

Article

An Exploratory Study of Factors That Affect Psychological Well-Being of 4-Year College Freshmen in South Korea

Jiyoung Yoon ¹ and Eunjung Hur ^{2,*}

¹ Institute for Innovation Higher Education, Seoul National University of Science and Technology, Seoul 01811, Korea; ellie5900@naver.com

² Department of Education, Seowon University, Cheongju 28674, Korea

* Correspondence: ejhur@seowon.ac.kr

Abstract: The purpose of this study is to classify college freshmen based on the level of psychological states related to psychological well-being they experience, and to explore the factors influencing these psychological states. Group 1 had low levels of negative psychological states and high levels of positive psychological states (constituting 35% of the total sample); Group 2 had relatively high level of negative psychological states and very low level of life satisfaction (constituting 13% of the total sample), and Group 3 had moderate level of psychological states (constituting 52% of the total sample). First, it was identified that a group with high level of negative psychological states does not necessarily have a low level of positive psychological states in factors such as their self-esteem, resilience, or life goals. Second, female students were more likely to belong to the group with high manifestations of psychological problems. Students who get higher self-satisfaction from their income than their actual annual income, students with more allowance, students with lower burden relating to their tuition, and students who worked less part-time jobs (falls under the financial factor) were less likely to belong to the group with high manifestations of psychological problems. Students who had numerous communications with their peers and had a sense of trust in their school, and students who felt less alienated were also less likely to belong to the group with high manifestations of psychological problems (falls under the social relationship factor). In addition, students who selected their college major in accordance to their aptitudes and interests, or through the influence of their school teachers, were less likely to belong to the mild risk group or the risk group than the students who decided their college major based on employment prospects or recommendations (falls under the enrollment motivation factor). Meanwhile, students with a higher dependency to their mobile phones had higher probability of belonging to the risk group, and students who had higher computer use frequency, such as using a computer to chat or play games, had a lower probability of belonging to the mild risk group or the risk group (falls under the media utilization factor). The results of the study indicate the need for the following: (1) a three-dimensional diagnosis of the psychological state of college freshmen; (2) measures that can improve social relationships, such as support in the curriculum and linkage to counseling institutions; and (3) the selection of a major in accordance to one's aptitude, calling for the need for a linkage with career guidance at the high school stage.

Keywords: psychological well-being; 4-year college freshman; latent profile analysis; exploratory study



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1. Introduction

This study aims to focus on the psychological well-being of college freshmen. The emergence of research on happiness has resulted in there being a growing interest in psychological states all across the world [1]. Satisfaction with life is a psychological state that can be perceived and felt in the present state, and should be felt at all stages of development. The reason for the interest in college freshmen in particular was because the researchers of this study noticed that the level of happiness found among the college students in Korea was not high in comparison to college students from other countries; this is despite the fact that a majority of Korean adolescents enroll themselves for college [2–4].

According to the report by the Ministry of Gender Equality and Family, the subjective level of psychological well-being witnessed by the 19–24 year-old student group was significantly lower than that of the adolescent group statistically. The report further found 74.5% of the approximately 2600 college students to be experiencing symptoms of anxiety, and 43.2% of the same total to be experiencing symptoms of depression [5]. This may have been caused by the unstable identity of college students, who are neither adolescents nor full-grown adults. The prevailing social situation in Korea, wherein the employment rate of college graduates is in a state of turmoil because of the continuous competition for college entrance and slow economic growth, is also a variable which cannot be dismissed. A detailed examination of the employment rate of college graduates reveals that the figure, which was 63–65% for the 5 years since 2014, has dropped sharply to less than 50% in 2020. Under such circumstances, Korean college freshmen experience the pressure of employment, rather than experiencing the positive psychological states of being college students who have escaped the competition for college entrance. This, in turn, causes psychological problems such as feelings of depression and anxiety in freshmen, preventing them from getting adjusted to college, which, in turn, leads to them dropping out or postponing graduation.

Despite the prevailing circumstances, there have been only a few studies on the psychological states related to psychological well-being of college students in Korea, with the studies on the psychological states of freshmen being rarer. This is in stark contrast to the United States and its likes, where there have been studies on the psychological states of college freshmen and their various influencing factors since the 1990s. Most studies on the psychological states of college students in South Korea have only been designed to observe the effects of positive or negative psychological states on psychological stability and stress. Previous studies have either addressed the influence of each of the positive psychological states [6,7] and negative psychological states [8], or have suggested a method for encouraging the cultivation of positive psychological states when the two psychological states were studied together [9]. The positive and negative psychological states have often been interpreted to be inversely proportioned, in which, as one side increases, the other side naturally decreases. However, human psychological states may not work to fit such a formula, and the possibility that previous studies may have provided interpretations restricted under such an inverting pattern cannot be ignored. Under such awareness of the problem, this study intends to identify the psychological conditions of college freshmen through latent profile analysis and explore the causes that affect these psychological states.

