Journal of Aviation/Aerospace Education & Research

Volume 33 | Number 1 Article 3

2024

A Comparative Analysis of School Choice Factors Influencing Non-Collegiate Flight School Selections Between Groups of Nontraditional, Traditional, and Teenage Student Pilots

Jingmin Jin Ph.D.
Aircraft Owners and Pilots Association (AOPA), jinjingminmail@gmail.com

Scholarly Commons Citation

Jin, J. (2024). A Comparative Analysis of School Choice Factors Influencing Non-Collegiate Flight School Selections Between Groups of Nontraditional, Traditional, and Teenage Student Pilots. *Journal of Aviation/Aerospace Education & Research, 33*(1). DOI: https://doi.org/10.58940/2329-258X.1988

Abstract

To assist with exploring strategies for effectively promoting vocational noncollegiate flight schools to diverse student markets of nontraditional student pilots, traditional student pilots, and teenage high-school-aged student pilots, this study compared and analyzed school choice factors of marketing approaches, relevant people, institutional features, and training program features that influenced these three groups of student pilots' school selections. The study data was collected via a survey questionnaire, and the sample included 176 participants. There were 42 choice factor survey items, and the participants were guided to rate the level of influence of each factor on their school choice decisions. Descriptive statistics and one-way ANOVA methods were utilized to analyze the collected data. According to the key findings, all three groups highlighted the following factors as most influential on their school choice: training quality, availability of flying opportunities, training costs, safety records of the programs, reputation of flight instructors, the school's overall reputation, length of time to complete the program, scheduling flexibility, training capacity, and administration integrity. While the typical discrepancies of the key findings among the three groups revealed that both traditional and teenage student pilots considered relevant people of family members as having the most influence. Nontraditional student pilots deemed institutional features of geographic proximity as a key factor. Teenage student pilots emphasized institutional features of career placement as relatively more influential. The ANOVA results showed that significant differences existed in the influence of relevant people of school's flight instructors and of family members.

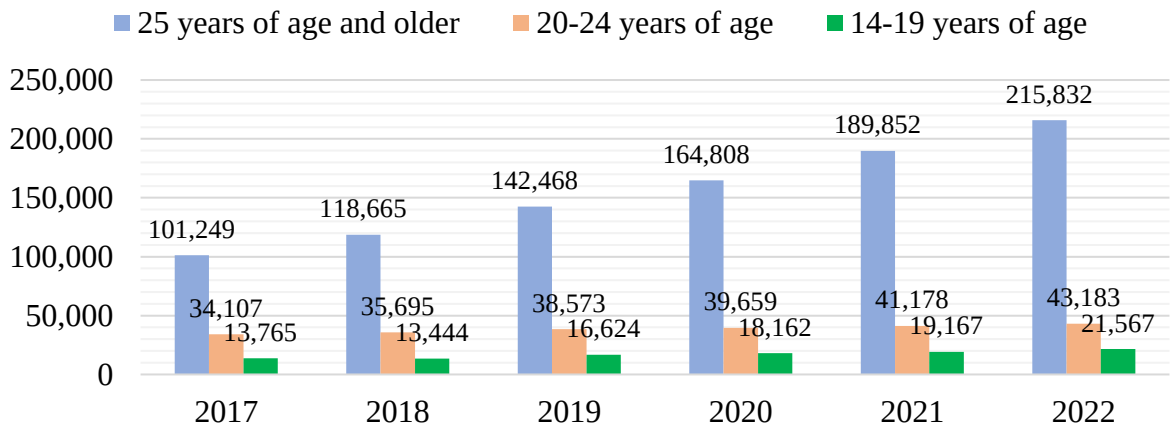
Keywords: comparative research, nontraditional student pilot recruitment, traditional student pilot recruitment, teenage student pilot recruitment, school choice factors, vocational pilot training, marketing flight school training

Introduction

According to the U.S. Employment and Training Administration (ETA, 2007), educational institutions that provide vocational and technical degrees and certificates are favorable for nontraditional, adult students. The ETA (2007) and National Center for Education Statistics (NCES, n.d.) introduced that "the defining characteristic" of those nontraditional students is that they are over the age of 24 (para. 1). Indeed, the U.S. Federal Aviation Administration (FAA, n.d.) Civil Airmen Statistics of the consecutive years 2017-2022 did reveal that a large component of the active student pilots fell under the age profile of nontraditional students; as of December 31, 2022, this group of students made up 76.92% (215,832) of the total active student pilot population, the number of active teenage student pilots aged 14-19 represented 7.69% (21,567), and those who aged 20-24 accounted for 15.39% (43,183) (see Figure 1).

Figure 1

Estimated Active Student Pilot Certificates Held by The Three Age Group of Holder



Note. From "U.S. Civil Airmen Statistics, Annual Statistics 2017-2022," by Federal Aviation Administration, n.d., U.S. Department of Transportation. In the public domain.

Despite a large pool of nontraditional student pilots in the entry-level programs in pilot education, not to mention a very limited number of studies specifically focusing on those nontraditional students' school choice patterns, the existing literature on school choice generally focuses on traditional students based upon their enrollment in colleges and universities for academic, degree-based programs. Traditional students are commonly recognized as the primary focus in higher education (ETA, 2007; Maringe & Gibbs, 2008), and they typically are 18-24 years of age and recent high school graduates (ETA, 2007; Kamer & Ishitani, 2021). Epperson (2012) noted that vocational and technical education plays a pivotal role in providing practical career training and supplying a sufficient quality workforce to assist maintaining the industry employment rigor. Boeing's (2022) pilot outlook proposed that the aviation industry needs to focus on developing the pilot workforce in order to fill the expected position gaps for the large cohort of retiring airline pilots.

