# Using Conjoint Analysis to Understand a Regional MBA Market

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*As universities experience a declining number of applicants for their MBA programs, business schools are pressured to adjust their curriculum. This paper suggests using conjoint analysis to understand the needs of prospective students. The authors segmented the market preferences toward the university's MBA program into three groups – high, medium and low utility. The high utility group preferred the current program, the low group would likely never consider it, but the medium group could be enticed with programmatic changes. The findings suggest that an increase in applications could occur by addressing the needs of the medium group.*

*Keywords: conjoint analysis, MBA recruitment, market segmentation*

## INTRODUCTION

The Master of Business Administration (MBA) degree remains the world's most sought after graduate management degree (GMAC, 2019). However, 49% of U.S. Business Schools reported a reduction in MBA applications in 2019 (GMAC, 2019). This trend of declining MBA applications has been occurring since 2014 (Johnson, 2019). As a result of the decline in MBA applications, several U.S. business schools have chosen to terminate their MBA programs and redirect focus to specialized business graduate degrees (De Novellis, 2019).

MBA programs around the U.S. are facing internal and external factors and are at a crossroads in need of strategic direction. The University of West Georgia (UWG) is a mid-sized public institution. Over the last few years, the business school within the university, the Richards College of Business (RCOB),

has also seen a decline in MBA students that aligns with the national trends. Is this decline a phase, or has the MBA market changed in the 21st century? In this time of declining applicants, the RCOB has determined that it must focus and design its MBA program with the needs of its prospective students in mind.

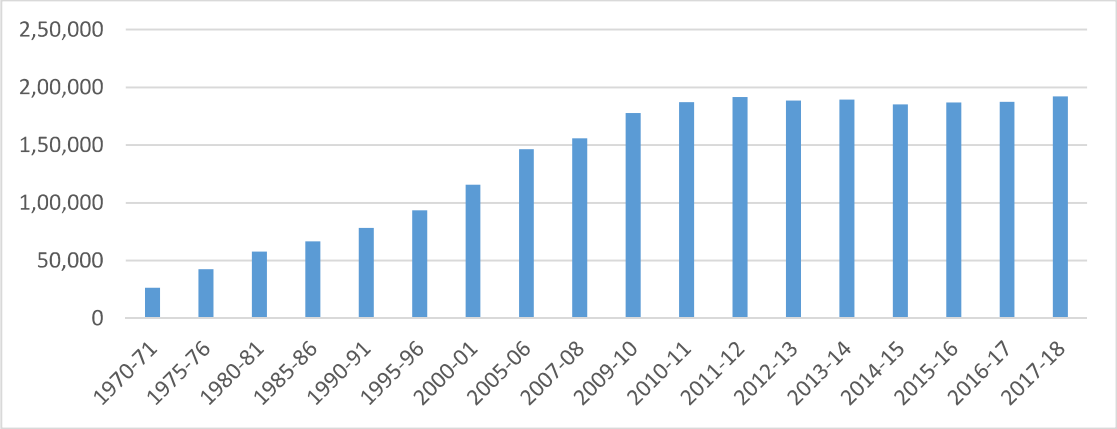
The decision was made to conduct a conjoint market research project to understand UWG's regional MBA market. A conjoint analysis is a tool that has been used extensively in market research for measuring the value that consumers place on features of products and services. This research method combines realistic situations and statistical techniques with the modeling of real market decisions. The purpose of this analysis is to understand RCOB's prospective students and to help guide the strategic direction of the MBA program. This paper will show how a conjoint analysis might be a useful tool for helping guide the direction of an MBA program.

## HISTORY OF MBA PROGRAMS

The MBA program is credited with beginning in the U.S. in 1908 at Harvard University (Herrington, 2010). Harvard's early curriculum consisted of three required courses: Principles of Accounting, Commercial Contracts, and Economic Resources of the United States combined with elective courses such as Banking and Finance and Railway Accounting (Daniel, 1998). In the early 1900s, the MBA curriculum varied considerably across the U.S. Efforts to develop curriculum standards began in 1925 when the AACSB outlined a set of subjects to be covered – accounting, statistics, business law, finance, and marketing (Flesher, 2007). Between 1949 and 1980, AACSB expanded the list to include economics, production or industrial management, international, behavioral management, ethics, and management information systems. As a result, the graduate business curriculum became more consistent across the country during the second half of the 20th century (Daniel, 1998).