Freshmen are considered to experience the greatest cultural shock and psychological reaction when entering university after leaving high school. Appropriate care should be taken to ensure that the students are able to overcome the anxiety about their career path and success with maturity as they move up through their years at college. In consideration of such factors, this study provides significant insight into devising support measures that can benefit the education of college freshmen.

The hypotheses of this study are as follows: first, how many groups should the psychological state types of college freshmen be classified into? Second, what are the factors that influence the characterization of the psychological states related to the psychological well-being of college freshmen?

2. Literature Review

2.1. Effect Factors for Psychological Well-Being

The variables related to negative state of mind used in this study are attention, aggression, physical symptoms, social atrophy, and depression. The variables related to positive psychological states used in this study are self-esteem, self-identity, ego resilience, life goals, and life satisfaction. Previous studies have also mentioned such variables in relation to the positive and negative psychological states of college freshmen [10,11]. In these studies, while the variables related to negative psychological states were verified to influence each other, they were also acting as a relative concept that reduces positive psychological states.

For example, social atrophy directly affect aggression, which lowers life satisfaction [12], while self-awareness variables such as ego resilience had a positive effect on qualitative aspects such as life satisfaction [13].

2.2. Research Trends Concerning the Psychological Well-Being of College Freshmen

As mentioned in the introduction, the research available on the subject of the psychological experiences of freshmen in college (in terms of topic diversity) is still at a rudimentary level in South Korea. First of all, studies have been conducted to reveal the psychological state of freshmen [14–19]. In a study that analyzed the experiences of college freshmen adapting to college life through the research method of hermeneutic phenomenology, the characteristics were summarized as “feeling empty within the time that passes by breathlessly (quickly)”, “difficulties in standing alone freely”, and “feeling bleak in the new environment” [15]. Having conducted a survey of 81 college freshmen who were found to be having both positive developmental experiences and negative experiences at the same time, Oh found approximately 70% of the students to have had regretted entering college or have had thoughts of leaving college, with such a psychological state often being felt in the first semester [17]. Such negative psychological states led to measures including using leave of absence to repeat, transferring elsewhere, or dropping out. There is also a study that analyzed the difference between depression and psychological states related to psychological well-being in accordance to the ego resilience of college freshmen during the COVID-19 outbreak [19]. Such a study has the nature of being basic research that could bring out the implications of creating an environment in which college freshmen live healthy university lives, while also stating their experiences as they are. Along with the studies on the actual situation, there have been a number of studies on the causal relationships of psychological states felt by college students. In specific, there have been studies on the causes of negative or positive psychological states (such as psychological happiness, depression, or stress) felt by college freshmen [20], as well as studies that explore the relationship between psychological states and specific variables (such as college life characteristics, college life adaptation, or academic achievement) [10,21,22]. The studies focusing on college freshmen in the United States have explored a wide variety of topics, mainly focusing on the factors that influence the psychological states of freshmen or the adaptation to academic life.

2.2.1. Family and Social Relationship Factors

The factors that are most commonly mentioned to be associated with the psychological states of college freshmen are relationship aspects, namely family, peers, and professors. Henton et al. [23] conducted an empirical study on the relationship between crisis response and the family support system in 182 American college freshmen. Henton et al. found that students with higher risk awareness had a tendency of showing a negative impression of the college in general [23]. Moreover, they also had a low self-perception concerning their level of adaptation to university. In addition, it was found that students had a higher sense of crisis if their families lived far from the university, or if the students did not have a family relationship within the community where the college was located. There are many recent studies which look closely into the relationship between the home and the place of residence. According to this study, the adaptation of freshmen students to college had a significant correlation with the place of residence. Meanwhile, it was not affected by parents' education level or their marital status [24].

Meanwhile, Balkin and Donaruma [25] studied the fear of success among 70 male students taking communication skills courses at the New York City University. The study revealed that university students who had friends that were not interested in college had more fear of success than those who did not have such friends. It was revealed that this was due to the fear of being rejected by friends who did not go to college. In addition, Garza and Landeck [26] conducted interviews with 500 students to clarify the causes for college freshmen dropping out during courses. When the reasons for freshmen dropping out of

college were classified into individual student reasons, institutional (faculty or teaching staff) reasons, and miscellaneous reasons, the reasons for dropping out did not appear to be associated with the task performance of the faculty or the commitment to student support that was provided at an institutional level. Conversely, the factors affecting the drop-out rates of college freshmen were external factors that were unrelated to student peers or academics. In particular, the reasons for dropping out during courses were related to factors such as individual student problems, family responsibilities, and occupation. These factors were analyzed to explain approximately 84% of the total dropout rate. Recent studies have shown consistent research findings that social support networks in families and schools affect the academic adaptation and high life satisfaction of freshmen [27]. In addition, although it is not a study focusing on freshmen, an analysis of 41 papers on the mental health of university students in developed and developing countries from 2000 to 2020 shows that social relations were found to be as important as other factors such as financial, academic, and psychological factors, as well as factors related to lifestyle. The studies emphasize the need to identify all of these factors in freshmen years to support students' psychological health [28].