To expand the pilot population base, one approach is to improve the understanding of student pilots' school choice patterns with the aim of advancing the promotion of training programs to diverse student markets and enhancing the effectiveness of flight school recruiting and enrollment efforts. The literature review showed a sparse number of studies that focused on exploring strategies for effectively promoting flight schools and recruiting students by examining student pilots' choice patterns for flight schools. Of the civilian flight training schools, the U.S. Government Accountability Office (2011) reported that vocational noncollegiate flight schools make up 95% of the training schools. Hence, the purpose of this study is to compare and analyze school choice factors (e.g., tuition, location, campus activities, and reputation of the school) that influenced vocational noncollegiate flight school selections between groups of nontraditional

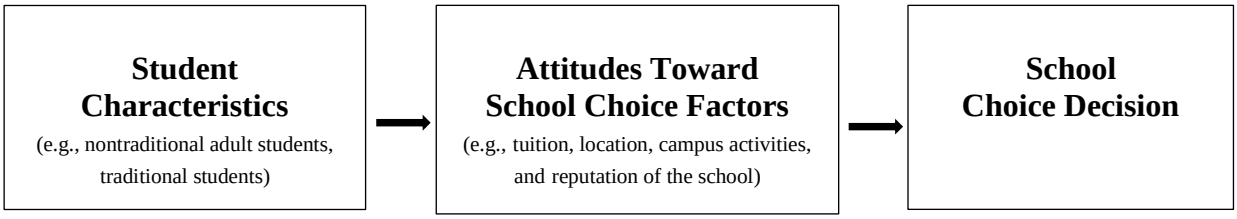
student pilots (age profile of 25-34), traditional student pilots (age profile of 19-24), and teenage student pilots (age profile of 15-18).

Literature Review

Hemsley-Brown and Oplatka (2016) stated that in the higher education marketplace, students' personal and group characteristics (e.g., traditional students, nontraditional adult students) and their perceptions and preferences about schools, contribute to the basis of student market segments for school recruiters to develop appropriate recruitment strategies. Hemsley-Brown and Oplatka (2016) proposed a research model for higher education school choice (see Figure 2). This model was developed based on the theory that student characteristics affect how they perceive various school choice factors (e.g., tuition, location, campus activities, and reputation of the school) in shaping their expectations for school life, which ultimately contributes to students' determination in selecting a certain school (Chapman, 1981; Hemsley-Brown & Oplatka, 2016; Hoyt & Brown, 2003).

Figure 2

The Research Model for Higher Education School Choice



Note. Adapted from *The Simple Research Model of Higher Education Consumer Choice of Institution* by Hemsley-Brown and Oplatka, 2016, p. 124; "A Model of Student College Choice," by D.W. Chapman, 1981, *Journal of Higher Education*, *52*(5), pp. 490-505; "Identifying College Choice Factors to Successfully Market Your Institution," by *J.E.* Hoyt and A.B. Brown, 2003,

College and University, *78*(4), pp. 3-10; and *An analysis of college choice factors that influence the decision of students to enroll in the airway science-professional pilot program at Kansas State University* (Publication No. 3098174) by M.A. Melvin, 2003.

Of student characteristics, researchers including Hemsley-Brown and Oplatka (2016), Kallio (1993), and Kotler and Fox (1995) stressed that people make choices according to their different life stage experiences and circumstances, and "age as an indicator of life stage" (Kallio,1993, p. 99) has been identified as a distinguishing variable in respect of students' attitudes toward various factors affecting their school choice decisions. As such, students in higher education are generally categorized as traditional students and nontraditional students by distinguishing their age profiles as the typical evidence (ETA, 2007; NCES, n.d.). Traditional students in general are between 18 and 24 years of age (ETA, 2007; Kamer & Ishitani, 2021); some researchers also categorize students aged 18 to 21 as traditional students (ETA, 2007; Paulsen, 1990). This group of students normally are recent high school graduates, enrolled as full-time students, and financially dependent (ETA, 2007). Traditional students are gaining greater attention in higher education (ETA, 2007; Maringe & Gibbs, 2008) as they account for a large percentage of the total higher education student population (Maringe & Gibbs, 2008; Postsecondary National Policy Institute, 2023). As for nontraditional students, as mentioned previously, the ETA (2007) and NCES (n.d.) asserted that being over the age of 24 is the distinctive characteristic for this group; in addition, other common characteristics for nontraditional students are that they are more likely to be financially independent, employed, and have dependent(s).

Hemsley-Brown and Oplatka (2016) and Hoyt and Brown (2003) suggested school operators, when reaching and recruiting such different student market segments, consider

adapting marketing approaches and stressing communication messages according to students' different preferences, expectations, and needs when they choose a school. For example, when reaching the market segment of nontraditional students, based upon Hutchens' (2016) study of nontraditional student enrollment behavior for colleges, recruiters could emphasize the school's specific majors, education cost, quality of faculty, and access to faculty. In addition, the ETA (2007) and Kallio (1993) also recommend that nontraditional students who have dependent children would very much appreciate schools that provide temporary on-campus child-care services while they are taking classes. As for traditional students' perspectives on factors that influenced their selections of higher education institutions, according to Stolzenberg et al.'s (2019) survey, these students generally considered the school's academic reputation, graduates getting good jobs, campus activities, and financial aid as the key choice factors; additionally, they emphasized school marketing approaches of internet-based advertising and word-of-mouth referrals as the two most influential (Martirano, 2017). For high school students who plan to further their education, when considering a college, they typically evaluate choice factors of program options, cost, and financial aid to determine a school (Pampaloni, 2010; Walton, 2014); moreover, students reported that school marketing approaches of tour/open house and school's websites greatly affected their decision-making (Pampaloni, 2010).