The demand for master's degrees in business experienced a shift in the early 1900s away from specialized master's degrees to MBA degrees (Daniel, 1998). Also, the demand for the MBA degree experienced tremendous growth in the U.S during the last half of the 20th century. This demand led the way to the development and opening of approximately 500 MBA programs (Daniel, 1998). By 2006, according to National Center of Education Statistics data, 146,000 master's degrees in business were awarded in the U.S. and by 2018, 192,000 master's degrees in business were awarded. While the overall number of master's degrees in business is holding relatively steady, the number of MBA degrees is declining, and the number of specialty degrees is increasing (GMAC, 2019). Figure 1 displays the number of business master degrees conferred over the last five decades in the U.S.

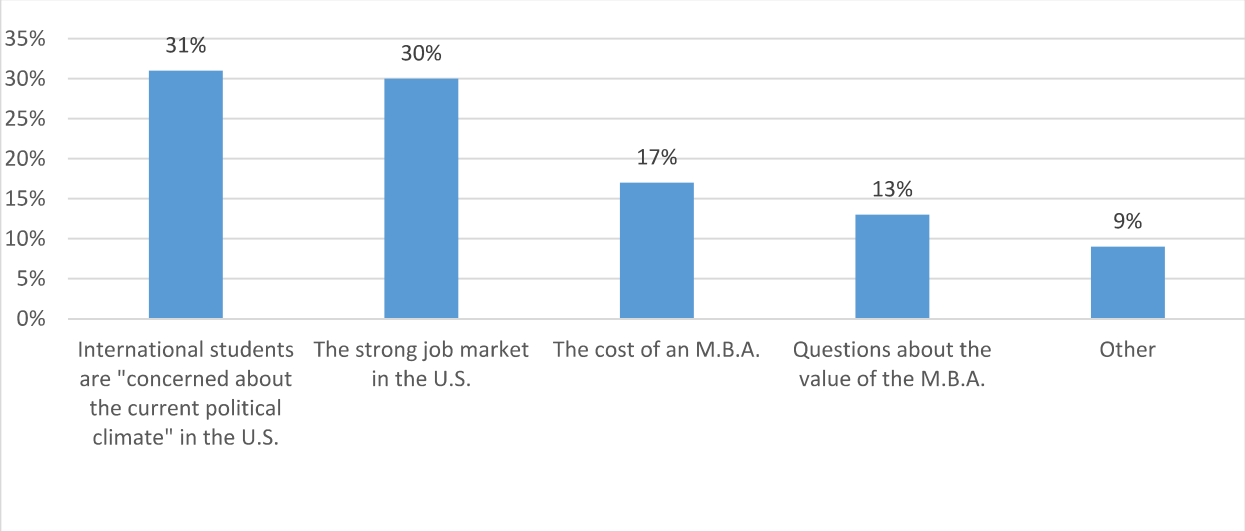
**FIGURE 1**
**BUSINESS MASTER DEGREES CONFERRED IN U.S.**




Source: National Center for Education Statistics, pulled 2/7/2020

In 2018, Kaplan Test Prep surveyed 150 MBA programs, which included universities of varying levels of prestige and competitiveness. The Kaplan study reported that 70% of these U.S. programs are seeing a decline in their MBA applications (Kaplan, 2019). Program administrators were asked why applications were declining. The top reasons given by program directors for the MBA decline are displayed in Figure 2.

