Business student class scheduling preferences: Utilizing scarce resources to meet their demand

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ABSTRACT

This study addresses business student preferences regarding class scheduling. How much input do students really have in the scheduling process. What percentage of business students prefer early morning classes? What percentage of business students prefer evening classes? Do upper level business students scheduling preferences differ from lower level students? What percentage of business students prefer classes spread over five days? Surveys were administered to business students enrolled in a small public university and a small private college located in the southeast section of the United States. These surveys were given in spring 2022. Approximately 378 surveys were collected over this period. The results of this study would provide valuable input to the scheduling process. Instead of assuming what business students prefer regarding class scheduling, this paper examines scheduling preferences based on student input.
Keywords: preferences, scheduling, times, traditional, hybrid

LITERATURE REVIEW

Each year, course scheduling becomes more complex. Why? Some reasons for the complexity are that enrollments have fluctuated, especially since returning to campus from the pandemic. Academic programs have increased with more course offerings. With the increase in both students and courses offered, classroom space has become more limited (Three best practices, 2020).

More students are living off campus and working, especially since the pandemic made online education more attractive. Shurden, Shurden & DuPont, (2022) conducted a study regarding course styles and concluded that traditional or face-to face classroom instruction was most preferred by students in their institution with the second most preferred style being hybrid followed by online. Spring 2022 students surveyed indicated that 81% of them still prefer either traditional or hybrid classes. With those preferences in mind, this study will further address factors influencing face-to-face course offerings.

If traditional, in person instruction is to thrive, consideration should be given to the changing needs of the student. However, according to a study by the American Association of Collegiate Registrars and Admissions Officers (2016), the factors most used for course scheduling show that student plans for study are fourth in consideration while faculty availability was given the most consideration followed by time block popularity and course scheduling consistency.

In order for higher education institutions to survive and prosper in the 21st century, understanding students' needs is necessary. Therefore, more focus should be placed on what courses are needed as students plan their academic career (Three best practices, 2020).

Some research indicates that learning is enhanced when the courses are spaced out over three days a week rather than one or two. This phenomenon is called the "spacing effect" (Donovan & Radosevich, 1999; Foma, 1983; Gay, 1973; Krug, et. al, 1990). However, Carrington, (2010) conducted a study with Intermediate Accounting students and found the "spacing effect" to be insignificant to their learning. Perhaps third and fourth year students prefer longer times spread over fewer days. Another reason for this conclusion is that the material is more complex in Intermediate Accounting, and more analysis is needed requiring more class time. This author has discovered that shorter time periods are preferable for freshmen and sophomore students who have a shorter attention span. Therefore, in regards to course scheduling, freshmen and sophomore classes are generally put on a three-day a week schedule while upper level classes are put on a two-day a week schedule. Of note is that greater absenteeism results when classes are spaced to three days a week, possibly due to the thought by students that the material in each class is of lower importance. In addition, missing classes due to illness may occur more frequently when they are spaced over more days (Carrington, 2010). A positive note for the spacing effect was that for courses meeting two to three times a week rather than once a week, Henebry (1997) found fewer drops in his Corporate Finance class, and Gallo & Odu (2009) had a similar finding in their Algebra classes.

Wood, Shur, and Rutleged (2007) found a correlation between Friday classes and alcohol consumption on Thursday night. They concluded that students who had Friday classes, especially before 10 am, consumed less alcohol. This author by observation found a higher rate of absenteeism on Fridays because of Thursday night drinking.

Given choices among class times, students select courses that best fit their scheduling preferences. Dills and Hernandez (2008) found that students perform slightly better in courses

offered later in the day and in those offered more days per week. Consequently, "Duke University moved its earliest class time from 8 a.m. to 8:30 a.m. One motivation behind the change was to give "sleep deprived" students a chance to rest more before class." (Dills and Hernandez, 2008 from Carlton, 2004).

In 2019, a national student satisfaction survey was taken with findings indicating that one-third of the students were not satisfied with the availability of courses (Ruffalo, N. L. (2019). If needed courses are offered at the same time, especially if they are co-requisite and prerequisite courses, students must choose between courses and ultimately delay their progression in the discipline. This phenomenon could cause them to discontinue pursuing a degree or cut back to part-time status. Since retention is stressed in higher education, this situation would be an undesirable consequence of inadequate course scheduling (Course scheduling essentials, 2023).