The same results were confirmed by a study conducted in Korea; it found that freshmen who had good attachment to their peer groups and who were able to competently use ego resilience had higher life satisfaction [12].

2.2.2. Media Utilization Factors

As IT technology becomes more advanced and popularized, the use of media has also come to be recognized as an important factor affecting the psychological states of college students. The study of Morgan and Cotton [29] is a representative example which reflects this case. In their survey of 500 college freshmen held in 2002, they found that the college freshmen who spent a lot of time chatting online or using emails rarely showed symptoms of depression. However, they also deduced an interesting result that the college freshmen who often used the internet for purposes other than communication, such as games and shopping, showed high symptoms of depression. The purpose and content of internet use also differed on the basis of gender; while the male students frequently used the internet to chat or play games, the female students often used the internet for emails. Considering the current trend, it would not be an exaggeration to say that the distinction between work and daily life has collapsed because of the everyday use of smartphones. Academic interest in college students in relation to internet addiction, impulsivity, and social support has remained high until recently [30].

In addition to the use of computers, the degree of dependence on mobile phones was also added as a variable related to the use of media in this study.

2.2.3. Other Factors Including Finance and Future Career

Other aspects, such as the variables associated with financial factors or employment factors, were also observed to have had influenced college students' psychological states or their adjustment to college life. For example, there is a study that brings out the relationship between the consumption habits of college freshmen and their adjustment to college life. Cummins et al. [31] studied the financial attitudes and consumption habits of college freshmen by presupposing that the financial management ability of college students is important for their academic success and maintenance. As a result of the study, approximately 84% of college freshmen at the time had credit cards, and more than 40% of the freshmen were unable to pay back in time. Lack of financial management skills was one of the reasons why students could not properly manage their lives in college. Furthermore, the freshmen with credit cards had relatively low grades because of them spending their time preparing for the payment of credit card fees. With reference to the results of empirical research on financial factors, this study establishes measures on annual household income, satisfaction with annual household income, average monthly allowance, amount of tuition, and the degree of burden from tuition. Moreover, while it is not a direct variable related to

finance, the presence or absence of part-time jobs undertaken to cover financial problems was also considered as a meaningful variable in predicting psychological states, and thus, added as a variable.

Furthermore, the factors related to career or employment are also very important variables affecting the psychological states of college freshmen [21,26]. In order to add variables related to career and employment, variables related to “whether students have decided on a future job” and the “factors for choosing a college major” were selected as the variables for this study. This was to check how much of a fundamental reason (their aptitude and interests) students had when enrolling to a college, and if they entered the college with firm convictions concerning their future job, having no ambiguity about their career paths.

While the scope of this research is not large, previous studies have explored various topics such as academic problems, family support, companionship, consumption habits, and internet use. Such a research design can provide insights on the psychological aspects of college freshmen from various perspectives. While the existing studies conducted in Korea have their own significance, they have limitations in that they do not consider various contexts, limiting the research models to just the individual psychological dimension. In other words, they overlooked the fact that freshmen can experience positive and negative psychological states simultaneously. They also overlooked the possibility of multidimensional elements influencing psychological states. These studies have had the tendencies to take understanding of psychological states as a relative concept that only deals with a positive or a negative element, or that negative psychological states decrease only when positive psychological states increase. In line with the awareness of such a problem, this study attempts to accurately grasp the psychological states of college freshmen in Korea and explores the factors that influence them. The specific research subjects and research methods used in this study are outlined below.

3. Methodology

3.1. Study Participants

The study targets for this analysis are 907 4-year college freshmen who responded to the youth panel data (secondary data) of the 2016 Korea Youth Policy Institute. The distribution of the participants is as follows (refer to Table 1): in terms of gender, there were 418 males and 489 females. A total of 25.4% participants came from the Seoul, Incheon, and Gyeonggi areas, and the area that recorded the least number of participants was the Chungcheong area, constituting 14.3% of the total participants. However, the proportions were generally similar. The percentage of students who had decided on their future careers was 81.5%, which was the majority, and 72.8% answered that they did not have part-time jobs. As for the financial level of their families, most students answered that they were at an average level, with 61.5% of the total number of students falling under it. Based on such grounds, approximately half of them answered that they were financially more comfortable or more struggling than the students falling under the average level. The majority of students (total of 91.4%) answered that they were healthy.

