

**College Choice:
An Investigation of the
Student Selection Process
Using the Multiattribute
Decision-Making Model**

Christine Fogliasso
Stephen V. Horner*
Donald Baack

Pittsburg State University
Kelce College
1701 South Broadway
Pittsburg, Kansas 66762

*Corresponding author: shorner@pittstate.edu

The world of collegiate education has become increasingly dynamic. A variety of changes in the external environment surrounding higher education have taken place. Demographic changes, societal views regarding the value of education, funding concerns, costs, and other factors accentuate the challenges administrators face. The trend can only be expected to continue.

This work considers two primary factors involved in the creation of- and responses to more turbulent educational environmental conditions. The first part of this paper investigates the manner in which students choose educational institutions through the application of the multiattribute approach as noted in decision theory that has often been applied to buyer behaviors in the field of marketing. The second part examines the marketing methods used by various online universities that are designed to influence the decision variables students employ when making college choices.

The Multiattribute Model

Multi-attribute models are used to understand and measure attitudes. The basic model, which was derived the works of Fishbein and Ajzen (1974), consists of three elements: attributes, beliefs, and weights. *Attributes* are thoughts regarding the *characteristics* of a product or service. *Beliefs* measure the *value* of a particular attribute. *Weights* indicate the *relative importance* or priority of each specific attribute (Dean, 2010).

When making purchase decisions, the multiattribute model posits that individual consumers identify a series of factors (attributes) to apply to the choice of a product or service (Clow and Baack, 2012). A simple two factor method would logically include price and quality. The factors would be assessed in two ways: First, each would be assigned a “score” based on its assumed level. For instance, on a 1-5 scale, 1 indicates very low quality or a very high price. A score of 5 suggests the perception of the highest quality or lowest (or most acceptable) price. The second element indicates the importance of the factor itself. In a two factor model either price or quality would be deemed the most important.

The choice of a college, naturally would involve a multitude of factors, ranging from price (tuition), quality (academic reputation), family history (legacy students), chance of acceptance to be enrolled, location, campus life quality (fraternity connections, athletics), and the perception that a degree will lead to the success in the individual’s chosen career path (such as via placement rates). Clearly a multitude of other potential ingredients exists, dependent on the student involved. As an example, one set of prospective students would deem religion as vitally important, thereby placing religious institutions at the top of any list or ranking procedure.

Four potential versions of the multiattribute model apply to the selection process. In the first, *compensatory heuristics*, the decision-maker multiplies the rating (beliefs) each factor receives by its ranking (weight), leading to one total evaluative score, such as:

Factor	College 1 Rating	College 2 Rating	Ranking	# 1 score	# 2 score
Price	3	4	3	9	12
Academic Quality	4	2	4	16	8
Chance of Acceptance	5	5	1	5	5
Campus Life	3	4	2	6	8
Placement rate	4	3	5	20	15
Total				56	48

In this instance, College #1 would be chosen due to the highest overall score.

A second multi-attribute method, *conjunctive heuristics*, establishes a threshold rating. Any choice which falls below the threshold on the most important variable (highest rank) becomes automatically eliminated. Assuming the student considers a score of 2 or below to be unacceptable in the case of Academic Quality, College # 2 would be eliminated due to its rating of quality.

The *phased heuristic* approach combines the conjunctive and compensatory models. In this instance, the first round of evaluation would eliminate any choice that has a rating below a given threshold. Those remaining would then have scores multiplied using the compensatory method to reach a final decision. In this instance, College # 2 is eliminated due to a score of 2 on one factor and the total score reflects the choice of College # 1.

Should the threshold be set at 3, a dilemma occurs. Both colleges have 2 areas in which scores are 3 or below. In that instance, an *iterative analysis* takes place. The student could either eliminate College #2 because it had both a 3 and a 2 rating, or, alternatively, consider which factor is more important. Should the student judge Price as the more relevant, College # 2 would be chosen due to its higher rating on that criterion. If Academic Quality is deemed more important, College # 1 becomes the choice due to the rating of 4 as opposed to 2 for College # 2.