A best practice to survive the 21st century is to centralize the scheduling process. Generally, scheduling is done in each department by deans or department chairs. However, it needs to be simplified. Centralized Time blocking is done in some Universities. If departments would share scheduling data so that classrooms are utilized fully, the results would be:

- A) Higher graduation rates…could double rates if student needs are met
- B) Departmental savings….more classes offered at times students want
- C) Reduced stress level for staff involved (Three best practices, 2020).

This paper addresses some optimal scheduling options, as well as addresses student preferences to scheduling. Data were collected from a small public university and a small private college in the southeastern United States. These surveys were given in spring 2022. Approximately 387 surveys were collected over this period. The survey instrument was void of personal identifiers and was created specifically for this and future research studies. There were three distinct sections: (a) an informed consent, (b) a section to gauge student preferences for course scheduling, and (c) a demographic section. The Review Board (IRB) of each institution approved the survey. It was provided to students during only traditional class periods, not online. The classes to which it was administered were accounting, healthcare management, financial services, and marketing/management. The surveyors assumed that respondents answered each survey question independently and honestly.

METHOD AND FINDINGS

Surveys were administrated at two different colleges located with the Southeastern United States. The surveys were given in business classes at both colleges. The purpose of this study was not to examine the differences between the two colleges, but rather to examine the overall preferences of students toward class scheduling. Table 1 (Appendix) shows the demographics of the total students collected from both colleges. Fifty eight percent of the students were male while 42% of the students were female. Twenty nine percent of the students were seniors; 30 percent were juniors; 28% were sophomores; and only 13% of the students classified themselves as freshmen. The vast majority of the students were business majors with only seven percent of the students classifying themselves as business minors. Approximately four percent of the students majored in areas outside of business.

Students were asked about their scheduling preferences with regard to various days and times. Figure 1 (Appendix) shows the percentage of students who are indifferent to morning or evening classes. Most of the students surveyed were not indifferent to morning or afternoon class. Figure 2 (Appendix) further expands on the issue and shows that 61 percent of the

students prefer morning classes over afternoon classes. Figure 3 (Appendix) indicates that 44 percent of the students prefer afternoon classes. The difference in the percentage in Figures 1-3 (Appendix) is because many of the students who were indifferent to morning or evening may have preferred both morning and evening classes.

Figure 4 (Appendix) shows that approximately 53 percent of the students prefer to have their classes spread over 5 days, while 47 percent do not prefer five-day schedules. Students who work may prefer the schedule that would fit their work hours. For example, a student who works every afternoon may prefer taking classes five mornings a week; whereas a student who works on Tuesday and Thursday may opt for a three-day (MWF) schedule.

As indicated in Figure 5 (Appendix), approximately three-fourths of the students do not prefer 8:00 am classes. This is not surprising since many students may have a difficult time paying attention that early in the morning. However, approximately one-fourth of the students like 8:00 classes. There are some students who want to get classes over with in the morning, so they have more free time in the afternoon. This preference toward morning classes may include athletes and those working in the afternoon. Therefore, this preference toward morning classes maybe because some students are early risers and function at their best in early morning classes or because coaches may often require early morning workouts followed by early morning classes for the athletes because practice and games are in the afternoon.

Student preference toward evening classes was very similar to the responses in Figure 5 (Appendix). Figure 6 (Appendix) shows student preferences toward evening class. Seventy-two percent of the students surveyed did not like evening classes. However, 28% of the students do like evening classes. Once again, this may be explained by a student's work schedule, as well as having to sit in longer classes at the end of the day. Regardless, there is some justification to having early morning classes and evening classes. However, the vast majority of the students do not like either.

DISCUSSION OF THE FINDINGS

Many colleges and universities are strapped with limited resources. For many institutions, student enrollments, course sections offered, and the number of different courses offered are growing, but institutions are faced with restrictions. These restrictions include the number of classrooms available to provide classes, the number of days in the week and the number of available hours each day. Additionally, the administration may be insistent on providing additional courses to the curriculum. Perhaps the data in this study can be used to provide some relief to the dilemma. Let's assume a few restrictions that many schools may have in common.

Regarding student preferences, the findings of this study show that:

- 61 percent of the students prefer morning classes.
- 26 percent of the students like 8:00 a.m. classes.
- 44 percent of the students prefer afternoon classes.
- 53 percent of the students prefer to have their classes spread over five days.