Research Gap and Significance of the Study

Maringe and Gibbs' (2008) "Marketing Higher Education" pointed out that the nontraditional student market segment of the age profile of 25-35 is gaining focus as an important market potential, though traditional students (age profile of 18-24) are generally acknowledged as the primary focus (ETA, 2007) since they represent a larger portion of the total higher education student population (Maringe & Gibbs, 2008; Postsecondary National Policy

Institute, 2023). Yet, in the pilot education field, according to the FAA's (n.d.) Civil Airmen Statistics for the consecutive six years 2017-2022, there were more active student pilots who fell under 25-34 years of age, accounting for about 35.44% of the total active student pilot population, than those who fell under 14-24 years of age, accounting for approximately 26.43%. Accordingly, it is crucial to investigate school choice patterns for the student pilot market segment of the age profile of 25-34.

The FAA's (2020) "Youth Access to American Jobs in Aviation Task Force" reported that fewer high school students aspired to pursue a career as a pilot. To effectively attract youth for pilot training, one method is to identify this group of students' choice patterns for flight schools. Hence, it is necessary to study those students who aspired to become career pilots (i.e., airline pilots) and enrolled in their initial pilot programs when they were 15-18 years of age, matching the general student high-school-aged profile.

There is ample literature that investigates general students typically of traditional students' school choice in selecting academic, degree programs at collegiate institutions. While a limited number of studies focus on student pilots who choose schools for the initial pilot training programs, with an effort for obtaining fundamental recruitment data to effectively attract and recruit new students into the pilot field, specifically on studying the main student market segments of nontraditional student pilots, traditional student pilots, and teenage student pilots. Thus, it was significant to conduct this study.

Study Purpose and Objectives

The purpose of this study was to compare and analyze school choice factors that influenced vocational flight school selections between groups of nontraditional student pilots

(age profile of 25-34), traditional student pilots (age profile of 19-24), and teenage student pilots (age profile of 15-18). This research was further guided by the following objectives:

1. Determine if a significant difference exists regarding marketing approaches influencing flight school selections between groups of nontraditional student pilots, traditional student pilots, and teenage student pilots.
2. Determine if a significant difference exists regarding relevant people influencing flight school selections between groups of nontraditional student pilots, traditional student pilots, and teenage student pilots.
3. Determine if a significant difference exists regarding institutional features influencing flight school selections between groups of nontraditional student pilots, traditional student pilots, and teenage student pilots.
4. Determine if a significant difference exists regarding training program features influencing flight school selections between groups of nontraditional student pilots, traditional student pilots, and teenage student pilots.

Methodology

Data Source

The data of this study was gathered based on Jin's (2019) survey of student pilots regarding their perceptions toward school choice factors influencing their decisions of selecting vocational flight schools for the initial private pilot programs. The survey was conducted between July and October 2019 with protocol number 1904137978A003 endorsed by the Institutional Review Broad at a university, in California, USA. All participants completed the informed consent form before taking the survey.

In the current study, a total of 176 survey responses/participants were included. Based on the research design, the participants met the following survey participation inclusion criteria: (1) already an airline pilot or inspired to become an airline pilot, and (2) enrolled in a vocational noncollegiate Part 61 school or a Part 141 school for (airplane) private pilot program in California between the years 2016 and 2019. This study categorized the participants into three groups based upon their endorsement age profiles of 25-34, 19-24, and 15-18 when they enrolled in flight schools between 2016 and 2019. In accordance with such age profiles as well as the literature, the participants of the three groups in this study are referred to as nontraditional student pilots, traditional student pilots, and teenage student pilots.

Sample Size

To obtain a power of 80% with the effect size f of 25% in a one-way between-subjects ANOVA (three groups, alpha = .05), a minimum sample size of 159 for this present study was recommended by using the G*Power software program according to the a priori power analysis. The sample in this study included 56 nontraditional student pilots, 75 traditional student pilots, and 45 teenage student pilots. Overall, the total sample of this study consisted of 176 participants that met the a priori power analysis recommendation.

Data Collection

The survey was administered between July and October 2019 through the online survey tool, Qualtrics. The data collection was completed via two channels: (1) by distributing the survey to various online pilot community sites to reach prospective participants and (2) with the help of 110 vocational flight schools distributing the survey. The random sampling method was adopted in the data collection process. This method assures that every prospective participant has

the same chance to be included in the research, and therefore, improves the validity that the collected data could be the surrogate of the targeted population (Panacek & Thompson, 2007).

Survey Instrument

Burns and Grove (1993) stated that research content validity could be enhanced from the following three sources "literature, representatives of the relevant populations, and content experts" (p. 343). Accordingly, this study's survey instrument was adapted based on Hemsley-Brown and Oplatka's (2016) school choice research model, as well as eleven relevant studies and was amended with the help of a panel of experts from related fields. These experts were two education professors, two flight school managers, two pilots, and one certificated flight instructor (CFI). The eleven relevant studies were conducted by Abdolalizadeh (2014); Aircraft Owners and Pilots Association (AOPA, 2010); AOPA (n.d.); Dickinson, (2003); Hoyt and Brown, (2003); Kallio (1995), Mahajan and Golahit (2017); Martirano (2017); Melvin (2003); Pampaloni (2010); and Sheppard (2013).

By adapting the relevant literature, the survey questionnaire in the current study included 42 choice factor survey items and was designed with an emergence of the following four themes: marketing approaches, relevant people, institutional features, and training program features. The questionnaire used a five-point Likert scale model for the participants to rate the level of influence or importance of each factor on their flight school choice decisions.

