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School Choice Factors Influencing Flight School Selection: Among Student Pilots Who Enrolled as Teenagers

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This study examined school choice factors influencing decisions to enroll in vocational flight schools among student pilots enrolled as teenagers. The purpose of identifying these factors is to inform flight school recruiters about possible insights for effectively recruiting teenage students. The study data was based on a 2019 survey. This study included 45 participants who met the following inclusion criteria: intended to become airline pilots, were aged 15–18 at enrollment, and were enrolled in vocational, non-collegiate flight schools for private pilot training in California in 2016-2019. The data were analyzed using descriptive statistics. The key findings regarding training program factors that influenced decisions were: training quality, safety records of the programs, the reputation of certificated flight instructors, availability of flying opportunities, length of time to complete the program, scheduling flexibility. In terms of institutional factors, the participants highlighted training costs, overall school reputation, training capacity, career placement, administration integrity, friendliness of the campus, financial aid availability, and administration effectiveness. Moreover, the participants considered family members, school flight instructors, and school staff as the most important individuals influencing their school selection. With respect to school marketing promotion approaches, the teenage group identified contact with school flight instructors, contact with school staff, campus visits, word of mouth, and school's website as relatively more influential approaches. This study contributes to the current literature on vocational school choice decision-making, specifically for teenage students choosing flight schools. In addition, collegiate aviation programs recruiting young adult students could also benefit from this study's findings since very few studies have been conducted examining students' choice patterns for collegiate aviation institutions.

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Introduction

Air transportation is a major contributor to the U.S. economy, specifically with it supporting 6.5 million jobs across the U.S. as well as 4.2% of the country's gross domestic product (International Air Transport Association, 2019). However, due to the impact of the COVID-19 pandemic, domestic passenger demand may take about four years to return to where it was in 2019; yet at that time, the industry may experience some degree of shortage of pilots (Federal Aviation Administration [FAA], 2021). Boeing's (2020) pilot outlook of 2020 to 2039 also stressed that maintaining a sufficient and competent pilot workforce will remain an issue when aviation activities resume to 2019 levels since a large number of senior pilots are approaching their retirement age in the coming decade. For example, between 2017 and 2026, approximately 42% of active airline pilots from the five largest airlines in the U.S. have retired or are retiring (Becker & Cunningham, 2017). These forecasts suggested that there is a crucial need for developing a sustainable pilot workforce.

Nevertheless, the U.S. Government Accountability Office (GAO, 2014) reported that fewer people had attended flight schools for the pilot programs. Recently, the former Secretary of Transportation, Elaine L. Chao, presented in the 2020's Youth Access to American Jobs in Aviation Task Force meeting that fewer high school students were interested in becoming aviation professionals including professional pilots (FAA, 2020). Given that the majority of aviation activities rely on the availability of pilots, a deficiency in the number of new pilots along with a large percentage of senior pilots approaching their retirement age could be unfavorable to the industry's full recovery and long-term sustainability. Therefore, it is essential to encourage the next generation to enroll in professional pilot training programs.

Mann, Harmoni, and Power (1989) stated that during adolescence, individuals are typically beginning the decision-making process for the initial career, which ultimately can impact their future vocational experience. To effectively attract and recruit the next generation of prospective professional pilots and expand the workforce, understanding the adolescent group of students' school choice patterns for flight schools can be one starting point. As Hemsley-Brown and Oplatka (2016), Paulsen (1990) proposed that, by understanding student's choice patterns of how institutional factors affect students' decisions in enrolling in their schools, the recruiters can obtain the fundamental information and develop or tailor strategies accordingly to enhance marketing and recruiting effectiveness.

Literature Review

Chapman's (1981) school choice theory for higher education proposed that, to effectively market and recruit, it is essential to understand students' needs and wants of their prospective schools. These needs and wants in making their ultimate school choice decisions are affected by both student personal characteristics (e.g., socioeconomic status, high school performance) and

influential external factors (e.g., significant persons, institutional characteristics) (Chapman, 1981). More recently, Hoyt and Brown's (2003) marketing framework for higher education referred to these influential external factors as school choice factors.