Table 1. Study participants.

Variables		N	%	Variables		N	%
Gender	Males	418	46.1	Financial level of the family	Financially very comfortable	4	0.4
	Females	489	53.9		Financially comfortable	54	6.0
Area	Seoul, Incheon, Gyeonggi	230	25.4	Health status evaluation	Slightly more comfortable than the average	144	15.9
	Busan, Ulsan, Gyeongnam	169	18.6		Average	558	61.5
	Daegu, Gyeongbuk, Gangwon	163	18.0		Slightly struggling	102	11.2
	Chungcheong	130	14.3		Struggling	39	4.3
	Honam, Jeju	183	20.2		Extremely struggling	6	0.7
	Missing	32	3.5		Very healthy	248	27.3
Decisions concerning future career	Decided	739	81.5	Healthy	581	64.1	
	Undecided	168	18.5	Unhealthy	71	7.8	
Working part-time jobs	Yes	247	27.2	Very unhealthy	7	0.8	
	No	660	72.8	Total	907	100.0	
Total		907	100.0				

3.2. Instruments

The variables of psychological states and state of mind-related psychological well-being to be addressed in this study used the questions from the 2016 youth panel data of the Korea Youth Policy Institute, which were formulated based on the previous literature. With regard to psychological problems, the scale developed by Jo and Im [32] was used for determining the degrees of attention, aggression, and physical symptoms by modifying the questions and excluding the duplicated questions. The study by Kim and Kim [33] was used to measure social atrophy. Depression was measured using the symptoms check list [34], in which three questions from a total of 13 regarding the degree of depression were excluded. From the self-awareness categories, self-esteem was measured by adapting the self-esteem scale by Rogenberg [35]. For ego resilience, the scale developed by Block and Kremer [36], which was translated, revised, and supplemented by Yoo and Shim [37], was used. For self-identity, the study by Song [38] was used; however, the questions were revised and supplemented into eight questions. For life satisfaction, the questions from the NELS [39] were revised and supplemented to suit the age group. The questions corresponding to life satisfaction were extracted from the study of Kim et al. [40] to further measure life satisfaction.

There was a total of ten variables related to psychological states or the state of mind included in this study for analysis (see Table 2). There was a total of five aspects included in the list of negative psychological states, namely attention, aggression, physical symptoms, social atrophy, and depression. The aspects included in the list of positive psychological states were self-esteem, self-identity, ego resilience, life goals, and life satisfaction. As a result of the reliability verification, ego resilience and life satisfaction showed a reliability of 0.70 or higher, and the other variables showed a sound reliability of 0.80 or higher. All the variables were investigated on a five-point scale.

Table 2. Instruments.

Variables	Number of Items	Scale	Cronbach's Alpha
Attention	7	5	0.80
Aggression	6	5	0.81
Physical symptoms	8	5	0.84
Social atrophy	5	5	0.89
Depression	10	5	0.88
Self-esteem	10	5	0.81
Self-identity	14	5	0.83
Ego resilience	8	5	0.72
Life goals	15	5	0.80
Life satisfaction	3	5	0.79

3.3. Research Methods

The analysis method of this study classified the latent classes in the data using latent profile analysis (LPA). LPA is a type of latent group analysis that groups multivariate data in a systematic and significant method [41]. Unlike the traditional cluster analysis, it uses statistical criteria to determine the number of potential groups, thus reducing the biases caused by the subjective judgment of researchers [42] and increasing the accuracy of classification [43].

In this study, the number of latent groups was determined based on the criteria of Akaike information criteria (AIC), Bayesian information criteria (BIC), Schwarz–Bayesian information criteria (sBIC), and entropy. Smaller values for AIC, BIC, and sBIC, and values closer to 1 for entropy reflect better goodness of fit [44]. In addition, the statistical significance of LMR was also verified.

This was followed by a multinomial logistic regression analysis to analyze the influencing factors. Mplus 14.0 and SPSS 22.0 were used for the respective analyses.

4. Results

4.1. Class Informations

In this study, attention, aggression, physical symptoms, social atrophy, and depression were considered as the negative psychological states, and self-esteem, self-identity, ego resilience, life goals, and life satisfaction were considered as the psychological factors responsible for overcoming negative psychological states. As a result of analyzing the latent profiles based on such grounds, the students were divided into three groups. Table 3 presents the results of analyzing the number of latent groups based on the negative psychological states of college freshmen. As smaller AIC and BIC values reflect better goodness of fit, and values closer to 1 reflect better goodness of fit for entropy [41], students were classified into three groups by considering the values of AIC, BIC, and entropy.