**FIGURE 2**
**TOP REASONS FOR DECLINING MBA APPLICANTS**



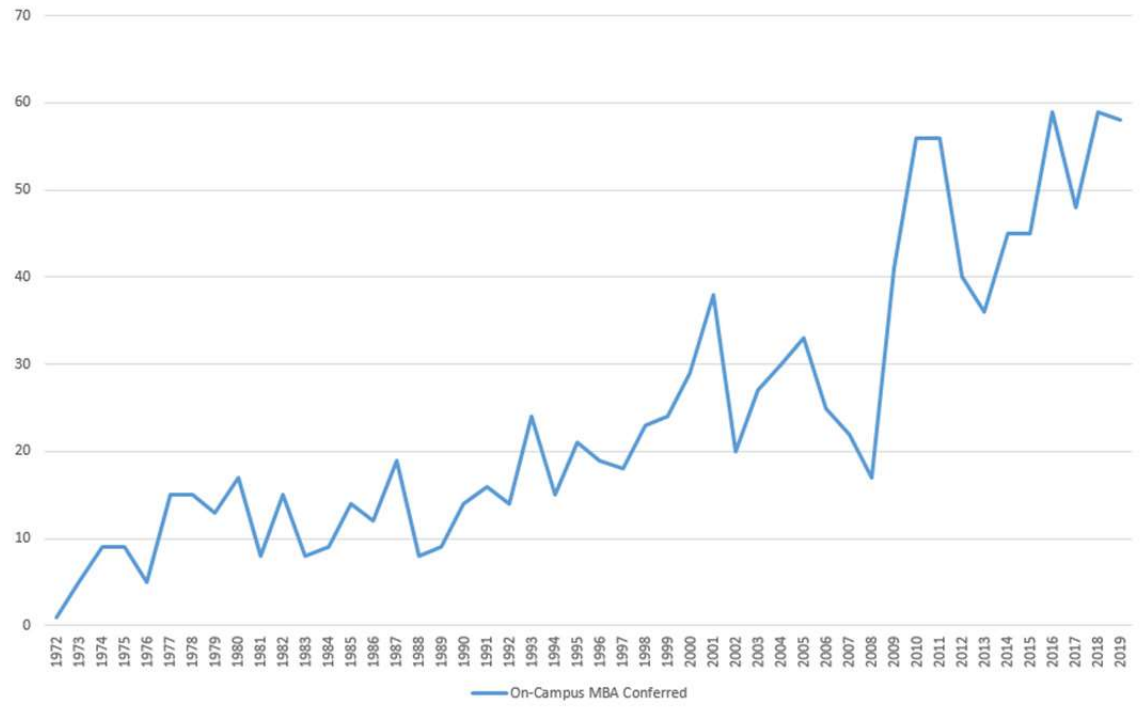

The Kaplan survey is just one of several studies indicating declining MBA applications. Predictions are that approximately 10% to 20% of the MBA programs in the U.S. will likely close in the next few years (Byrne, 2019). This decline represents a challenge for U.S. business schools. However, it also creates an opportunity for business schools to reimage their program.

## BACKGROUND ON THE UNIVERSITY OF WEST GEORGIA'S MBA PROGRAM

The College of Business at the University of West Georgia (UWG) offered its initial Masters in Business Administration (MBA) degree in 1972. The initial program required the completion of 12 courses (six core and six electives). The MBA program was open to all students who qualified, regardless of undergraduate major, though there were prerequisites to entry into the program. Preparatory courses were required for a situation in which a student lacked a background in accounting, economics, quantitative methods, management, marketing, or finance. Required courses for the program included Advanced Managerial Accounting, Marketing Strategy, Quantitative Analysis for Business Decisions, Managerial Economics, Advanced Financial Management and the Seminar in Administrative Policy. Currently, the MBA program at UWG requires the following six courses for all enrolled students: Marketing Strategy; Managerial Accounting; Managerial Economics; Finance; Organizational Theory and Behavior; and Strategic, Ethical and Global Management.

Since its first MBA graduate in 1972, the program has experienced significant growth (see Figure 3 below) rising to an all-time high of graduating MBAs in 2016 and 2018, with 59 graduates each year. This MBA program was originally designed for the working professional. Courses were offered in the evening since most MBA students worked full-time while pursuing their degrees. There was no prescribed sequence in which courses had to be taken except that the Seminar in Administrative Policy had to be taken in the student's last or next-to-last quarter of work. In addition, core courses were required to be taken before any electives in the same area.