Data Analysis

Descriptive statistics were used to compare, describe, and summarize the study results (Lee, 2020). In addition, inferential statistics of one-way between-group ANOVA tests were applied to examine the significance of the mean differences between the three groups regarding their ratings of influence or importance of each choice factor on their flight school selections. If a

significant difference was detected in the ANOVA, Tukey post-hoc test would be conducted to examine every pair-wise comparison. All tests had a critical alpha level set at .05.

Findings

Table 1 provides the results of the average ratings and the corresponding standard deviations of the influence of eight marketing approaches on flight school selections for nontraditional student pilots, traditional student pilots, and teenage student pilots. The one-way ANOVA tests were applied to examine if a significant difference exists in the influence of marketing approaches on flight school selections between the three groups. Tukey post-hoc test for multiple comparisons would be conducted when a significant difference was identified in the ANOVA.

Specifically, regarding the key findings of the average ratings, it was found that the three groups had some common responses, as all three groups ranked contact with CFIs, contact with staff, and word of mouth as the top three influential marketing approaches. In addition, it should be noted that teenage student pilots deemed campus visits and contact with staff equally influential, both ranked 2nd, among the eight marketing approaches. With respect to the ANOVA results, no statistically significant difference was identified.

Table 1

Marketing Approaches Influencing Student Pilots in Flight School Selections

	Total sample (N = 176)		Nontraditional group (n = 56)		Traditional group (n = 75)		Teenage group (n = 45)	
	M (rank)	SD	M (rank)	SD	M (rank)	SD	M (rank)	SD
Contact with CFIs	3.73 (1)	1.23	3.82 (2)	1.36	3.81 (1)	1.20	3.49 (1)	1.10

Contact with staff	3.64 (2)	1.13	3.91 (1)	1.03	3.57 (3)	1.15	3.40 (2)	1.16
Word of mouth	3.55 (3)	1.32	3.66 (3)	1.23	3.60 (2)	1.39	3.31 (3)	1.33
Campus visits	3.35 (4)	1.30	3.32 (4)	1.18	3.33 (5)	1.37	3.40 (2)	1.36
School's website	3.27 (5)	1.42	3.16 (5)	1.53	3.44 (4)	1.31	3.11 (4)	1.45
Other internet sources	2.98 (6)	1.33	3.11 (6)	1.25	3.09 (6)	1.36	2.64 (5)	1.35
Social media	2.60 (7)	1.27	2.63 (7)	1.34	2.57 (7)	1.23	2.60 (6)	1.27
Conventional media (e.g., radio, television, print)	1.93 (8)	1.18	1.95 (8)	1.13	2.09 (8)	1.29	1.64 (7)	1.03

Note: Likert scale: 1 = *not influential at all*, 5 = *extremely influential*.

Table 2 presents the results of the average ratings and the corresponding standard deviations of the influence of eight relevant people on flight school selections for nontraditional student pilots, traditional student pilots, and teenage student pilots. The one-way ANOVA tests were applied to examine if a significant difference exists in the influence of relevant people on flight school selections between the three groups. According to the ANOVA, there was a significant difference in the influence of school's CFIs, $F(2, 173) = 3.38$, $p < 0.05$. There was also a significant difference in the influence of family members, $F(2, 173) = 8.44$, $p < 0.05$. Tukey post-hoc tests were conducted (see Table 3). Table 3 demonstrated post-hoc test results of multiple pair-wise comparisons examining the significant differences in the value of the influence of school's CFI scores and the influence of family member scores between the three groups.

Specifically, regarding the key findings of the average ratings, it was found that the three groups had some common responses, as all three groups included school's CFIs, current trainee pilots, and school staff in the top four influencing people. In addition, it should be noted that both traditional and teenage student pilots rated family members as having the most influence,

whereas nontraditional student pilots rated family members as having less influence—the 6th influential group out of the eight relevant people groups.

The post-hoc test results (see Table 3) showed that (1) nontraditional student pilots rated the influence of school's CFIs statistically significantly higher than teenage student pilots, mean difference 0.71 and $p < 0.05$; (2) traditional student pilots rated the influence of family members statistically significantly higher than nontraditional student pilots, mean difference 0.83 and $p < 0.05$; (3) teenage student pilots rated the influence of family members statistically significantly higher than nontraditional student pilots, mean difference 1.12 and $p < 0.05$.

Table 2

Relevant People Influencing Student Pilots in Flight School Selections

	Total sample (N = 176)		Nontraditional group (n = 56)		Traditional group (n = 75)		Teenage group (n = 45)	
	M (rank)	SD	M (rank)	SD	M (rank)	SD	M (rank)	SD
School's CFIs*	3.41 (1)	1.38	3.73 (1)	1.29	3.40 (1)	1.38	3.02 (2)	1.44
Family members*	3.21 (2)	1.52	2.57 (6)	1.54	3.40 (1)	1.43	3.69 (1)	1.40
Current trainee pilots	3.16 (3)	1.42	3.32 (2)	1.45	3.32 (2)	1.40	2.71 (4)	1.34
School staff	2.99 (4)	1.33	2.91 (3)	1.40	3.04 (3)	1.20	3.00 (3)	1.45
Graduates	2.77 (5)	1.44	2.88 (4)	1.47	2.84 (5)	1.46	2.53 (5)	1.38
Friends	2.70 (6)	1.42	2.68 (5)	1.45	2.89 (4)	1.39	2.42 (6)	1.42
School executive committee	2.26 (7)	1.36	2.20 (7)	1.39	2.40 (6)	1.40	2.11 (7)	1.25
School sales personnel	2.06 (8)	1.26	2.04 (8)	1.33	2.15 (7)	1.27	1.96 (8)	1.15

Note: Likert scale: 1 = *no influence at all*, 5 = *extreme influence*.