Table 3. Results of Latent Class Analysis.

Parameter	Group 2	Group 3	Group 4	Group 5
Log likelihood	−4387.22	−4161.09	−4059.70	−4030.75
df	31	42	53	64
AIC	8836.443	8406.177	8225.400	8189.492
BIC	8985.557	8608.203	8480.337	8497.341
sBIC	8887.106	8474.818	8312.017	8294.086
Entropy	0.82	0.83	0.81	0.79
LMR (<i>p</i> -value)	<0.05	<0.05	<0.05	Non-Significant (N.S)
Class 1 (%)	0.46	0.35	0.27	0.32
Class 2 (%)	0.54	0.13	0.38	0.01
Class 3 (%)		0.52	0.04	0.09
Class 4 (%)			0.31	0.34
Class 5 (%)				0.24

The characteristics were analyzed in accordance with the three divided groups (refer to Table 4, Figure 1). The LPA resulted in the students being classified into three groups, and the names are based on the average values shown in these data. Group 1 is a group with very low negative psychological states and high positive psychological states. It is mentioned as a normal group in previous studies, and accounts for 35% of the total student population. Group 2 is a risk group with a relatively high level of negative psychological states and very low life satisfaction; it accounts for 13% of the total student population. Group 3 is a group with a moderate level of negative and positive psychological states; it accounts for 52% of the total student population.

Table 4. Class analysis of group characteristics.

Variables	Group 1 (Mean)	Group 2 (Mean)	Group 3 (Mean)
Attention	1.69	2.54	2.16
Aggression	1.36	2.46	1.88
Physical symptoms	1.33	2.47	1.96
Social atrophy	1.68	2.82	2.40
Depression	1.31	2.62	1.97
Self-esteem	2.50	2.67	2.50
Self-identity	2.43	2.62	2.48
Ego resilience	3.07	2.61	2.79
Life goals	3.29	3.12	3.11
Life satisfaction	3.22	2.27	2.78

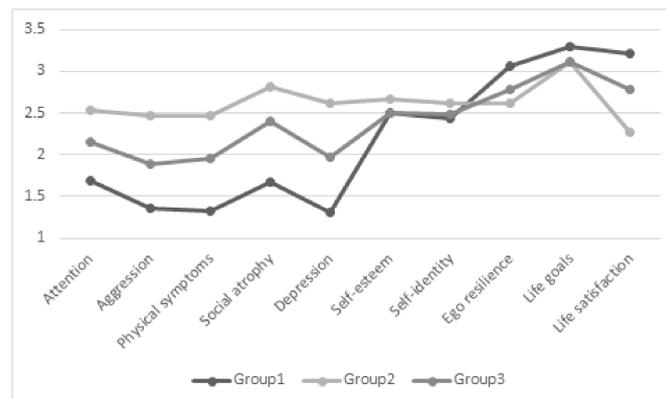


Figure 1. Class analysis of group characteristics.

4.2. The Results of the Influencing Factors Analysis

After dividing each group, we used a multinomial logistic regression analysis to determine the factors influencing each group. The results confirming these factors are presented in Table 5. Group 1, which appeared as a normal group, was set as the standard. Group 2, which had extremely high negative psychological states, was classified as a risk group. Group 3, whose psychological levels lay between that of Groups 1 and 2, was classified as a mild risk group. As a result, in Groups 2 and 3, female students were more likely to belong to the group with higher manifestations of psychological problems than the male students. In addition, Groups 2 and 3 showed higher satisfaction with their annual household income, rather than actually having a high annual household income, lowering the likelihood of belonging to the group with high manifestations of psychological problems. Moreover, students who felt that they were in good health were less likely to belong to the group with high manifestations of psychological problems, and students with higher average monthly allowance also appeared to be less likely to belong to the group with high manifestations of psychological problems. In this regard, the group that did not work part-time jobs were less likely to belong to the group with

high manifestations of psychological problems. Furthermore, the probability of belonging to the risk group was higher when there was an increase in the degree of burden of tuition fees. Thus, the probability of belonging to a risk group with negative psychological states was confirmed to increase with the rise in financial problems.

Table 5. The results of influencing factor analysis (standard value: normal group [group1]).

