$, $p = .001$, partial $\eta^2 = .058$, with Educational Psychology students ($M = 3.91$, $SD = .10$) scoring higher than Counseling and Clinical Psychology students ($M = 3.55$, $SD = .06$), and Industrial/Organizational Psychology students ($M = 3.43$, $SD = .08$).

There was a significant difference between majors on Neuropsychology, $F_{(2, 240)} = 9.043$, $p = .001$, partial $\eta^2 = .070$, with Counseling and Clinical Psychology students ($M = 3.79$, $SD = .06$) scoring higher than Educational Psychology students ($M = 3.58$, $SD = .10$), and Industrial/Organizational Psychology students ($M = 3.36$, $SD = .08$).

There was a significant difference between majors on Organizational, $F_{(2, 240)} = 8.872$, $p = .001$, partial $\eta^2 = .069$, with Industrial/Organizational Psychology students ($M = 3.78$, $SD = .08$) scoring higher than Educational Psychology students ($M = 3.62$, $SD = .10$), and Counseling and Clinical Psychology students ($M = 3.36$, $SD = .06$).

And there was not a significant difference between majors when considered jointly on Sport, $F_{(2, 240)} = .305$, $p = .737$, partial $\eta^2 = .003$; Teaching and Research, $F_{(2, 240)} = 3.093$, $p = .047$, partial $\eta^2 = .025$; Legal, $F_{(2, 240)} = .719$, $p = .488$, partial $\eta^2 = .006$; Psychodiagnosis, $F_{(2, 240)} = 3.989$, $p = .020$, partial $\eta^2 = .032$; Social, $F_{(2, 240)} = .878$, $p = .417$, partial $\eta^2 = .007$; and Traffic, $F_{(2, 240)} = .713$, $p = .491$, partial $\eta^2 = .006$.

There was a significant multivariate effect for interaction between universities and majors when considered jointly on the ten variables, Pillai's Trace value = .432; $F_{(60, 1416)} = 1.831$, $p = .001$, partial $\eta^2 = .072$. Based on the result, the second hypothesis (H_{03}) was rejected. A separate ANOVA was conducted for each dependent variable, with each ANOVA evaluated at an alpha level of 0.005 (i.e., 0.05/10). The results found that there was not a significant

difference between universities and majors when jointly on Clinical and Health, $F_{(6, 240)} = .989$, $p = .433$, partial $\eta^2 = .024$; Sport, $F_{(6, 240)} = 1.049$, $p = .395$, partial $\eta^2 = .026$; Teaching and Research, $F_{(6, 240)} = .532$, $p = .784$, partial $\eta^2 = .013$; Educational, $F_{(6, 240)} = 1.231$, $p = .291$, partial $\eta^2 = .030$; Legal, $F_{(6, 240)} = .792$, $p = .577$, partial $\eta^2 = .019$; Neuropsychology, $F_{(6, 240)} = 1.630$, $p = .140$, partial $\eta^2 = .039$; Organizational, $F_{(6, 240)} = 2.456$, $p = .025$, partial $\eta^2 = .058$; Psychodiagnosis, $F_{(6, 240)} = 1.126$, $p = .348$, partial $\eta^2 = .027$; Social, $F_{(6, 240)} = .751$, $p = .609$, partial $\eta^2 = .018$; and Traffic, $F_{(6, 240)} = 1.117$, $p = .353$, partial $\eta^2 = .027$.

DISCUSSION

The recent study was conducted to investigate the perception of areas of psychology among Vietnamese Psychology students. This research indicated significant effects of university and major when they are compared simultaneously on Clinical and Health, Neuropsychology, Organizational and Educational. However, there was no interaction between university and major of psychology students when they are compared simultaneously on ten subscales.