**FIGURE 3**
**ON CAMPUS MBA DEGREES CONFERRED AT UWG SINCE 1972**




During the recession of 2008-2010, the program experienced dramatic growth in enrollment and subsequently in graduates. As enrollment trended down after the economy starting growing again, various changes were made in UWG's MBA program to help spur enrollment. First, in 2013, the requirement of nine MBA prerequisites was benchmarked against other institutions that required only four prerequisites.

As a result, UWG reduced the number of prerequisites from nine to five. Second, entrance requirements were changed such that graduates who completed a BBA in the Richards College of Business with an overall GPA of 3.0 or higher became exempt from taking the Graduate Management Admissions Test (GMAT). This change contributed to the current situation in which the majority of UWG's MBA students also earned their undergraduate degree at UWG. In another effort to make the UWG's MBA degree more relevant, three concentrations have been added to the program: Business Intelligence & Cybersecurity, Sales and Consumer Research, and Digital Marketing. Obtaining an MBA degree with a concentration requires the completion of 33-credit hours. Additionally, in 2018, a new combined MPAcc/MBA 45-credit hour program was created to enable interested students to earn both degrees simultaneously.

Despite changes in the program and multiple recruitment efforts, UWG's MBA program has experienced a decline in overall applications and enrollment which is line with national trends. In this paper, we present our findings on how a conjoint analysis might be a useful tool to better understand the market in which UWG is operating.

## RESEARCH METHODOLOGY

### Conjoint Analysis

An effective means to determine the importance of various features or attributes of a service, in this case an MBA program, is to employ a statistical market research technique known as conjoint analysis. Conjoint analysis is a trade-off analysis in which respondents are presented with differing options for a product or service and then asked to select the preferred choice. This method allows researchers to assign a value, or utility, for each measured attribute to the overall utility of the offering (Eggers, Sattler, Teichert, & Völckner, 2018). The part-worth utility reveals the relative weight, or importance that each respondent assigns to an element of the attribute. By combining the part-worth utilities from all respondents for all attributes, the relative importance of each attribute can be derived by dividing the range of part-worth utilities (highest – lowest utility) for each attribute by the sum of all attributes' part-worth utility ranges.

Luce and Tukey (1964) originally introduced conjoint analysis within the field of psychology. Green and Rao (1971) first used conjoint analysis in marketing research to quantify judgmental data within hypothetical settings. Today, practitioners typically use the method to design products and features with optimized features to meet market demand (Kuzmanovic & Martic, 2012). Within the education literature, a handful of studies have been conducted that incorporate conjoint analysis. Soutar and Turner (2002) investigated the determinants that drove university preference among Australian students. They regarded the college market as three distinct segments of incoming students, that of international, mature, and high school seniors, with each considering different factors when choosing a school. Hur and Pak (2007) examined the desired topics for an after-school computer program targeting fourth-through-sixth grade students. Sohn and Ju (2010) use conjoint analysis to assign weights to four components to help colleges in Korea recruit outstanding high school students. In other research, Giersch and Dong (2018) analyzed the attributes that administrators seek when hiring new teachers. They found that principals preferred teachers with more education and more classroom experience, but the study demonstrated no added preference for teachers with more than five years of experience. Munsch (2017) employed conjoint analysis to examine the higher education choice of high school students in New York. Her research found that the average cost of attendance and campus diversity were the two most important choice criteria for students.

### The Study

For this study, a choice-based conjoint, or discrete choice experiment, was used to extract the relative importance of each attribute and the part-worth utility of the corresponding levels. A discrete choice experiment is suitable when participants are asked to choose among varying product alternatives in which the alternatives involve multiple attributes (Hensher & Johnson, 2018). The study's participants are

presented hypothetical product/program offerings on a choice card with various combinations of attributes, such as the choice card presented in Figure 4.