There have been four themes of school choice factors recognized in the literature: program characteristics (e.g., teaching quality, the reputation of instructors) (Melvin, 2003; Sheppard, 2013), institutional characteristics (e.g., tuition, location) (Melvin, 2003; Sheppard, 2013), relevant people (e.g., family members, school staff) (Hoyt & Brown, 2003; Meyer, 2019; Rocca, 2013; Walton, 2014), and marketing promotion approaches (e.g., school's website, campus visits) (Melvin, 2003; Meyer, 2019; Rocca, 2013). Hemsley-Brown and Oplatka (2016) proposed a school choice theory that similar to Chapman's (1981) and introduced student characteristics (e.g., age, gender, and socioeconomic status) as the focus in market segmentation. Market segmentation was viewed as a key component in higher education marketing strategies; this tactic makes it easier for school recruiters to tailor strategies in accordance with student market segments' different preferences toward various choice factors (Hemsley-Brown & Oplatka, 2016).

According to Hemsley-Brown and Oplatka (2016), age was demonstrated as a strong distinguishing variable between various factors influencing students' attitudes in selecting their school and their ultimate school choice decisions. Kotler and Fox (1995) also stressed the importance of assessing age to successfully market educational institutions, especially because they proposed that consumers' "wants and capacities" are affected by one's age (p. 217). More specifically, previous research has demonstrated how individuals of different age groups valued different choice factors in influencing their school selection. For instance, nontraditional students typically are older than 24 years of age, are employed, and have family obligations (Employment and Training Administration [ETA], 2007); they rated the availability of a specific major (Hutchens, 2016; Padwal, 2011; Sheppard, 2013) and value of degree (Padwal, 2011; Sheppard, 2013) as the most influential factors. Whereas traditional students are typically between 18 and 21 years of age, are recent high school graduates, and are enrolled as full-time students in their higher education (ETA, 2007); this group rated school academic reputation, graduates get good jobs, and the cost as the key influential factors (Stolzenberg et al., 2019). For high school seniors who intended to continue their education, the National Center for Education Statistics (2012) reported that in 2004, seniors generally considered courses being offered, school academic reputation, and financial aid as important factors in selecting their higher education institutions.

Gaps in the Research

It is important to note that the available literature on factors that influence students' school selection primarily focused on academic colleges and universities. There has been a limited number of studies focusing on vocational, non-collegiate flight schools specifically based upon teenagers' choice experiences and perspectives. In the U.S., this type of flight school accounted for 95% of civilian flight schools providing training (GAO, 2011) and has been playing a crucial role in the pilot training industry. Yet, factors that influence the selection of flight schools, which are the vocational education sector in higher education, have been proposed to differ from the academic education sector in terms of recruitment techniques (Belcher, Frisbee, & Sandford, 2003). To fill the gap in the literature, this study investigated school choice

factors influencing decisions to enroll in vocational, non-collegiate flight schools among student pilots who enrolled as teenagers.

Statement of Purpose and Research Questions

The purpose of this study was to determine which school choice factors most influenced teenage student pilots when enrolling in California non-collegiate flight schools for the private pilot programs (initial training programs). This study was guided by the following research questions:

1. How important are training program characteristics (e.g., the reputation of flight instructors, training quality) for teenage student pilots in their school choice decision-making?
2. How important are institutional characteristics (e.g., training cost, location) for teenage student pilots in their school choice decision-making?
3. How much influence do relevant people (e.g., family members, school staff) have on teenage student pilots' school choice decision-making?
4. How much influence do marketing promotion approaches (e.g., social media, campus visits) have on teenage student pilots' school choice decision-making?

Methodology

Data Source and Study Sample

The data in this study was based on Jin's (2019) online survey, which was approved by Alliant International University's Institutional Review Board. Jin's (2019) survey data collection was conducted between July and October 2019, examining student pilots' choice patterns for non-collegiate flight schools. A total of 201 valid responses from adults aged 18 years and older were included in Jin's (2019) study. At the time of the survey, all participants completed the informed consent form. These participants were diverse in age profiles when they enrolled in their flight schools for the initial training during 2016-2019.