The result proved that students majoring in Counseling and Clinical Psychology had more interest and general knowledge about the functions and roles of Clinical and Health Psychology and Neuropsychology than other undergraduates. Specifically, most of these students knew that they could (i) relieve psychotherapeutic care in private practices or clinics; (ii) promote the psychosocial rehabilitation of people with mental disorder such as depression; (iii) realize psychotherapeutic care with individuals, couples, families and groups; and (iv) assist people who have gone through a major disaster. This finding showed that students considered carefully before deciding to major in this field of psychology to achieve career goals in the future. Therefore, they were still interested in studying and broadening knowledge about Clinical and Health, and Neuropsychology after taking psychology courses. In a study, Stark-Wroblewski et al. (2006) reported that undergraduate psychology students had more interest in clinical and counseling psychology when learning and getting the greater knowledge about clinical and counseling psychology than other areas. The useful knowledge of Clinical and Health Psychology and Neuropsychology could interpret the great perceptions and interest in these areas of Counseling and Clinical Psychology students. Neuropsychology studies on the relationship between brain and individuals' behaviour and the effects of brain functions on human behaviour and problem related (Plante, 2010). When participating in courses related to Clinical Psychology, undergraduates could integrate and apply empirical scientific knowledge to diagnose, alleviate illness and disability, and promote individuals' abilities in growing, adjusting and adapting to different conditions in the future (APA, 2016). Besides, professional knowledge about Health Psychology could assist undergraduates in understanding the etiology of symptoms, boost and maintain mental health (APA, 2008). In Psychology's learning process, students ought to build a solid theoretical foundation of Psychology before studying in their major. Because of this reason, they have to take introductory psychology classes with several subjects in other areas of Psychology. Although Psychology students had knowledge of each area of Psychology, the result of our findings found that students majoring in Educational Psychology had more general knowledge about the functions and roles of Educational Psychology than other undergraduates. According to American Psychology Association Dictionary, Educational Psychology is a domain of Psychology relating to the practical use of psychological principles and theories to a variety of educating and learning issues in educational contexts (APA, 2020a). This psychological discipline deals with psychological issues that can occur in pedagogy (Gordon, 1917). Besides, studying Educational Psychology could help students gain their academic knowledge horizon in this major. Particularly, it assists students in comprehending their development; supply strategies to improve the academic quality and motivational effectiveness; direct the comprehending of the way learners learn and the effect of teaching skills (Duchesne & McMaugh, 2018). Educational Psychology is the most crucial domain of applied psychology which researches the psychological elements and problems in education; it encompasses human development with overall psychological facts associated with the adaptation in the behavior of humans, psychological methods of education, assessment abilities and interests and other issues in Educational Psychology (Aggarwal, 2014). This could be interpreted that students studying this domain had strong interests in their major leading to spending more time on acquiring and broadening knowledge. Consequently, students majoring in Educational Psychology had more perception of Educational Psychology compared to students in other majors. Dunnette (1976, 1990) defined Industrial/Organizational Psychology as an synthesis academic domain of research, theory and practice. Students studying Industrial/Organizational Psychology could expand their knowledge of understanding the relations or interactions between individuals and organizations or institutions. Industrial and Organizational Psychology has been built to teach people choosing the appropriate person for work, educating them to be more productive in their careers, becoming more safe and comfortable at work and improving life standards (Katzell & Austin, 1992). But this field has been seen as a shadow behind other domains of Psychology (Payne & Pariyothorn, 2007) and has not had many classes or courses compared to other fields. This led to the offering more courses related to Industrial and Organizational psychology in learning programs of undergraduate students (Bott et al., 2006). Therefore, more and more students have been approached in this domain of Psychology which led to the result of this study was that Industrial and Organizational Psychology students had more general knowledge about this subfield of Psychology than students in other majors. Because

they comprehend what they had to learn to apply Industrial and Organizational Psychology knowledge to their future careers. So students with Industrial and Organizational Psychology also had the great interests and perspective in (i) working in companies, (ii) facilitating relationships between people and organizations, contributing to the development of both and (iii) selecting employees for a new job.

This study has several limitations. At first, this research could not approach and analyse education curriculum or psychology courses of universities so that the authors could not discuss the reasons leading to differences in perception of areas of psychology among undergraduates from these universities. Secondly, the participants of the research were not evenly dispersed; female students were approximately twice as many as male students which may lead to imprecise results. Besides, the finding only studied undergraduate participants. A final limitation of this study relates to the data collection process, particularly, our research was conducted in COVID-19 pandemic so that the authors had to collect data by google form questionnaires. This may cause the insufficient quality of several questionnaires. Therefore, studies in the future should be conducted to research other participants such as high school students, especially senior students choosing Psychology as their major in higher education to find out student's perception or interest in areas of psychology.

CONCLUSION

Perception is defined as the result of an awareness process about phenomena, things (living animal, plant, or human), connections between objects by activities including noticing, observing, differentiating, and acknowledging. Our results provide additional information about the Vietnamese psychology student's perception of areas of psychology. In addition, this study provides evidence that university and major could affect student's perception of areas of psychology. This could be interpreted that students majoring Psychology had strong interests in their major leading to spending more time on acquiring and broadening knowledge. These findings are helpful for educators in orientating careers and building educational curricula to maintain and cultivate students' interests and positive attitude towards their majors

RECOMMENDATIONS

Future research could study factors affecting the student's perception of psychology such as student's academic achievement, interests in Psychology, and the potential effects of perception on student's academic performance. Besides, future research should conduct studies with larger sample size or in other participants such as high school to investigate their perception of areas of psychology.

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