Application to College Choice

The belief that self-study away from campus is a new concept that represents an innovation in education would be completely inaccurate. More than a century ago, college classes via correspondence (the mail system) were available. In the 1960s and especially 1970s, classes have been offered via university-sponsored television stations. The growth of the internet and two-way simultaneous transmissions accentuated this trend, allowing the first off-site classrooms to be taught via video transmissions. Now, the most prominent form of off-campus education is the web-based college course. And, as most college administrators are aware, entire degree programs can now be taken online, with the student not required to attend any courses on an actual college campus.

Attributes

The move from mail to television, to interactive classes, to online programs has greatly increased *convenience* in terms of the pursuit of a college degree. This convenience results from three differing advantages, in the eyes of students. The first is that a class can be taken at any time during the day or night. A student is able to access course materials at his or her convenience. The second, which corresponds to the first, is that the student no longer is tasked with traveling to a college campus. Rather, the course may be taken at home, in a coffee shop, in a library, or with a collective of friends. Third, many online programs offer flexibility in terms of the pace of study. The student works at a speed which best matches his or her learning style and capabilities.

The common denominator in these models and methods are the concepts of *ranking* and *rating* as they relate to this new attribute. The recent, fast-moving trend in higher education has been stark increases in enrollments in online classes. A consequence of this development has been the entry of public, non-profit universities into the online arena, both in terms of course offerings but also entire degree programs. A dramatic shift in the criteria individuals use in the selection process helps explain this major shift in the delivery of higher education.

Ranking

A 2013 study by Baack and Maceli considered the factors involved in the choice of a college. Table 1 indicates the criteria students were asked to consider when making their decisions. As shown, *convenience*, or the ability to study at home or away from campus, was not listed as a motive. In essence, the score given to convenience in terms of ranking would approach zero. In fact, the college studied at the time had as a requirement for admission that new students spend the first year as on campus residents. The only convenience consideration in that case might be how close the campus was to the student's former place of residence, such as or her parent's home (item # 6 in Table 1), location.

Table 1

<u>Rank Decision to Attend</u>	<u>Rank Decision to remain</u>
1. individual attention	1
2. size	2
3. academic reputation	4
4. admissions counselor	15
5. major	5
6. location	6
7. extra-curricular activities	8
8. mother	9
9. financial aid	12
10. sense of community	7
11. father	10
12. career development	11
13. campus beauty	22
14. athletic program	14
15. current college students	3
16. HS guidance counselor	21
17. church affiliation	13
18. friends	18
19. college coach	17
20. high school teacher	20
21. pastor	16
22. high school coach	19

The study concluded that the factors which most influence college choice differed from those which most influenced the decision to remain. In essence, both the rankings and ratings of key attributes or variables changed.

Rating

The three aspects of convenience (time flexibility; location flexibility; pace) would dramatically raise any score given to the variable, as it applies to rating this aspect of choosing a college. Early first-mover advantages for this approach to higher education accrued to various online collegiate programs, such as the University of Phoenix. Traditional programs which at best offered interactive classrooms with remote locations suffered a major disadvantage in terms of any convenience rating that might be possible.

Compensatory Heuristics

The compensatory analysis considers all variables across rankings and ratings. The entry of convenience as a consideration in the choice of a college, would grant a major advantage to College #2, assuming it offered an online degree and College # 1 did

not. Note that even if College # 1 offered *hybrid* classes which included some on-campus attendance with online studies, a revised score of 3 in terms of a rating would still not overcome the advantage held by College # 2, as the new total would be 76, still less than the 78 assigned to College # 2.

Factor	College 1 Rating	College 2 Rating	Ranking	# 1 score	# 2 score
Price	3	4	3	9	12
Academic quality	4	2	4	16	8
Chance of acceptance	5	5	1	5	5
Campus Life	3	4	2	6	8
Placement rate	4	3	5	20	15
<i>Convenience</i>	<i>1</i>	<i>5</i>	<i>6</i>	<i>6</i>	<i>30</i>
	(3)			(18)	
Total				62	78
				(76)	

In simple terms, the rise of convenience as a consideration in the choice of a college affects both ranking and rating scores, and in the case of a compensatory heuristics model, would make the difference in which institution would be chosen by a prospective student.