Respondents were presented thirteen choice cards, with each choice card consisting of four different program offerings and a fifth option of "I wouldn't choose any of these." The product attributes along with the corresponding levels included: the MBA program (University of West Georgia, Georgia State University, Kennesaw State University, Mercer University, Columbus State University, Jacksonville State University); type of degree (General MBA, MBA with concentration, Master in business field); timing of classes (daytime, evening, weekend); hours required to complete the program (30 – 54 hours); and the GMAT requirement. Figure 4 illustrates how the options were presented to respondents. The thirteen choice cards were presented to respondents through an online survey distributed by Qualtrics. The conjoint section of the questionnaire was created using the choice-based conjoint software developed by Sawtooth Software (Sawtooth Software, 2006).

**FIGURE 4**
**SAMPLE CHOICE CARD**

If these were your only options, which would you choose?

| | Choice 1 | Choice 2 | Choice 3 | Choice 4 |
|---|---|---|---|---|
| MBA Program | Columbus State University | Georgia State University | Mercer University | University of West Georgia |
| Degree | MBA- with Concentration | MBA – General | MS – specific discipline | MBA – General |
| Program Type | Evening | Full time | Weekend | Evening |
| Hours Required to Complete Program | 36 | 48 | 42 | 54 |
| GMAT Required for Admission | No | Yes | Yes | Yes |
| | NONE: I wouldn't choose any of these. | | | |

**Sample**

The sample consisted of respondents who expressed an interest in pursuing an MBA within the next 2-3 years (likelihood to pursue MBA >50%), and those who lived within a 70-mile radius of the university's campus. Seventy miles was selected as the cut-off distance as this traditionally has been the geographic reach of the program. An online questionnaire was distributed in February 2019 to 1,650 respondents who were part of a survey panel purchased through Qualtrics. Of these, 200 passed the screening criteria. Of the 200, 15 were eliminated due to incomplete surveys, resulting in 185 completed surveys. While the sample was selected randomly from the panel, the respondents had chosen to participate in online surveys and thus were not a random sample of the population. Since the study was

not attempting to measure the size of the market for potential MBA candidates, a convenience sample from an online panel was an appropriate method (Hays, Liu, & Kapteyn, 2015).

**Results**

Table 1 provides a summary of the results from the discrete choice experiment. The second column gives the relative importance of each attribute. The fourth column represents the average part-worth utility for the various alternatives presented for each attribute. As noted previously, respondents were screened on their self-assessed likelihood of seeking a degree (50-59% likely, 60-69%, etc.). The part-worth utilities are weighted based upon the respondent's probability of pursuing an MBA within the next 2-3 years. For example, if a respondent indicated an 80-89% chance of obtaining a degree, his/her utility scores were weighted at 0.85.

The part-worth utilities are scaled to an arbitrary number within each attribute and are centered to zero. Consequently, comparing average utilities between attributes is not meaningful. If one were to compare weekend classes (average utility of 16.2) to that of a general MBA degree (-1.4), one cannot conclude that offering weekend classes is more impactful than offering an MBA with a concentration. However, one can compare differences in values. For example, the difference in utilities between Georgia State's MBA program and West Georgia's program (42.5 – 10.8, or 31.7) is comparable to the preference of a 30-hour program to a 36-hour program (54.5 – 24.2, or 30.3). Therefore, one can conclude that a 30-hour West Georgia MBA program (10.8 + 54.5, or 64.3) is comparable to a 36-hour Georgia State program (42.5 + 24.2, or 66.7). This leads to the issue of using average part-worth utility. It can mask variance of preferences among groups of respondents. For example, as presented in Table 2, imagine a sample of only three respondents and their part-worth utilities regarding how classes are offered.

When considering only average utilities, the weekend classes appear to be the preferred choice. However, when looking at the individual respondents, no one's preferred choice is weekend classes – respondent 1 prefers evening classes while respondents 2 and 3 choose the fulltime program. A conjoint simulation allows us to predict market choice by examining individual responses. Referring back to the above scenario in Table 2, rather than simply claiming the preferred option is weekend classes, the conjoint simulation reveals that 67% of the respondents prefer a fulltime program offered during the day and 33% prefer evening classes.