Variables		Risk Group (Group 2)				Mild Risk Group (Group 3)			
		B	SE	z	p	B	SE	z	p
Gender (females)		0.98	0.39	2.48	0.01	0.85	0.25	3.32	0
Area (Seoul, Kyonggi)	Chungcheong	0.2	0.49	0.41	0.68	0.05	0.30	0.17	0.86
	Daegu, Gyeongbuk, Gangwon	0.72	0.48	1.5	0.13	0.35	0.32	1.12	0.26
	Busan, Ulsan, Gyeongnam	−0.24	0.47	−0.52	0.61	−0.40	0.30	−1.32	0.19
	Honam, Jeju	0.27	0.5	0.55	0.58	0.07	0.32	0.21	0.83
Annual household income		0	0	−0.06	0.95	0	0.00	0.00	−1.40
Satisfaction from annual household income		−0.56	0.2	−2.82	0.01	−0.21	−0.21	0.12	−1.71
Health status evaluation		−1.33	0.25	−5.22	0	−0.85	−0.85	0.17	−4.92
Average monthly allowance		0.03	0.01	2.85	0	0.02	0.02	0.01	2.58
Decisions on future career (NO)		0.03	0.36	0.09	0.93	−0.07	−0.07	0.26	−0.28
Working part-time jobs (NO)		−0.79	0.33	−2.44	0.02	−0.52	−0.52	0.22	−2.34
Tuition amount		−0.18	0.16	−1.16	0.25	−0.01	0.08	0.10	0.84
Degree of tuition's burden		−0.47	0.19	−2.45	0.01	−0.62	−0.08	0.12	−0.67
Number of cultural activity experiences		−0.02	0.02	−0.81	0.42	−0.35	−0.01	0.01	−1.14
Communications with peers		−0.65	0.43	−1.49	0.14	0.30	−0.62	0.29	−2.15
Trust between peers		−0.69	0.4	−1.72	0.09	0.85	−0.35	0.27	−1.30
Feeling of alienation from peers		0.78	0.26	2.96	0	−0.21	0.30	0.18	1.73
Mobile phone dependency		1.87	0.27	6.83	0	−0.85	0.85	0.18	4.84
Frequency of Computer usage	Gaming	−0.3	0.16	−1.92	0.02	−0.28	0.10	−2.77	0.01
	Chatting messengers	0.06	0.15	0.42	−0.07	0.12	0.10	1.17	0.24
	emails	−0.49	0.16	−2.96	−0.52	−0.32	0.11	−3.00	0.00
Majors (Humanities & Social Science)	Natural science and engineering	0.29	0.33	0.87	0.39	0.15	0.21	0.71	0.48
	Medicine and pharmaceutical studies	0.43	0.51	0.85	0.4	0.21	0.34	0.61	0.55
	Arts and sports	−0.1	0.58	−0.18	0.86	0.23	0.36	0.63	0.53
Factors responsible for deciding college majors	Employment prospects after graduation	−0.24	0.22	−1.09	0.28	−0.18	0.15	−1.26	0.21
	Suggested by parents (family)	−0.13	0.22	−0.57	0.57	0.06	0.14	0.45	0.66
	Suggested by friends or relatives	0.22	0.21	1.05	0.29	0.20	0.14	1.42	0.16
	Suggested by school teacher	−0.35	0.2	−1.75	0.08	−0.43	0.13	−3.40	0.00
	Student's own interests and aptitudes	−0.57	0.21	−2.69	0.01	−0.25	0.15	−1.70	0.09
	Student's grade (college entrance exam/high school grades)	−0.28	0.21	−1.3	0.19	−0.08	0.14	−0.60	0.55
College satisfaction level		0.06	0.26	0.24	0.81	0.12	0.18	0.68	0.50
Major satisfaction level		−0.17	0.26	−0.65	0.52	−0.13	0.18	−0.73	0.47
Intercept		9.81	2.26	4.33	0	6.72	1.83	3.67	0.00

The relationship variable of peer relationships showed the following results. Students who had more communications with their peers were less likely to belong to the group with high manifestations of psychological problems. This was found to be more impactful in the mild risk group than the risk group. Moreover, a higher sense of trust in one's peers implied a lesser likelihood of belonging to the group with high manifestations of psychological problems. However, this was more impactful in the risk group than in the

mild risk group. In addition, students who felt more alienated by their peers had a higher possibility of belonging to the group with high manifestations of psychological problems.

Furthermore, students with higher dependence on their mobile phones had a higher likelihood of belonging to the group with high manifestations of psychological problems, which was more influential in the risk group. Students with a higher frequency of computer use (playing games, emails) were less likely to belong to the group with high manifestations of psychological problems. The use of computers was more impactful in the risk group.

In terms of the factors that affected the students' decision to pursue specific college majors, students who selected their majors in accordance with their interests or aptitudes, or students who made their selections based on the recommendations of their teachers and their own interests and aptitudes, were less likely to belong to the mild risk group or the high-risk group.