The current study's sample included 45 valid responses, a sub-sample from Jin's (2019) survey dataset, who endorsed that they were aged *18 or younger* at enrollment for their initial training. These participants in the current study are referred to as teenage student pilots. It is important to take into account that there is no minimum age to start training as long as one receives training from a certificated flight instructor (CFI) (FAA, 2013). Based on Jin's (2019) survey research design, the participants in the current study met the following inclusion criteria: intended to become airline pilots, were aged 15–18 at enrollment, and were enrolled in non-collegiate flight schools for (airplane) private pilot training in California between 2016 and 2019.

Regarding participants' demographics, there were more male teenage student pilots (91.1%) than female counterparts (8.9%). Domestic student pilots accounted for 93.3% of the sample, and the remaining 6.7% were international student pilots. Of the participants, 46.7% of them enrolled in non-collegiate Part 61 flight schools, and 53.3% of them enrolled in non-collegiate Part 141 flight schools. With respect to annual household income, 35.6% of the

participants responded to making under $25,000, 17.8% of them responded to making between $25,001-$50,000, both the between $50,001-$75,000 and the between $75,001-$100,000 had responses of 13.3%, and 20% of the participants had the household income higher than $100,000.

Basic Research Design

Some high schools provide private pilot programs (initial pilot training programs) as elective courses, but they mainly focus on the ground knowledge portion of the pilot certification. Non-collegiate flight schools, as of the GAO's 2011 report, accounted for 95% of civilian flight schools offering full-fledged pilot training programs and flexible classes. Hence, high-school-aged students could have the opportunity to engage in requisite flight maneuvers and obtain the private pilot certificate while they are still completing their high school diploma. To best recruit high-school-aged students to non-collegiate flight schools, it is important to identify the determinative choice factors that influenced them to enroll in school pilot training programs at this age. By including a subset of the original sample (age range 15–18) (Jin, 2019), recruiters can strategize the marketing and recruitment approaches by keeping these factors in mind.

Data Collection

The data was collected via an online survey software. As introduced previously, the data collection took place between July and October 2019. The survey was distributed to various pilot community websites. 110 non-collegiate flight schools in the U.S. were contacted to help distribute the survey to prospective participants. The random sampling method was utilized to ensure that each potential participant had an equal chance to be included in the study (Panacek & Thompson, 2007).

Instrumentation and Analysis

To increase the content validity of the survey instrument, following Burns and Grove's (1993) recommendation, it was constructed by adapting previous researchers' studies on school choice factors. In addition, by inviting a panel of experts from related fields (i.e., education major professors, flight school managers, and pilots) to review and revise this study's survey instrument, the reliability was enhanced (Burns & Grove, 1993). The survey included 43 flight school choice items, and these items were divided into four themes. The four themes were (1) training program characteristics, (2) institutional characteristics, (3) relevant people, and (4) marketing promotion approaches. The survey instrument adopted the five-point Likert scale model as it allows the middle (third) point to be represented and interpreted as neutrality (Chyung, Roberts, Swanson, & Hankinson, 2017; Colman, Norris, & Preston, 1997). The participants were invited to rate the level of the importance or influence of each factor on their school selection (1 = not important/no influence/not influential at all, 5 = extremely important/influence/influential). To address each aim of the study, descriptive statistics were utilized.

Findings

Research Question One

How important are training program characteristics for teenage student pilots in their school choice decision-making?

Table 1 displays the results of teenage student pilots' perceived importance of twelve training program characteristics on their school choice decision-making. The average ranking across the twelve program characteristics was 3.74. The ones that were rated above this average included: training quality (*M* = 4.80; *SD* = 0.46), safety records of the programs (*M* = 4.31; *SD* = 0.90), reputation of CFIs (*M* = 4.27; *SD* = 0.69), availability of flying opportunities (*M* = 4.22; *SD* = 0.93), length of time to complete program (*M* = 4.02; *SD* = 1.01), and scheduling flexibility (*M* = 4.00; *SD* = 1.04). This study interpreted these rated above-average-ranking program characteristics as relatively more important than the other six. The six program characteristics that were rated less important included: mechanics on staff (*M* = 3.73; *SD* = 1.18), the types of training aircraft (*M* = 3.67; *SD* = 1.28), availability of various training programs (*M* = 3.44; *SD* = 1.16), flight simulators (*M* = 3.07; *SD* = 1.25), availability of extra tutoring (*M* = 3.02; *SD* = 1.31), and the distance of training aircraft to the runway (*M* = 2.33; *SD* = 1.33).