Restating Table 1 using market simulation results rather than average utility gives a better idea of the dynamics of the marketplace. These results are presented in Table 3. The negative utility derived for Jacksonville State University (JSU) of -27.5 only shows its position relative to the other schools – JSU is still the preferred choice of 7.4% of respondents. Note that neither credit hours nor a GMAT requirement are shown in Table 3 due to the ordinal nature of the options. All respondents preferred 30 hours to 36 hours, as all preferred not taking the GMAT (versus taking it).

**TABLE 1**
**SUMMARY OF AVERAGE UTILITY RESULTS FOR SURVEY RESPONDENTS**

| Attribute | Relative importance (%) | Level | Average Utility |
|---|---|---|---|
| MBA Program | 32.0% | Georgia State University | 42.5 |
| | | University of West Georgia | 10.8 |
| | | Mercer University | 0.0 |
| | | Kennesaw State University | -0.1 |
| | | Columbus State University | -25.7 |
| | | Jacksonville State University | -27.5 |
| Timing of Classes | 22.2% | Weekend | 16.2 |
| | | Evening | 11.9 |
| | | Full-time (day classes) | -28.0 |
| Hours Required for Degree | 20.7% | 30 hours | 54.5 |
| | | 36 hours | 24.2 |
| | | 42 hours | -5.8 |
| | | 48 hours | -24.0 |
| | | 54 hours | -48.9 |
| Degree Type | 15.8% | MBA- with concentration | 6.9 |
| | | MBA – general | -1.4 |
| | | MS – business field | -5.5 |
| GMAT Requirement | 9.3% | No GMAT | 23.2 |
| | | Yes GMAT | -23.2 |

**TABLE 2**
**PART-WORTH UTILITY EXAMPLE**

| | Evening | Weekend | Fulltime |
|---|---|---|---|
| Respondent 1 | 41.7 | 22.8 | -64.4 |
| Respondent 2 | -64.8 | 31.1 | 33.7 |
| Respondent 3 | -53.6 | 18.4 | 35.2 |
| Average Utility | -25.6 | 24.1 | 1.5 |