*$p < 0.05$. The p values were calculated with one-way ANOVA.

Table 3

Post-Hoc Test Results of Multiple Pair-Wise Comparisons for the Influence of School's CFIs and Family Members Among Student Pilots Between the Three Groups

Dependent Variable	Three Groups of Student Pilots		Mean Difference (I-J)	Std. Error	Sig.
School's CFIs	Nontraditional	Teenage	0.71*	0.27	0.03*
		Traditional	0.33	0.24	0.35
	Traditional	Teenage	0.38	0.26	0.31
		Nontraditional	-0.33	0.24	0.35
	Teenage	Traditional	-0.38	0.26	0.31
		Nontraditional	-0.71*	0.27	0.03*
Family members	Nontraditional	Teenage	-1.12*	0.29	0.00*
		Traditional	-0.83*	0.26	0.00*
	Traditional	Teenage	-0.29	0.27	0.55
		Nontraditional	0.83*	0.26	0.00*
	Teenage	Traditional	0.29	0.27	0.55
		Nontraditional	1.12*	0.29	0.00*

*The mean difference is significant at the 0.05 level.

Table 4 illustrates the results of the average ratings and the corresponding standard deviations of the importance of 14 institutional features on flight school selections for nontraditional student pilots, traditional student pilots, and teenage student pilots. The one-way ANOVA tests were applied to examine if a significant difference exists in the importance of institutional features on flight school selections between the three groups. Tukey post-hoc test for multiple comparisons would be conducted when a significant difference was identified in the ANOVA.

Specifically, regarding the key findings of the average ratings, it was found that the three groups had some common responses, as all three groups included training costs, the overall reputation, training capacity, and administration integrity in the top five important institutional

features. In addition, it should be noted that nontraditional student pilots rated school location as the 4th most important institutional feature; whereas teenage student pilots rated school location relatively less important—in the 9th place out of the 14 institutional features. On the other hand, teenage student pilots rated career placement as the 4th most important institutional feature, whereas the other two groups rated career placement relatively less important—in the 9th place and 8th place respectively. With respect to the ANOVA results, no statistically significant difference was identified.

Table 4

The Importance of Institutional Features for Student Pilots in Flight School Selections

	Total sample (N = 176)		Nontraditional group (n = 56)		Traditional group (n = 75)		Teenage group (n = 45)	
	M (rank)	SD	M (rank)	SD	M (rank)	SD	M (rank)	SD
Training costs	4.37 (1)	0.89	4.38 (1)	0.89	4.32 (1)	0.92	4.44 (1)	0.87
The overall reputation	4.24 (2)	0.94	4.21 (2)	0.97	4.24 (2)	1.02	4.29 (2)	0.76
Training capacity (student to training aircraft and flight instructor ratio)	4.10 (3)	1.03	4.05 (3)	1.15	4.19 (3)	0.94	4.00 (3)	1.04
Administration integrity	3.98 (4)	1.16	3.82 (5)	1.34	4.17 (4)	1.08	3.87 (5)	1.04
Location	3.84 (5)	1.09	4.00 (4)	1.10	3.84 (6)	1.08	3.64 (9)	1.11
Friendliness of the campus	3.78 (6)	1.14	3.63 (8)	1.26	3.88 (5)	1.13	3.82 (6)	1.01
Career placement	3.74 (7)	1.34	3.59 (9)	1.51	3.72 (8)	1.28	3.96 (4)	1.21

Administration effectiveness	3.73 (8)	1.16	3.68 (7)	1.27	3.80 (7)	1.15	3.67 (8)	1.04
Campus technology and facilities	3.57 (9)	1.18	3.45 (10)	1.28	3.67 (9)	1.22	3.58 (10)	0.97
Distance from your home	3.52 (10)	1.33	3.70 (6)	1.43	3.51 (10)	1.29	3.31 (11)	1.26
Financial aid	3.33 (11)	1.48	3.02 (12)	1.62	3.35 (11)	1.44	3.69 (7)	1.28
Appeal of the campus	3.10 (12)	1.25	2.79 (13)	1.23	3.24 (12)	1.22	3.27 (12)	1.27
Insurance policy for training	2.99 (13)	1.42	3.05 (11)	1.47	3.17 (13)	1.43	2.62 (14)	1.32
School social life	2.80 (14)	1.35	2.63 (14)	1.29	2.73 (14)	1.40	3.11 (13)	1.32

Note: Likert scale: 1= *not important at all*, 5 = *extremely important*.

Table 5 demonstrates the results of the average ratings and the corresponding standard deviations of the importance of 12 training program features on flight school selections for nontraditional student pilots, traditional student pilots, and teenage student pilots. The one-way ANOVA tests were applied to examine if a significant difference exists in the importance of training program features on flight school selections between the three groups. Tukey post-hoc test for multiple comparisons would be conducted when a significant difference was identified in the ANOVA.

Specifically, regarding the key findings of the average ratings, it was found that the three groups had some common responses, as all three groups ranked training quality, availability of flying opportunities, safety records of the programs, reputation of CFIs, and length of time to complete program as the top five important training program features. In addition, it should be noted that traditional student pilots rated scheduling flexibility as relatively more important—in

the 3rd place out of the 12 program features. With respect to the ANOVA results, no statistically significant difference was identified.