Table 1
Importance of Training Program Characteristics

	M	SD
(1) Training quality*	4.80	0.46
(2) Safety records of the programs*	4.31	0.90
(3) Reputation of certificated flight instructors*	4.27	0.69
(4) Availability of flying opportunities*	4.22	0.93
(5) Length of time to complete program*	4.02	1.01
(6) Scheduling flexibility (e.g., classes, planes)*	4.00	1.04
(7) Mechanics on staff	3.73	1.18
(8) The types of training aircraft	3.67	1.28
(9) Availability of various training programs	3.44	1.16
(10) Flight simulators	3.07	1.25
(11) Availability of extra tutoring	3.02	1.31
(12) The distance of training aircraft to the runway	2.33	1.33

Note:

- *n* = 45
- Likert scale: 1 = not important at all, 5 = extremely important.
- Mean response to all characteristic = 3.74.
- * indicates that this specific characteristic was ranked above the mean (3.74)

Research Question Two

How important are institutional characteristics for teenage student pilots in their school choice decision-making?

The results of teenage student pilots' perceived importance of fourteen institutional characteristics on their school choice decision-making are provided in Table 2. The institutional characteristics that rated above the average ranking of 3.66 were: training cost (*M* = 4.44; *SD* = 0.87), the overall reputation (*M* = 4.29; *SD* = 0.76), training capacity (*M* = 4.00; *SD* = 1.04), career placement (*M* = 3.96; *SD* = 1.21), administration integrity (*M* = 3.87; *SD* = 1.04), friendliness of the campus (*M* = 3.82; *SD* = 1.01), financial aid availability (*M* = 3.69; *SD* = 1.28), and administration effectiveness (*M* = 3.67; *SD* = 1.04). Since this study interpreted these rated above-average-ranking characteristics as relatively more important, the following six institutional characteristics were found to be rated as less important: location (*M* = 3.64; *SD* = 1.11), campus technology and facilities (*M* = 3.58; *SD* = 0.97), distance from your home (*M* = 3.31; *SD* = 1.26), appeal of the campus (*M* = 3.27; *SD* = 1.27), school social life (*M* = 3.11; *SD* = 1.32), and insurance policy for training (*M* = 2.62; *SD* = 1.32).

Table 2
Importance of Institutional Characteristics

	M	SD
(1) Training cost*	4.44	0.87
(2) The overall reputation*	4.29	0.76
(3) Training capacity (student to training aircraft and flight instructor ratio)*	4.00	1.04
(4) Career placement*	3.96	1.21
(5) Administration integrity*	3.87	1.04
(6) Friendliness of the campus*	3.82	1.01
(7) Financial aid availability*	3.69	1.28
(8) Administration effectiveness*	3.67	1.04
(9) Location	3.64	1.11
(10) Campus technology and facilities	3.58	0.97
(11) Distance from your home	3.31	1.26
(12) Appeal of the campus	3.27	1.27
(13) School social life	3.11	1.32
(14) Insurance policy for training	2.62	1.32

Note:

- Mean response to all characteristic = 3.66
- * indicates that this specific characteristic was ranked above the mean (3.66)

Research Question Three

How much influence do relevant people have on teenage student pilots' school choice decision-making?

The results of teenage student pilots' perceptions of the influence that relevant people had on their school choice decision-making are shown in Table 3. Out of the nine provided options, the participants ranked self (*M* = 4.58; *SD* = 0.78), as having a major influence. Other key influencing people that rated above the average ranking (relatively more influence) of 2.89 were: family members (*M* = 3.69; *SD* = 1.40), school flight instructors (*M* = 3.02; *SD* = 1.44), and school staff (*M* = 3.00; *SD* = 1.45). The participants rated the following five relevant people's influence below the average ranking: current pilot trainees (*M* = 2.71; *SD* = 1.34), graduates (*M*

= 2.53; *SD* = 1.38), friends (*M* = 2.42; *SD* = 1.42), school executive committee (*M* = 2.11; *SD* = 1.25), and school sales personnel (*M* =1.96; *SD* = 1.15). This study interpretated that these five relevant people relatively had less influence on teenage student pilots' school choice process.