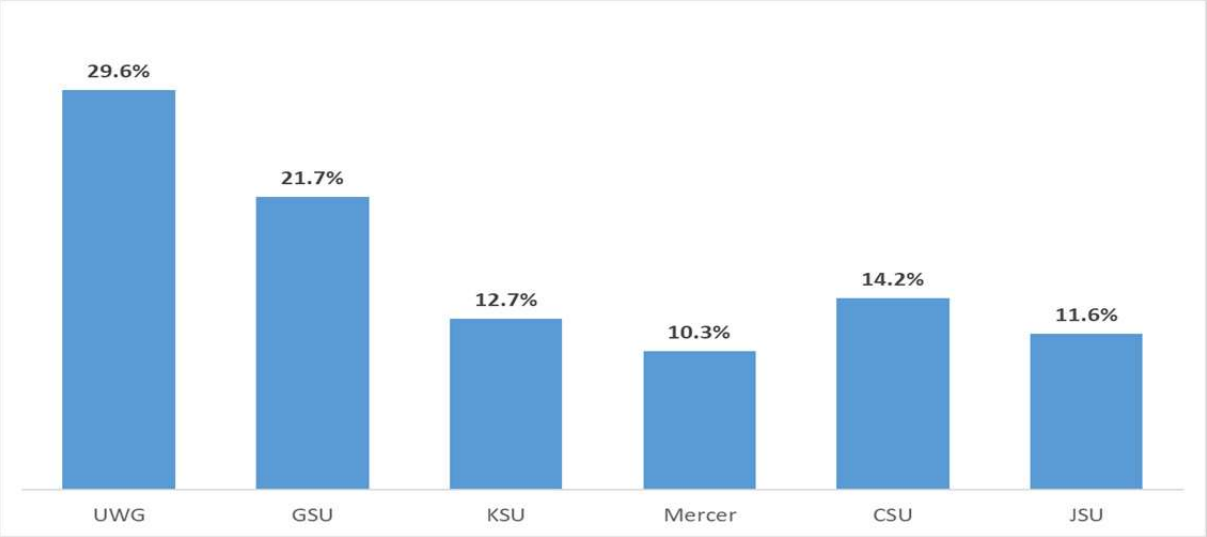
**TABLE 3**
**RELATIVE IMPORTANCE OF ATTRIBUTES**

| Attribute | Relative Importance (%) | Level | Share of Preference (%) |
|---|---|---|---|
| MBA Program | 32.0% | Georgia State University | 40.4 |
| | | University of West Georgia | 15.3 |
| | | Mercer University | 12.7 |
| | | Kennesaw State University | 14.9 |
| | | Columbus State University | 9.3 |
| | | Jacksonville State University | 7.4 |
| Timing of Classes | 22.2% | Weekend | 35.1 |
| | | Evening | 37.8 |
| | | Full-time (day classes) | 27.0 |
| Degree Type | 15.8% | MBA - with concentration | 37.3 |
| | | MBA – general | 33.0 |
| | | MS – business field | 29.7 |

The share of preference is more illustrative than part-worth utilities, though it fails to shed light on the optimal combination of characteristics that would lead to the best MBA offering. While Georgia State University (GSU) alone is the preferred choice of schools among MBA programs considered in this study, when combined with its requirement of 54 credit hours and its other attributes, the GSU MBA program is *not* the preferred option among respondents.

The current configuration of attributes for the universities considered in this study include: Georgia State University (54 hours, offers MBA degree with concentration), University of West Georgia (30 hours, general MBA), Mercer University (36 hours, general MBA), Kennesaw State University (36 hours, general MBA), and Columbus State and Jacksonville State universities (both 30 hours and general MBA). All programs are exclusively or primarily evening programs and all require the GMAT, even though all offer exemptions to taking it. After combining MBA programs attributes, Figure 5 shows the current levels of share of preference for the study's respondents.

**FIGURE 5**
**ESTIMATED SHARE BASED ON CURRENT PROGRAM ATTRIBUTES**




**Segmentation**

Choice-based conjoint analysis is a valuable means to segment a market (DeSarbo, Ramaswamy, & Cohen, 1995). The study's respondents were aggregated into three equal groups based upon preference towards UWG's MBA program – high (28.3 to 195.4 part-worth utility score – average utility of 72.0), medium (-9.9 to 28.2 part-worth utility score, average utility of 8.6), and low (-150.3 to -10.0 part-worth utility, average utility of -47.9). By examining those who are grouped by utility towards the UWG MBA program, the research provides a better understanding of whom to target and for whom the program should be modified. Those with a high part-worth utility towards UWG are the students whom the university should be targeting. The middle group may be attainable to attract with some changes to the program, and the lower group should not be targeted. Table 4 presents the relative importance of each attribute and its part-worth utility.

The high UWG utility group (for brevity, for the remainder of the paper, the groups will simply be referred to as high, medium, and low) consists of the younger prospective MBA candidates, with 3 years since graduation and with 5 years of work experience. It is not uncommon for students at this university to work while pursuing their undergraduate degrees. They are also less likely to have a BBA degree. The medium and low groups appear to be of similar age, both having earned their undergraduate degrees just over 7 years ago, and both having 6 ¼ years of work experience. The medium group is more likely to have a BBA than the low group (45% vs. 38%) and more likely to be female and white than the other groups. Table 5 shows the demographic comparisons among the three groups.