Conjunctive Heuristics

In the case in which a threshold score is in place for the most important variable, any institution with a score less than the baseline would be eliminated.

Factor	College 1 Rating	College 2 Rating	Ranking	# 1 score	# 2 score
Price	3	4	3	9	12
Academic quality	4	2	4	16	8
Chance of acceptance	5	5	1	5	5
Campus Life	3	4	2	6	8
Placement rate	4	3	5	20	15
<i>Convenience</i>	<i>2</i>	<i>3</i>	<i>6</i>	<i>12</i>	<i>18</i>
Total				68	66

In this instance, assuming that Convenience ranks highest in terms of its value or ranking, a cutoff score of 2 or below would eliminate College #1, regardless of scores assigned to all other variables.

Iterative Heuristic

In the chart illustrating conjunctive heuristics, note that Academic Quality and Convenience received ratings of 2. Assuming a score of 2 on Convenience is deemed unacceptable, College #1 is eliminated, again with a higher total evaluation score.

Phased Heuristic

The final method involves an analysis in which the cutoff score would be used to eliminate any college with a score below that number. Assuming the student believes on a rating of 1 deserves elimination, a new dynamic emerges. In this instance, assuming that College # 2 offered more online classes than College # 1, then College # 1 would be eliminated even with a higher total score. The same would hold true if both schools offered some online courses but College # 1 was less convenient for on-campus classes. The perception of convenience would make the difference.

Analysis

As this rudimentary illustration demonstrates, the entry of convenience into a student's assessment or evaluation of a college's attractiveness might completely change the eventual decision made. Note also, that convenience would essentially eliminate some of the variables presented in Table 1, such as Campus Beauty, Extra-Curricular Activities, Sense of Community, and relationships with Current College Students.

An academic institution seeking to maximize the potential that a student would matriculate to that college or university would logically emphasize any attribute that offered the greatest competitive advantage. Presuming convenience represents such an advantage, the question remains as to whether such programs do indeed emphasize it over other variables.

Marketing Programs

In an article entitled "Who is Studying Online (and Where), Lederman (2018) reviewed enrollments of many of the major programs that offer or emphasize distance learning via web-based courses. Although the article suggests that certain institutions have begun to lose competitive advantage simply by offering convenience, the article presents the relative number of students taking at least one online course over the past five years (Table 2).

Table 2 Relative Number of Online Students

	Number of Students Taking at Least One Online Course	
	2015	2016
University of Phoenix-Arizona	162,003	129,332
Western Governors University	70,504	84,289
Grand Canyon University	54,543	68,542
Liberty University	72,519	67,766
Southern New Hampshire University	56,371	63,973
Walden University	52,799	52,565
University of Maryland-University College	48,677	50,932
American Public University System	52,361	48,623
Excelsior College	43,123	41,658
Ashford University	42,046	41,343
Capella University	34,365	37,569
Kaplan University	45,268	37,431
University of Central Florida	33,034	36,107
Brigham Young University-Idaho	33,551	35,826
Ivy Tech Community College	34,103	34,811
Arizona State University-Tempe	22,809	30,989
University of Florida	28,838	30,720
Florida International University	26,341	30,126
Arizona State University	19,094	24,917
Colorado Technical University-Colorado Springs	900	24,692
Chamberlain College of Nursing-Illinois	22,114	24,284
Lone Star College System	21,811	22,873
University of South Florida-Main Campus	20,993	21,661
Columbia Southern University	20,823	21,442
University of Texas at Arlington	17,541	21,330
Full Sail University	19,939	19,273
Houston Community College	19,111	18,877
Valencia College	17,216	18,058
DeVry University-Illinois	20,458	18,015
California State University-Northridge	16,130	17,384

Methodology

Based on the figures displayed in Table 2, the following organizations were chosen for analysis:

- The University of Phoenix
- Western Governors University
- Grand Canyon University
- Ashford University
- Capella University
- Southern New Hampshire University

Using the most recent updates on YouTube, commercials for each of these institutions were examined. The contents of the ads were analyzed seeking trends and messages. The following results emerged.