Table 3
Influence of Relevant People

	M	SD
(1) Self*	4.58	0.78
(2) Family members*	3.69	1.40
(3) School flight instructors*	3.02	1.44
(4) School staff*	3.00	1.45
(5) Current pilot trainees	2.71	1.34
(6) Graduates/program graduates	2.53	1.38
(7) Friends	2.42	1.42
(8) School executive committee	2.11	1.25
(9) School sales personnel	1.96	1.15

Note

- Mean response to all characteristic = 2.89
- * indicates that this specific characteristic was ranked above the mean (2.89)

Research Question Four

How much influence do marketing promotion approaches have on teenage student pilots' school choice decision-making?

Table 4 presents the results of teenage student pilots' perceived influence of eight marketing promotion approaches on their school choice decision-making. The approaches that rated above the average ranking (relatively more influential) of 2.95 were: contact with school flight instructors (*M* = 3.49; *SD* = 1.10), contact with school staff (*M* = 3.40; *SD* = 1.16) and campus visits (*M* = 3.40; *SD* =1.36) (rated equally influential), word of mouth (*M* = 3.31; *SD* = 1.33), and school's website (*M* = 3.11; *SD* = 1.45). The following three approaches were rated below the average ranking: internet sources (*M* = 2.64; *SD* = 1.35), social media (*M* = 2.60; *SD* = 1.27), and conventional media (*M* = 1.64; *SD* = 1.03). This study interpretated that these three approaches were relatively less influential on teenage student pilots' school choice decisions.

Table 4
Influence of Marketing Promotion Approaches

	M	SD
(1) Contact with school flight instructors*	3.49	1.10
(2) Contact with school staff*	3.40	1.16
(2) Campus visits*	3.40	1.36
(3) Word of mouth*	3.31	1.33
(4) School's website*	3.11	1.45
(5) Internet sources other than school's website and social media	2.64	1.35
(6) Social media	2.60	1.27
(7) Conventional media (e.g., radio, television, and print)	1.64	1.03

Note

- Mean response to all characteristics = 2.95
- * indicates that this specific characteristic was ranked above the mean (2.95)

Discussion and Conclusions

The purpose of this study was to examine which school choice factors influenced teenage student pilots when enrolling in California non-collegiate flight schools for private pilot programs. The discussion is presented based on the four themes: training program characteristics, institutional characteristics, relevant people, and marketing promotion approaches. Following the discussion of the four themes, the generalizability of the findings and limitations are presented.

Training Program Characteristics

It was found that training quality and reputation of CFIs (excluding safety records of the programs as it is not a common factor in other education fields) were rated as the two most important program characteristics. These findings appeared to be general in higher education since the findings were also observed by Hoyt and Brown's (2003) research in which they analyzed 22 studies on higher education school choice. In addition, the finding that both length of time to complete the program and scheduling flexibility rated above the average ranking was aligned with Sheppard's (2013) study. Sheppard (2013) investigated graduate students' choice patterns for their universities; all the study participants (graduate students) had at least one dependent, and a majority were employed. It is possible that with these responsibilities that the graduate students valued length of time to complete the program and scheduling flexibility to balance their education, work, and family responsibilities. Although the current study examined student pilots' choice patterns for flight schools when they enrolled at ages 15–18 years, further research should consider whether both graduate students and this study's sample share similar motives for emphasizing such two program characteristics, due to balancing school, work, and other responsibilities.

Nevertheless, it should be noted that this study focused on the participants who enrolled in flight schools at ages 15–18 years. Typically, individuals at that age in the U.S. are enrolled in secondary schools. It may be due to the balance between their secondary education and their desire to enroll in a flight school. These individuals deemed scheduling flexibility as one of the relatively more important program characteristics in their school selection. In addition to their highlighting of scheduling flexibility, as can be seen, availability of flying opportunities and

length of time to complete the program were also emphasized in the ranking. The emphasis on these three program characteristics may imply that there was a preference for flight schools that provide efficient training and assist students in obtaining pilot certificates within their desired timeline. This may be because some degree programs in aviation or aeronautics allow certain academic credits to students who have a particular level of a pilot certificate (e.g., Embry-Riddle Aeronautical University, n.d.; Utah Valley University, n.d.). Teenage student pilots who intend to obtain a higher education degree in aviation may prefer to obtain a pilot certificate in advance, thus reducing their workload within the college or university.