**TABLE 4**
**RELATIVE IMPORTANCE OF ATTRIBUTES AND PART-WORTH UTILITIES BY SEGMENT**

| Attribute | High Utility | Medium Utility | Low Utility |
|---|---|---|---|
| MBA Program | 37.2% | 25.4% | 33.1% |
| University of West Georgia | 72.7 | 9.3 | -47.9 |
| Georgia State University | 38.4 | 34.7 | 53.7 |
| Mercer University | -13.7 | -1.4 | 14.4 |
| Kennesaw State University | -13.0 | -7.5 | 19.2 |
| Columbus State University | -33.6 | -20.0 | -23.3 |
| Jacksonville State University | -50.8 | -15.2 | -16.3 |
| Timing of Classes | 18.7% | 25.8% | 22.3% |
| Weekend | 4.7 | 26.1 | 18.1 |
| Evening | 10.7 | 16.5 | 8.7 |
| Full-time (day classes) | -15.4 | -42.5 | -26.9 |
| Hours Required for Degree | 18.6% | 22.6% | 21.0% |
| 30 hours | 49.5 | 57.0 | 57.0 |
| 36 hours | 23.7 | 23.9 | 25.0 |
| 42 hours | -8.6 | -2.4 | -6.1 |
| 48 hours | -21.0 | -22.8 | -28.0 |
| 54 hours | -43.6 | -55.8 | -47.9 |
| Degree Type | 16.2% | 16.5% | 14.9% |
| MBA - with concentration | 1.2 | 9.7 | 9.8 |
| MBA – general | 4.7 | -10.9 | 1.5 |
| MS – business field | -6.0 | 1.2 | -11.4 |
| GMAT Requirement | 9.2% | 9.8% | 8.8% |
| No GMAT | 23.1 | 24.6 | 22.0 |
| Yes GMAT | -23.1 | -24.6 | -22.0 |

**TABLE 5**
**DEMOGRAPHIC COMPARISON AMONG THREE SEGMENTS**

| | High Utility | Medium Utility | Low Utility |
|---|---|---|---|
| Years since Undergrad | 2.97 | 7.07 | 7.47 |
| Work Experience (in years) | 4.94 | 6.28 | 6.25 |
| GPA | 3.63 | 3.52 | 3.55 |
| Household Income | $70,635 | $75,690 | $78,125 |
| BBA Degree | 33% | 45% | 38% |
| BA Degree | 33% | 19% | 27% |
| BS Degree | 27% | 26% | 28% |
| Other | 6% | 10% | 8% |
| Have taken GMAT | 43% | 31% | 34% |
| Female | 65% | 72% | 66% |
| Currently in School | 64% | 43% | 33% |
| White/Caucasian | 59% | 66% | 59% |
| Black/African American | 32% | 26% | 25% |
| Other (Hispanic/Asian) | 10% | 8% | 14% |

In examining the three segments, the current UWG offering appears to already meet the high group's need for an MBA program. Students prefer an evening program and a general MBA degree. The low group seems unlikely to ever choose UWG for their MBA and, as such, they can be eliminated in regard to this study's purpose. The medium group may be attainable if UWG can adapt its program to their needs. This group prefers a weekend program and an MBA with a concentration. Today, as each of the seven programs are currently configured, UWG has a 26.2% share of preference. If UWG were to add a weekend program and offer the MBA-concentration degree, the share of preference would increase to 46.4%. Additionally, if UWG were to waive the GMAT requirement, the share of preference would grow to 65.4%.

## CONCLUSIONS/IMPLICATIONS

The MBA degree is in decline and many universities are faced with changing or closing their programs. The decreasing enrollments have been attributed to a growing supply of MBA programs, low unemployment, and fewer international students. Business schools around the country are under ever-increasing pressure to revamp their programs to stem the loss of new applicants. The University of West Georgia faces the same issues. There are many MBA programs from which potential students in our market may select. As with the rest of the country, we face a situation where more options exist for fewer applicants.

A conjoint analysis is a means to investigate the types of changes a program may consider. In our study, we chose to examine the attributes of specific MBA programs such as the timing of classes offered during the week, number of hours required for graduation, type of business degree desired, and whether the GMAT should be optional. We chose to include specific MBA programs to better understand our competition for students. The selected attributes were ones that the business school could affect. Note that tuition was not included since altering tuition was beyond the university's control.

Our research found that there is a sizable segment of potential MBA students whose needs we are not addressing. There is a market for a weekend program amongst our target market and degrees with concentrations are desirable. Moreover, we found that our university's program has a relatively low utility factor, given that our sample was drawn from a radius of which we are at the center. This suggests poor branding on our part.

We next segmented the market into three groups based upon their utility level for our MBA program – a high utility segment, a medium segment, and a low one. Unsurprisingly, the high utility group – those showing a strong preference for our MBA program – were satisfied with the current program's characteristics. We discounted the low utility as they had little interest in our program regardless of its attributes. The opportunity for growth comes from the medium utility segment. It is for this segment of potential students that we would consider adapting the program.

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