University of Phoenix

Three advertisements were assessed. The first, “A University Built for Working Adults,” features the following copy. “When the higher-education system was failing working adults in pursuit of a degree, our founder, John Sperling, changed the system and built University of Phoenix. #WeRise for you.”

<https://www.youtube.com/watch?v=ypochRLV0vI>

The second, “To My Great Grand-daughter,” emphasizes the emotional aspects of a college degree, with the following copy, “We don't just study for ourselves. We sacrifice, struggle, and persevere so the people we love can live a better life, for generations to come.” The commercial depicts a person studying in places other than a traditional college classroom. <https://www.youtube.com/watch?v=nhnz2CMzirM>

The third, “Still I Rise” features the tagline #WeRise for you. The ad also relies on emotions reflected in the poetry of Maya Angelou. The commercial shows an individual studying in an office, alone, at night and then a graduation in a building filled with graduates and a successful alum of the university as the keynote speaker. Note that most online colleges do not offer in-person graduation ceremonies but rather virtual versions and ones that are web based (Best Online Colleges, 2018).

https://www.youtube.com/watch?v=_KKxwmGprs4

Western Governors University

Western Governors University takes advantage of a spokes character, an owl, in many of its advertisements. In "Just Listen to the Bird," the website states, “I don't know. Going back to school just seems impossible. It's too much money, and there's not enough time. Find out how WGU reinvented higher education at www.wgu.edu.” The message includes an emphasis on a student being able to work at his or her own pace and that “online mentor support” is available. https://www.youtube.com/watch?v=q2J_YDyG4Ds.

Another message states, “... an online university feels so impersonal. What if I need help? Find out how WGU's personalized faculty.”

https://www.youtube.com/watch?v=OPIB8XeC_Hg

Grand Canyon University

The copy featured with Grand Canyon's web message is “Since 1949, Grand Canyon University has been a premier private university in Arizona, helping students find their purpose and achieve their potential.” Although an icon appears indicating the University offers online programs, that variable is not emphasized. Rather the phrase “Graduate Faster” is noted and low cost combined with religious training receive attention. <https://www.youtube.com/watch?v=XyqWE93dcgc>

Ashford University

The first commercial featured by Ashford University presents two messages: First, “Technology changes everything” and the ad is entitled “School is Wherever You Are.” <https://www.youtube.com/watch?v=JGvrNj5DTg4>

A second ad entitled “A Week in the Life of an Ashford Student” presents a student who states that “between work and family, I never thought I would have time (to attend college).” The copy then states, “Take a look at this video that details how thousands of working adults and parents are fitting higher education into their schedules. Ashford University offers flexible online degree programs so that you can attend class at your convenience. You'll also have access to 24-hour support and resources to keep you connected, no matter when you decide to study.”

<https://www.youtube.com/watch?v=HWW3f7HLYM>

A third Ashford ad stresses the use of the University's mobile app, featuring the phrase, “In the palm of your hand, right at your fingertips.”

<https://www.youtube.com/watch?v=DevHUDjQrto>

Capella University

“More freedom, more control” is the message presented by Capella University. A program entitled “FlexPath” allows for “self-paced, competency-based education.” The ad continues with the pledge that students can “Build the career-enhancing skills that employers and industry experts seek in a more efficient, personalized way.”

<https://www.youtube.com/watch?v=A4GMc71RGHg>

In a second commercial, filmed in a hospital, Capella offers an online nursing degree with the freedom and flexibility needed.

<https://www.youtube.com/watch?v=c32m0hYEfDk>

Southern New Hampshire University

In an emotional appeal, Southern New Hampshire University targets mothers, military veterans and their families, and states that it is “a university that works for everyone—with the flexibility you need to earn a degree that fits with your schedule, your life, and your dreams.” The ad is entitled, “Stand Up: Set Your Own Course at SNHU.” <https://www.youtube.com/watch?v=sfHYnKMVrfw>

Analysis

Two common elements appear in the majority of these messages. The first is the use of an emotional appeal. The second is the emphasis on the three elements of convenience. Table 3 summarizes these findings.