Moreover, the implication that these teenagers expected flight schools to provide efficient training may suggest schools notice the importance of intensive or time-shortened training courses in assisting students to complete the training and obtain pilot certificates within the estimated timeframe. This implication was supported by Scott and Conrad's (1992) study finding that students who appreciate intensive courses, especially because of such course format's "convenience and efficiency" (p. 443). Particularly, the intensive or time-shortened course structure is suitable for practice-based learning (Lasker et al., 1975 as cited in Daniel, 2000) and computational techniques learning (Daniel, 2000), and fostering a continuous learning atmosphere that motivates students to efficiently comprehend course material (Scott, 1993). Kucsera and Zimmaro (2010) stated that students who choose intensive courses tend to exhibit high levels of motivation. With high motivation, students are more apt to succeed in accomplishing their educational goals (Daniel, 2000). Indeed, this present sub-study (based upon Jin's [2019] survey data) revealed that a high percent (71.1%) of the teenage student pilots rated *passion for flying* as their motivational factor in pursuing an airline pilot career. Overall, Daniel (2000) concluded that successful intensive or time-shortened courses typically include a focus on goal-driven learning, a variety of training strategies, well-planned class activities, and regular assessments.

Institutional Characteristics

As seen in the findings, training cost was rated as the most important institutional characteristic. The importance of cost over students' decisions in selecting a school has been identified in previous research (Andrea, 2010; Dickinson, 2003; Meyer, 2019) and theory (Hemsley-Brown & Oplatka, 2016) and seemed general in higher education. Additionally, the GAO (2014) also emphasized training cost that cost may be one of the main factors causing fewer people to enroll in flight schools. Yet, Dunnett, Moorhouse, Walsh, and Barry (2012) found that regardless of the increasing cost of education, overall school reputation was the most important factor in influencing individuals' selection of an (academic) higher education institution.

Although this present study focused on vocational education, the finding also revealed that teenage student pilots considered overall school reputation (ranked 2nd in Table 2) crucially important. Therefore, flight schools need to stress the overall reputation in their marketing and recruitment procedures. The Aircraft Owners and Pilots Association (AOPA, n.d.a) introduced "flight regulations and safety policies" relevant to a school's reputation and suggested prospective flight students assess these attributes before application (para.13). Nguyen and LeBlanc (2001) stated that a school's overall reputation could be a difficult construct to define

since there are differences in how people perceive a school's reputation. Further research would benefit from understanding students' perceptions of this factor, specifically with flight schools, in addressing the influence it has on students' school choice decision-making.

In addition to the overall school reputation being a factor that was considered to compensate for concerns regarding cost (Dunnett et al., 2012), additional studies recognized that career placement (Haskins 2018) and financial aid availability (Chapman,1981; Eagan, Lozano, Hurtado & Case, 2013; Walton, 2014) were also of similar magnitude. The latter two factors were highlighted in the current study findings as well. According to Jackson (1978), an individual's pursuit of higher education can be viewed as an investment, and the investor (student) is expecting returns; the returns are typically reflected on the enhanced socioeconomic attainments. In alignment with the current study findings and Haskins' (2018), it is logical that a student would consider the education costs and career placement in making their choice of investment. Specifically, the journey to becoming an airline pilot involves different levels of pilot training and different types of pilot jobs. This journey may be complicated for those who are not familiar with the pilot industry. Hence, flight schools may consider providing career counseling services in their recruitment procedures as it may not be clear to some prospective students how the industry is organized.

With respect to financial aid availability (e.g., scholarships, grants, and loans [Eagan et al., 2013]), Chapman (1981) claimed that: "if costs pose an obstacle to college-going, financial aid is supposed to reduce or eliminate the problem" (p. 496). Chapman (1981), Eagan et al. (2013), Walton's (2014) further research affirmed financial aid availability being crucial important affecting students' selection of their colleges or universities. Although the current study focused on vocational, non-collegiate flight schools, it should be noted that there are scholarship opportunities for teenage students from this type of flight school (e.g., AOPA Primary Training Scholarship Program, AOPA High School Flight Training Scholarship Program [AOPA, n.d.b]). Flight school recruiters should notify (potential) students of financial aid information since some students may not be aware of such financial aid sources for vocational, non-collegiate schools.