Table 5

The Importance of Training Program Features for Student Pilots in Flight School Selections

	Total sample (N = 176)		Nontraditional group (n = 56)		Traditional group (n = 75)		Teenage group (n = 45)	
	M (rank)	SD	M (rank)	SD	M (rank)	SD	M (rank)	SD
Training quality	4.71 (1)	0.63	4.64 (1)	0.77	4.71 (1)	0.61	4.80 (1)	0.46
Availability of flying opportunities	4.39 (2)	0.78	4.50 (2)	0.66	4.40 (2)	0.75	4.22 (4)	0.93
Safety records of the programs	4.31 (3)	1.04	4.38 (3)	0.96	4.25 (4)	1.18	4.31 (2)	0.90
Reputation of CFIs	4.24 (4)	0.88	4.21 (5)	0.97	4.25 (4)	0.93	4.27 (3)	0.69
Length of time to complete program	4.21 (5)	0.98	4.32 (4)	0.88	4.24 (5)	1.04	4.02 (5)	1.01
Scheduling flexibility (e.g., classes and aircraft)	4.13 (6)	0.89	4.05 (6)	0.84	4.27 (3)	0.81	4.00 (6)	1.04
Mechanics on staff	3.74 (7)	1.25	3.73 (7)	1.29	3.76 (6)	1.29	3.73 (7)	1.18
The types of training aircraft	3.66 (8)	1.25	3.54 (8)	1.13	3.75 (7)	1.33	3.67 (8)	1.28
Availability of various training programs	3.47 (9)	1.18	3.25 (10)	1.24	3.64 (8)	1.13	3.44 (9)	1.16
Availability of extra tutoring	3.30 (10)	1.26	3.32 (9)	1.28	3.44 (9)	1.20	3.02 (11)	1.31
Flight simulators	2.98 (11)	1.26	2.91 (11)	1.16	2.97 (10)	1.35	3.07 (10)	1.25

The distance of training aircraft to the runway	2.61 (12)	1.39	2.70 (12)	1.44	2.71 (11)	1.38	2.33 (12)	1.33

Note: Likert scale: 1= *not important at all*, 5 = *extremely important*.

Discussion and Conclusion

The findings of this study revealed some consistencies and discrepancies in various choice factors influencing flight school selections between the groups of nontraditional student pilots, traditional student pilots, and teenage student pilots. For the typical discrepancies regarding the rankings of the influence of relevant people, it was found that both traditional and teenage student pilots considered family members as the most influencing people, whereas nontraditional student pilots considered family members as having less influence—ranked 6th place out of the eight relevant influencing people. With respect to the importance of institutional features, nontraditional student pilots deemed school geographic proximity as a key factor since they rated school location and distance from home at 4th place and 6th place respectively out of the 14 institutional features, whereas teenage student pilots considered these two factors relatively less important—ranked 9th place and 11th place respectively. On the other hand, teenage student pilots emphasized career placement as relatively more important —ranked 4th place; the other two groups rated career placement relatively less important—in 9th place and 8th place respectively. In terms of the significant results, the differences were identified in the influence of relevant people of school's CFIs and of family members.

Specifically, the findings that traditional and teenage student pilots emphasized the significant influence of family members in the school choice process was found in previous studies. Two examples are Melvin's (2003) survey research that focused on a sample of traditional, full-time students for a university's airway science professional pilot program and Oymak's (2018) study of a cohort of high school students who intended to continue education in

college. These studies found that family members or parents had or would have a major influence over students' decision-making. Chapman (1981) asserted that family members' attitudes toward and advice about an institution usually would impact young students to form expectations about their school life and may affect the students' ultimate decision in attending a particular school. Rowan-Kenyon et al. (2008) found that parents usually rely on school counselors or even hire private counselors for guidance to obtain more comprehensive information regarding higher education, so they could provide extensive support to their children to achieve educational and occupational goals. Indeed, as seen in the findings, teenage student pilots also stressed school career placement as a key factor, which is reasonable since adolescence is commonly acknowledged as a critical stage for individuals determining an initial career and setting up future professional plans (Mann et al., 1989). Overall, such evidence may imply a need for career counseling assistance from flight school recruiters or counselors to both prospective teenage student pilots and their family members.

Additionally, of the findings in this study, one typical discrepancy that school geographic proximity was more critical to nontraditional student pilots' decision-making was found consistent with the results of Kallio's (1993) study, which was based on a sample of adult students' school choices for graduate programs. The ETA (2007) and NCES (n.d.) introduced that nontraditional students typically are employed and have dependent(s). Understandably, these students would like to choose a school based on its proximity to their workplace and home community, so they could flexibly balance school, work, and family. Accordingly, it seems that flight school location and the distance could be advantages if the target market for nontraditional students is in the schools' proximate geographic zones as well as in the local schools or nearby organizations.

When identifying the key choice factors regarding marketing approaches that all three groups deemed most influential on their school selections, it appears that flight schools should focus on personal-based approaches since contact with school's CFIs, contact with staff, and word of mouth were rated as relatively more influential marketing approaches. Particularly, the study participants also included school's CFIs and staff as two key relevant groups who influenced their decision-making. The findings that CFIs and staff play a crucial role in student school choice were supported by Martirano's (2017) study, which focused on students from small colleges. Martirano (2017) stated that favorable interactions between inquiring prospective students and school instructors or staff would positively impact students' decisions in selecting that school, especially when the small institutions are more adaptable offering personalized school counseling services that focus on inquiring prospective students' needs (Martirano, 2017; Vander Schee, 2010).