5. Discussion

5.1. *Need for a Multidimensional Diagnosis of the Psychological State of College Freshmen*

As per the results of this study, it is possible to identify a group that has a high level of negative psychological states as well as a high level of positive psychological states. This implies that the use of common-sense measures to instill healthy self-awareness through methods such as the promotion of happiness or self-esteem to overcome negative psychological states, such as aggression and depression, are no longer effective. In other words, negative psychological states must be interpreted as psychological states that can coexist under certain situations, even for people who have healthy psychological states. In addition, if colleges have been providing professional treatment such as personal counseling solely for students with high levels of negative psychological states, then they should also check for areas that are in need of assistance and provide appropriate support to students with high levels of positive psychological states through multidimensional diagnosis. It can also be accompanied by disorders such as sleep disturbances, along with the disappearance of anxiety in the event of a disorder [45,46]. This has the potential for freshmen who have experienced negative psychological states to simultaneously perceive a healthy psychological state (i.e., a state in which anxiety has been removed). Considering that point, it is necessary to make comprehensive judgments on matters such as psychological states and accompanying physical symptoms, rather than relying on the superficial perception of new students' psychological states.

5.2. *Measures to Improve Social Relationships: Provision of Support within the Curriculum and Linkage to Counseling Institutions*

The results of this study—which derived the outcome that communication and trust between peers lowers the likelihood of manifestations of psychological problems—support the results of previous studies that emphasized the importance of social relationships [12,22,23,26]. Rather than the factors that are directly associated with college, such as the curriculum, facilities, or welfare, the interactions with peers within the aforementioned factors have been shown to play a crucial role in determining the students' psychological states. Such results suggest the necessity of designing and operating class curriculums and extracurricular activities by including elements that emphasize the interaction between students. Indeed, the general delivery-style teaching methods cannot be undermined in allowing students to effectively acquire the basic knowledge regarding their major. However, colleges should pursue the direction of encouraging students to learn through communication with peers, adhering to the process of using and embodying knowledge as their own. Therefore, it is necessary to actively examine the implementation of debate classes, project-based classes, and the use of Chavrusa techniques, which are well known as Jewish education methods, in class curriculums and extracurricular activities. An important aspect in this regard is to implement the application in accordance with the students' temperaments and levels. For Asian students who are relatively passive in freely expressing their opinions, the techniques should be applied in a step-by-step fashion to

ensure that the projects that are to be made by students and for student participation occur uniformly without force.

In particular, most of the colleges across the world have conducted non-face-to-face online classes with the spread of coronavirus since 2019. Beyond the difficulties experienced in learning, college students experienced a great sense of depression in relation to the disappearance of campus life [19]. In particular, college freshmen could not experience the images of college life, for they could not interact soundly with professors, seniors, or peers. Even if the COVID-19 situation improves, college freshmen who are missing the images of college life are required to be given special care both within classrooms and outside the classrooms in order to lead mentally healthy college lives. References can be drawn from online colleges such as the Minerava School for techniques on how to effectively incorporate active discussions, interactions, and problem-solving processes within classes. Besides the teaching aspects, the role of professional institutions dedicated to the psychological diagnosis and care of freshmen should be established in depth.

5.3. Selecting College Major Based on Aptitude: Requires a Linkage with Career Guidance at the High School Stage

The results of the study show that college freshmen were less likely to be in the psychological risk group when the choice for their major was selected based on their own interests, aptitudes, and recommendations from their school teachers. The students received more positive influence when they followed intrinsic motivations of what they wanted and when they made their decisions based on the guidance and recommendations of their school teachers regarding their studies and aptitudes, than when they made their decisions by being conscious of their employment prospects after graduation. This is consistent with the previous studies, which also showed anxieties or worries about employment as a major influencing factor on the psychological states of college freshmen or their adjustment into college life [21]. The motivations for employment and decisions about majors are not the same concept. However, the two aspects belong to an inseparable relationship. Therefore, the aforementioned result depicts the possibility of having college freshmen who have chosen their major based on the systematic guidance of teachers and their own aptitude to be psychologically healthier than the students who have enrolled due to external motives. In other words, those who chose a career path based on external conditions (such as employment prospects or recommendations from people around them) are less likely to be able to withstand numerous insecure situations. This can be explained through the effect of “near miss or near outcomes”, in which humans feel relatively more regretful when an opportunity is missed by a slight difference; the intensity of the regret being stronger [47]. When maladaptation is experienced during their studies, a student who chose a major with good employment prospects or a major based on their parents’ wishes, despite the availability of the major they wanted to study or befitting their aptitude, their inner strength to overcome such situations would inevitably be low, and their negative psychological state would deepen. Therefore, the results of this study are also theoretically convincing in that the possibility of manifesting psychological problems becomes lower when students decide their major in accordance with their aptitude and motivation. Moreover, the results showed that freshmen who chose their major based on the recommendations of their school teachers, rather than on the recommendations of their parents, relatives, and peers, to have a lower probability of belonging to the mild risk group or the risk group. This is significant in that it allows the for inference on the effect of career guidance from school teachers prior to the college entrance examination. A similar Korean study [48] showed that the experience of career education during elementary, middle, and high schools has a positive effect on enhancing the career development competency of students. Accordingly, students must acquaint themselves with guides that encourage them to check their own aptitudes and explore their majors during the elementary, middle, and high school stages, especially in the high school stage, in order to secure the psychological health of college freshmen.