Training capacity was included in the relatively more important institutional characteristics. The AOPA (n.d.a) also stressed this factor when guiding potential students to choose a flight school. Similar to most other vocational education fields, flight schools provide hands-on, practice-based training that prepares students for their desired careers. Reasonably, teenage student pilots would expect a school with a proper ratio among students, instructors, and training aircraft for obtaining efficient training. Moreover, this study found that the teenage group rated both administration integrity and administration effectiveness above the average ranking. The AOPA (2012) asserted that "flight training is a customer service experience" (p. 31). When inviting customers to provide service experience feedback, they emphasize the service providers' "expertise, honesty, and integrity" as the basis of the evaluation standards (Kretovics, 2011, p. 169). To meet flight students' expectations and satisfaction on these matters, the AOPA (2012) suggested flight schools provide authentic estimated training timelines and budget for obtaining a pilot certificate and accommodate well-structured classes for efficient training.

Relevant People

The participants rated themselves as having a major influence on their school choice decision-making, followed by the key influencing people of family members, school flight instructors, and school staff. These findings differ from a research brief derived from a longitudinal study in which the top selected individual(s) who influenced high school students' post-secondary education decision-making were their family members; the second most common influential source was the students themselves (Oymak, 2018). Oymak (2018) also found that high school students rarely selected teachers and counselors (school staff) as important sources of influence. The current study investigated a cohort of high-school-aged students' vocational education decisions —flight school choice decisions. This study's key findings revealed that self had a major influence and that family members, instructors, and staff were substantially more influential. These findings revealed that teenage students were the primary decision-makers in their flight school selection and also implied that the study data reliably reflected these teenagers' perceptions and decision-making rather than other sources (e.g., family members).

Nevertheless, the current study identified that family members (ranked 2nd in Table 3) had a strong influence over teenage student pilots' school choice process. This finding was consistent with previous research (Bohman, 2009) and theories (Cabrera & LaNasa, 2000; Chapman, 1981; Hossler, Schmit, & Vesper, 1999; Paulsen, 1990) and may be general in higher education. Family members' opinions usually would form students' expectations toward their prospective schools and thus affect students' decisions in choosing a particular school (Chapman, 1981). Of the family members, the parental influence was repeatedly stressed by many researchers. For instance, according to Cabrera and LaNasa (2000), Hossler et al. (1999), parental influence specifically includes encouraging their children's aspirations in continuing education, motivating their children toward higher educational goals, and providing practical supports (e.g., accompanying their children at campus tours, financially supporting children). To give comprehensive support for their children's post-secondary education, Rowan-Kenyon, Bell, & Perna (2008) found that parents generally depend upon schools for guidance and support, and some parents even hire private counselors for extensive resources. Accordingly, flight school recruiters should make efforts in offering contact and communication with prospective teenage students' parents and other family members.

School flight instructors were ranked the third most influencing people. When taking private pilot training, students have to spend most of their class time one-on-one with the instructor and sit very close in the training aircraft. Understandably, students will expect the flight school to assign an instructor that best reflects their attributes and learning style (AOPA, 2012). Taking these factors into account, these teenage student pilots stressed flight instructors' influence during their school choice process.

Marketing Promotion Approaches

Contact with school flight instructors was found to be the most influential approach. Paulsen (1990) stated that faculty/instructors who can offer professional information regarding the program to inquiring potential students could positively affect students' final school choice decisions. Furthermore, Herren, Cartmell, and Robertson (2011) and Rocca's (2013) research on

student college choice (for agriculture programs) affirmed the effectiveness of contact with faculty/instructors marketing promotion approach. It is well-known that airline pilots are high-stakes professions that involve individualized and hands-on training. Therefore, this specialized training may have influenced the teenage student pilots to rate flight instructors as a key factor in their school choice decision-making (see Table 3 and Table 4). These findings may suggest prospective students' need for mentorship assistance from flight instructors since their school search phase. Flight schools may be necessary to designate certain instructors to be part of school sales personnel, recruiters, and counselors to interact with prospective students.