Table 3

	Emotional Appeal	Time	Location	Pace
The University of Phoenix				
Ad 1				x
Ad 2	x			x
Ad 3	x	x	x	x
Western Governors University				
Ad 1	x		x	x
Ad 2		x	x	x
Grand Canyon University	x			
Ashford University				
Ad 1		x	x	x
Ad 2	x	x	x	x
Ad 3		x	x	x
Capella University				
Ad 1	x	x	x	x
Ad 2	x	x	x	
Southern New Hampshire University	x	x	x	x

These results indicate a reasonably distinct pattern that suggests attention to the emotional aspects of attitudes combined with an emphasis on the three aspects of convenience. It would not be surprising to find the same pattern emerging in advertisements for other institutions.

Implications

This basic analysis presents the case that convenience has emerged as a primary choice factor for many individuals as they choose colleges and universities they wish to attend. The multiattribute model implies that this attribute has likely risen in terms of its ranking and its rating as a choice factor. Not surprisingly, then, marketing professionals utilize tools that rely on emotions combined with a strong emphasis on the three elements of convenience that online programs offer: time when one studies, location where one studies; and an individualized pace of learning. Future research could be designed to test the following two hypotheses:

H 1: The attribute of convenience will be positively correlated with the *rating* a student gives to a college or university that offers online classes or degree programs, in a multiattribute analysis of choice factors.

H 2: The attribute of convenience will be positively correlated with the *ranking* a student gives to a college or university that offers online classes or degree programs, in a multiattribute analysis of choice factors.

Additional insight might be gained through demographics, including age, marital status, whether the individual is employed or not, and whether or not the individual has children. Also, the type of program may influence choice, such as a pre-med student versus a business student.

This brief study has the limitation of a small sample of online universities and their advertisements; however, the ads are used as much as examples as a research finding. In any case, the presence of convenience as a decision variable merits additional investigation by marketing analysts as well as administrators in various academic institutions.

References

Arora, R. (2007). Message framing strategies for new and mature products. *The Journal of Product and Brand Management*, 16(6), 377. Retrieved October 4, 2010, from ABI/INFORM Global. (Document ID: 1373518421).

Baack, D. & Maceli, K. (2013). Attaining and retaining college students: The impact of environmental and social factors, *Papers of the Nebraska Economics and Business Conference*, Vol. 4, no. 2. (future: *Economic Journal: Inquiries and Perspectives*).

Best Online Colleges (2018). <https://www.bestcollegesonline.com/faqs/is-there-a-graduation-ceremony-for-online-students/>

Clow, Kenneth E. and Baack, D. (2012). *Integrated Advertising, Promotion, and Marketing Communications*, 5th ed). Upper Saddle River, NJ: Pearson, pp. 78-79.

Dean, Gregory (2010). Understanding consumer attitudes, in *Marketography*, October 17, <https://marketography.com/tag/multiattribute-model/>

Fishbein, M. & Ajzen, I. (1974) Attitudes towards objects as predictors of single and multiple behavioral criteria, *Psychological Review*, 81 (1) 59-74.

Katz, D. (1937). Attitude measurement as a method in social psychology. [Electronic version]. *Social Forces*, 15(4), 479-482. Retrieved October 3, 2010, from JSTOR: <http://www.jstor.org/stable/2571413>

[Doug Lederman, Who is studying online \(and Where\)](#)

January 5, 2018

<https://www.insidehighered.com/digital-learning/article/2018/01/05/new-us-data-show-continued-growth-college-students-studying>

Novack, J. (2010). *Internal influences – lifestyle and attitude*. Retrieved, August 20, 2018, from <http://www.marketingteacher.com/lesson-store/lesson-internal-influences-lifestyle-attitude.html>

Solomon, M. (2008). *Consumer behavior buying, having, and being* (8th ed.). Upper Saddle River, NJ: Pearson Prentice Hall.