5.4. Other Factors: Provision of a Sense of Security for Physical Health, Mental Health, and Financial Conditions

The results of this study show that students having healthier perceptions about their physical condition, students having lesser dependency on their mobile phones, and students having a higher frequency of computer use for matters such as gaming or emails appear to be less likely to manifest psychological problems. The use of communication functions such as chatting, emails, and messaging applications have a positive effect, which is consistent with the findings of previous studies. However, the fact that games also play a positive role is an interesting result that contrasts with the findings of previous studies. Follow-up research is required for an appropriate interpretation. However, the result can be interpreted as arising from the positive functions of gaming, such as the changes in gaming methods to rely on collaboration. Contents should be developed and implemented for students to feel the effects of collaboration or communication in various contexts, such as applying the techniques of gamification to online or offline classes and extracurricular activities.

In contrast, the influence of financial factors on the psychological problems of college freshmen was confirmed by this study. However, the fact that the students' own satisfaction relating to their annual household income affects the psychological health of students, rather than the absolute figure of the income, is worth noting. As the psychological security, also known as the psychological factor, regarding financial conditions plays a decisive role, there is a necessity to provide scholarship systems to college students or offer various work opportunities within the school. Considering that working more part-time jobs increases the possibility of having psychological problems, it is necessary to find solutions to help students feel relieved from financial problems and minimize the disruptions caused to their studies by providing campus work opportunities.

6. Conclusions

The purpose of this study was to classify college freshmen based on the range of psychological states they experienced and to explore the factors influencing these psychological states. Group 1 had low levels of negative psychological states and high levels of positive psychological states (constituting 35% of the total sample); Group 2 had a relatively high level of negative psychological states and a very low level of life satisfaction (constituting 13% of the total sample), and Group 3 had a moderate level of both negative psychological states and positive psychological states (constituting 52% of the total sample).

First, it was identified that a group with a high level of negative psychological states does not necessarily have a low level of positive psychological states in factors such as their self-esteem, resilience, or life goals. Second, female students were more likely to belong to the group with high manifestations of psychological problems. Students who got higher self-satisfaction from their income than their actual annual income, students with more allowance, students with lower burden relating to their tuition, and students who worked less part-time jobs (falls under the financial factor) were less likely to belong to the group with high manifestations of psychological problems. Students who had numerous communications with their peers and had a sense of trust in their school and students who felt less alienated were also less likely to belong to the group with high manifestations of psychological problems (falls under the social relationship factor).

In addition, students who selected their college major in accordance to their aptitudes and interests, or through the influence of their school teachers, were less likely to belong to the mild risk group or the risk group than the students who decided their college major based on employment prospects or recommendations (falls under the enrollment motivation factor). Meanwhile, students with a higher dependency to their mobile phones had a higher probability of belonging to the risk group, and students who had a higher computer use frequency, such as using a computer to chat or play games, had a lower probability of belonging to the mild risk group or the risk group (falls under the media utilization factor).

The results of this study indicate the need for the following: (1) a three-dimensional diagnosis of the psychological state of college freshmen; (2) measures that can improve social relationships, such as support in the curriculum and linkage to counseling institutions; and (3) the selection of a major in accordance to one's aptitude, calling for the need for a linkage with career guidance at the high school stage.

This study is meaningful in that it derives academic and practical implications for exploring effective ways to manage the psychological states of college freshmen. However, the influencing factors in various areas could not be explored sufficiently due to the limitations of the analysis data. In addition to the personal features of the students such as allowance, whether they hold a part-time job, and tuition burden, many other hypotheses were found in previous studies claiming that the following macroscopic factors surrounding the students can affect the psychological states of freshmen: parents' socioeconomic status, their educational attainment, employment status, and type of employment [45,46]. Therefore, it is suggested that future studies should derive more practical implications by exploring diverse influencing factors through extensive data collection.

On the other hand, negative and positive psychological states may not be classified into healthy and unhealthy psychological states, as mentioned above in the fifth paragraph. Instead, it may be a complex combination of various psychological and physical symptoms. This study is significant in that it may be a primary study showing the possibility of coexistence between negative and positive psychological states and follow-up studies are needed to find the clues to the conundrum through an in-depth exploration of psychological symptoms.

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