In addition to the highlighting of contact with school flight instructors, contact with staff was also included in the key influential approaches by the study participants. Martirano's (2017) study revealed that students from small colleges and universities generally recognized the contacts-with-school-personnel (i.e., instructors, staff) marketing promotion approach as an influencer on their school selection. Such a preference is possible because small institutions are relatively more flexible to provide personalized, one-on-one responsiveness to inquiring potential students that focus their interests and needs (Martirano, 2017; Vander Schee, 2010).

Moreover, this study's findings on the campus visits approach being a strong influence aligned with Meyer (2019), Pampaloni (2010), Rocca's (2013) studies which focused on students' choice patterns for colleges and universities. Pampaloni (2010) stated that campus visits are important to students as an opportunity to compare their prospective schools' features and narrow down their school options. Considering the high levels of complexity and responsibility of the pilot career, when choosing a flight school, it is understandable that potential students often desire to communicate with school instructors and staff, visit the campus, and depend upon word of mouth to collect information.

As can be seen, this study participants indeed included the word of mouth approach as an influencer in their school choice process. This finding was supported by previous research on marketing higher education (Martirano, 2017; Sung & Yang, 2008). Additionally, Alves and Raposo's (2007) study finding suggested students' "word of mouth actions as a direct consequence of satisfaction" (p. 6). Annamdevula and Bellamkonda (2016) asserted that maintaining students' satisfactory schooling experience is essential for a school to accumulate its brand image since students are an important source of word-of-mouth referrals. One way for flight schools to indirectly improve or enhance their word-of-mouth promotion, according to Douglas, Douglas, and Barnes' (2006) proposal, schools can conduct surveys regularly to understand how satisfied students are with school services, facilities, and training quality; based on the feedback, school management strategies and policies can be adjusted.

School's website in this study was ranked as the fourth influential approach. Yet, some other recent studies, such as Mahajan and Golahit's (2017) study of students' choices for a technical university and Meyer's (2019) study of students' choices for two-year colleges, showed that the school's website was rated as the most influential approach. Since this present study aimed to identify effective marketing promotion approaches for teenagers when selecting a flight school, it is relevant for recruiters to be aware of the great amount of time this age group spends utilizing the internet. For instance, out of a sample of 13–17 year olds in the U.S., 95% of them endorsed owning a smartphone or accessing one, 97% of them claimed using one or more

popular social media platforms (e.g., YouTube, Instagram), and 45% of them stated that they spend a vast majority of their daily time online (Anderson & Jiang, 2018). Although the current study participants ranked social media as a less influential approach, Kisiołek, et al. (2021) found that social media and school websites were the two most effective online marketing promotion approaches for higher education. Therefore, to keep up with the trend, it is recommended that flight schools also utilize the social media approach to maximize recruitment efforts.

Generalizability of the findings

It is crucial to examine the school choice factors influencing prospective teenage students' enrollment in pilot programs for not only collegiate aviation institutions, but also for non-collegiate institutions since there is an expected shortage of regional airline pilots (FAA, 2021) and fewer adolescents are interested in becoming aviation professionals (FAA, 2020). Understanding this market segment's school choice patterns can provide insight for effective marketing and recruitment strategies (Hemsley-Brown & Oplatka 2016; Paulsen, 1990). The current study provided school choice information based upon the perceptions of a group of student pilots who enrolled in their vocational, non-collegiate flight schools at ages 15–18 years. The findings of this study may be valuable for vocational flight school administrators, recruiters, and prospective teenage student pilots. In addition, this study's findings and implications may be applicable to collegiate pilot programs recruiting young adult students since very few studies have been conducted examining students' school choice decisions for collegiate aviation institutions.

Limitations and Future Research

Although this study's findings may apply to collegiate aviation institutions, more studies are recommended to confirm this generalization. In addition, the survey was constructed with a limited number of choice factors, so future studies would benefit from incorporating more factors, such as flight training via virtual reality. According to Fussell (2020), this type of training may become a popular training modality in flight schools. Finally, this study only focused on flight schools in California. Therefore, it is suggested future studies include other states or regions for a comprehensive understanding of teenage student pilots' school choice patterns.

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