It should be noted that the study participants also emphasized the influence of relevant people of current trainees on flight school choices. Current trainees who share their schooling and training experiences could be valuable and reliable information sources. It seems that how they perceive and introduce the school could greatly affect potential students' decision-making. Elliott and Healy (2001) proposed that high satisfactory schooling experiences would impact current students to be more apt to refer the school to others. Moreover, Elliott and Healy's (2001) study also found that the most efficient approach for recruiting new students is via word-of-mouth referrals that are promoted by current satisfied students. In accordance with Elliott and Healy's (2001) findings, as well as Douglas et al.'s (2006) recommendations, flight school operators conducting evaluation surveys regularly could be an effective way to gather current trainees' feedback and suggestions for the school to make adjustments to further optimize school

management and education, and accordingly meet current trainees' expectations and enhance their satisfactory school life.

In general, flight school promotion materials and other marketing communication approaches including instructor or staff contacting prospective students can stress the following school choice factors that the three groups of student pilots rated as the main influences among the 42 choice factor survey items: training quality, availability of flying opportunities, training costs, safety records of the programs, reputation of CFIs, school overall reputation, length of time to complete the program, scheduling flexibility, training capacity, and administration integrity. Among those identified main factors for vocational flight schools, according to Hoyt and Brown's (2003) review of 22 school choice studies, it was found that training or teaching quality, education costs, reputation of instructors, and school overall reputation were also recognized as the generalized main choice factors for many other higher education fields. Yet, given the distinctiveness of pilot education, especially in the initial private pilot training stage, classes typically require individualized and practical instructions in an aircraft during flight. For quality training, the AOPA (2010) proposed that it could be enhanced through the following five broader focuses: "instructor support, instructor effectiveness, organized lessons, test preparation, and additional resources" (p. 19).

Lastly, based on the evidence, the study participants in general emphasized the availability of flying opportunities, training costs, length of time to complete the program, scheduling flexibility, and training capacity. It is worth noting that prospective student pilots expect schools to offer efficient training and aid them in obtaining pilot certificates within the estimated timeframe. This implication is supported by Lee and Topper's (2006) research that students who choose vocational education expect efficient training programs through which they

would be able to quickly comprehend working skills. Accordingly, flight schools' marketing and recruitment procedures, based on Scott and Conrad's (1992) study, are recommended to highlight school availability of time-shortened or intensive courses, as intensive courses' typically efficient and convenient features are favorable for students. Other than that, intensive course features are found to be apt for experiential learning (Lasker et al., 1975 as cited in Daniel, 2000) and computational-skill-related learning (Daniel, 2000). For students' optimal learning via time-shortened or intensive courses, Daniel (2000) proposed intensive course development that focuses on learning goals, well-designed class activities, and various teaching strategies, as well as routine assessments.

Author Note

The content of this research is solely the author's responsibility and does not necessarily reflect the views of AOPA.

References

Abdolalizadeh, M. (2014). *Influential factors in international students' college choice of a rural, regional university* (Publication No. 3665542) [Doctoral dissertation, Eastern Kentucky University]. ProQuest Dissertations and Theses Global.

Aircraft Owners and Pilots Association. (2010). *The flight training experience: A survey of students, pilots, and instructors.* https://download.aopa.org/epilot/2011/AOPA_Research-The_Flight_Training_Experience.pdf

Aircraft Owners and Pilots Association. (n.d.). *Choosing a flight school.* Retrieved December 2018, from https://www.aopa.org/training-and-safety/learn-to-fly/old-pages/choosing-a-flight-school

Boeing. (2022). *Pilot and technician outlook 2022–2041.* https://www.boeing.com/resources/boeingdotcom/market/assets/downloads/2022-Pilot-Technician-Outlook.pdf

Burns, N., & Grove, S. K. (1993). *The practice of nursing research conduct, critique, and utilization* (2nd ed.). WB Saunders Company.

Chapman, D. W. (1981). A model of student college choice. *Journal of Higher Education*, *52*(5), 490-505. https://doi.org/10.2307/1981837

Dickinson, B. B. (2003). *Marketing and the student decision-making process in selecting a technical institute* (Publication No. 3100581) [Doctoral dissertation, University of South Dakota]. ProQuest Dissertations and Theses Global.

Daniel, E. (2000). A review of time-shortened courses across disciplines. *College Student Journal*, *34*(2), 298.

Douglas, J., Douglas, A., & Barnes, B. (2006). Measuring student satisfaction at a U.K. university. *Quality Assurance in Education*, *14*(3), 251–267. https://doi.org/10.1108/09684880610678568

Elliott, K. M., & Healy, M. A. (2001). Key factors influencing student satisfaction related to recruitment and retention. *Journal of Marketing for Higher Education*, *10*(4), 1-11. https://doi.org/10.1300/J050v10n04_01

Epperson, L. (2012). Bringing the market to students: School choice and vocational education in the twenty-first century. *Notre Dame Law Review*, *87*(5), 1861-1890. https://scholarship.law.nd.edu/ndlr/vol87/iss5/3/

Hemsley-Brown, J., & Oplatka, I. (2016). *Higher education consumer choice.* Palgrave Macmillan Limited. https://doi.org/10.1007/978-1-137-49720-8

Hoyt, J. E., & Brown, A. B. (2003). Identifying college choice factors to successfully market your institution. *College and University*, *78*(4), 3-10.

Hutchens, M. K. (2016). *Nontraditional students and nontraditional enrollment patterns: College choice, multiple life roles, and developmental education* (Publication No. 10308246) [Doctoral dissertation, Vanderbilt University]. ProQuest Dissertations and Theses Global.

Jin, J. (2019). *An examination of student pilot school choice factors for flight schools in California.* (Publication No. 2331977257) [Doctoral dissertation, Alliant International University-San Diego]. ProQuest Dissertations and Theses Global.

Kallio, R. E. (1993). *The college choice decision of graduate students.* (Publication No. 9332097) [Doctoral dissertation, University of Michigan]. ProQuest Dissertations and Theses Global.

Kallio, R. E. (1995). Factors influencing the college choice decisions of graduate students. *Research in Higher Education*, *36*(1), 109-124. https://doi.org/10.1007/BF02207769

Kamer, A. J & Ishitani, T. T. (2021). First-year, nontraditional student retention at four-year institutions: How predictors of attrition vary across time. *Journal of College Student Retention : Research, Theory & Practice, 23*(3), 560–579. https://doi.org/10.1177/1521025119858732

Kotler, P., & Fox, K. F. A. (1995). *Strategic marketing for educational institutions* (2nd ed.). Prentice-Hall.

Lee, J. (2020). Statistics, Descriptive. *International Encyclopedia of Human Geography* (2nd ed.), p. 13-20. https://doi.org/10.1016/B978-0-08-102295-5.10428-7

Lee, J. B., & Topper, A. M. (2006). The future of proprietary post-secondary education. *On the Horizon*, *14*(2), 84-91. http://dx.doi.org/10.1108/10748120610674058

Mahajan, P. T., & Golahit, S. B. (2017). Incorporating 11 P's of service marketing mix and its impact on the development of technical education. *Journal of Entrepreneurship Education*, *20*(2), 1-14. https://files.eric.ed.gov/fulltext/ED586037.pdf

Mann, L., Harmoni, R., & Power, C. (1989). Adolescent decision-making: The development of competence. *Journal of Adolescence*, *12*(3), 265-278. https://doi.org/10.1016/0140-1971(89)90077-8

Maringe, F., & Gibbs, P. (2008). *Marketing higher education.* McGraw-Hill Education.

Martirano, M. (2017). *Impact of various marketing theories and software applications on small colleges.* (Publication No. 10259093) [Doctoral dissertation, Northcentral University]. ProQuest Dissertations and Theses Global.

Melvin, M. A. (2003). *An analysis of college choice factors that influence the decision of students to enroll in the airway science-professional pilot program at Kansas State University.* (Publication No. 3098174) [Doctoral dissertation, The University of Nebraska]. ProQuest Dissertations and Theses Global.

Oymak, C. (2018, January 23). High school students' views on who influences their thinking about education and careers. *National Center for Education Statistics*, https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2018088

Pampaloni, A. M. (2010). The influence of organizational image on college selection: What students seek in institutions of higher education. *Journal of Marketing for Higher Education, 20*(1), 19–48. https://doi.org/10.1080/08841241003788037

Panacek, E. A., & Thompson, C. B. (2007). Sampling methods: Selecting your subjects. *Air Medical Journal, 26*(2), 75-78. https://doi.org/10.1016/j.amj.2007.01.001

Paulsen, M. B. (1990). *College choice: Understanding student enrollment behavior.* The George Washington University. https://files.eric.ed.gov/fulltext/ED333855.pdf

Postsecondary National Policy Institute (2023, March). *Post-traditional students in higher education*. https://pnpi.org/wp-content/uploads/2023/03/PostTraditional_FactSheet_Mar2023.pdf

Rowan-Kenyon, H., Bell, A., & Perna, L. (2008). Contextual influences on parental involvement in college going: Variations by socioeconomic class. *The Journal of Higher Education (Columbus), 79*(5), 564–586. https://doi.org/10.1353/jhe.0.0020

Scott, P. & Conrad, C. (1992). A critique of intensive courses and an agenda for research. *In Higher Education: Handbook of Theory and Research, 8*, 411- 459.

Sheppard, J. S. (2013). *Factors that influence college choice: Decisions of graduate students* (Publication No. 3606494) [Doctoral dissertation, Texas A&M University]. ProQuest Dissertations and Theses Global.

Stolzenberg, E. B., Eagan, M. K., Romo, E., Tamargo, E. J., Aragon, M. C., Luedke, M., & Kang, N. (2019). The American freshman: National norms fall 2018. *The Higher Education Research Institute, UCLA.* https://www.heri.ucla.edu/monographs/TheAmericanFreshman2018.pdf

U.S. Employment and Training Administration. (2007, March). *Adult learners in higher education: Barriers to success and strategies to improve results.* U.S. Department of Labor. https://files.eric.ed.gov/fulltext/ED497801.pdf

U.S. Federal Aviation Administration. (n.d.). *U.S. civil airmen statistics*. U.S. Department of Transportation. Retrieved June 2022, https://www.faa.gov/data_research/aviation_data_statistics/civil_airmen_statistics/

U.S. Federal Aviation Administration. (2020, October 16). *Youth access to American jobs in aviation task force.* [Video]. YouTube. U.S. Department of Transportation. Retrieved from https://www.youtube.com/watch?v=NvQPOBICHdo

U.S. Government Accountability Office. (2011). *Initial pilot training: Better management controls are needed to improve FAA oversight* (GAO-12-117). https://www.gao.gov/assets /590/586130.pdf

U.S. National Center for Education Statistics. (n.d.). *Nontraditional undergraduates/Definitions and data*. U.S. Department of Education. Retrieved June 2022, from https://nces.ed.gov/pubs/web/97578e.asp

Vander Schee, B. (2010). The small college enrollment officer: Relationship marketing at work. *Journal of Marketing for Higher Education, 20*(1), 135–143. https://doi.org/10.1080/08841241003788177

Walton, A. L. (2014). *Factors that influence a high school student's college choice in a rural area in Mississippi.* (Publication No. 3665518) [Doctoral dissertation, Mississippi State University]. ProQuest Dissertations and Theses Global.