The sum of the percentage of students preferring morning classes and those preferring afternoon classes does not equal 100%. This may be because 44% of students indicated that they are indifferent to morning or afternoon classes.

Many professors prefer their classes three days each week on Monday, Wednesday and Friday (MWF) or two days on Tuesday and Thursday (TR) each week. Using adjunct faculty

can relieve pressure in this area, but it does nothing for the physical plant aspect of the restrictions.

Many colleges and universities are small in physical size with limited classroom availability per department. Resources are limited and expansion comes slowly, yet enrollments may expand unexpectedly.

Most courses are three contact hour courses and therefore limit the time periods to 50 minutes for MWF classes with a 10-minute break between classes. Tuesday and Thursday classes last 75 minutes with a 15-minute break between class periods. Many students at small colleges and universities are athletes, and their practices are held after 3:00 p.m. each day.

These restrictions limit the number of traditional courses that can be offered in a single classroom. Let's assume classes are offered each day, Monday through Friday, between the hours of 8:00 a.m. and 3:00 p.m. This limits the total traditional course offerings per classroom to seven on the MWF schedule as shown in Table 2 (Appendix).

As shown in Table 3 (Appendix), there are five traditional courses possible, in one classroom each week, during the Tuesday and Thursday schedule. As indicated by Tables 2 and 3 (Appendix), the combined total number of traditional courses that may be offered in one classroom, in one week, is 12.

What do these schedules look like for hybrid courses given the same limitations? Shurden, Shurden & DuPont, (2022) defined hybrid courses as "classes meeting 50% of the time in person and in a brick-and-mortar classroom and 50% online, either synchronous or asynchronous, using some type of learning management system such as Blackboard." Considering the Monday, Wednesday and Friday hybrid class schedules, where the in-person class session meets 50 minutes with a 10-minute break between classes, 14 different courses may be provided each week per classroom as shown in Table 4 (Appendix).

For simplicity, Table 4 (Appendix) examines scheduling in one classroom for a two-week period of the semester. In week 1, between 8:00 – 8:50, ACC 101 will meet in-person on Monday and Wednesday and ACC 102 will meet on Friday. In week two ACC 101 will meet in-person on Monday and ACC 102 will meet on Wednesday and Friday.

As required by the hybrid format, online class periods are not shown in Table 4 (Appendix), but meet synchronously or asynchronously each week as preferred by the instructor. As an example, the online portion of the ACC 101 class in week one will meet the equivalent of one in-person session online. The online portion of ACC 102 will meet for the equivalent of two sessions in week one. The online portion of the ACC 101 class in week two will meet online for the equivalent of two in-person sessions. The online portion of ACC 102 will meet for the equivalent of one session during week two.

This schedule example will then be extended so that the offerings for week 1 will apply to the remaining odd numbered weeks during the semester and the offerings for week two will extend to the remaining even numbered weeks during the semester. The final week of each semester is usually devoted to final exams.

Given the 50% in person and 50% online definition of the hybrid class format, where Tuesday and Thursday in-person sessions are 75 minutes long with 15 minutes between classes, 10 different courses may be provided each week per classroom as shown in Table 5 (Appendix). Each in-person session of the hybrid format classes would be offered on either Tuesday or Thursday each week. The online component for each class would be offered each week, either synchronously or asynchronously as preferred by the instructor, for the equivalent of 75 minutes of instruction as required by the hybrid format.

Our total weekly class offerings per classroom increased from 12 to 24, a 100% increase, simply by changing the format of the classes from traditional to hybrid. Using this scheduling methodology, the demands of students found in this study may be satisfied.

This study also identified that 28 percent of the students like evening classes. Although late afternoon and evening class periods are not addressed in the tables (Appendix), the patterns presented may be extended to cover these hours depending on administration needs each semester. Also, administration is free to devote some classrooms to purely traditional courses as needed dependent on classroom availability and individual student demand.

RECOMMENDATIONS FOR FUTURE RESEARCH

It would be exciting to implement the suggested course schedules deliberately assigning the same course to a traditional and hybrid format. Then, a student success comparison study can be done to see which format provides less, equal or increased student success and satisfaction. The online sessions can be offered both synchronously and asynchronously to further expand this study.

The phenomena called the "spacing effect" (Donovan & Radosevich, 1999; Foma, 1983; Gay, 1973; Krug, et. al, 1990) was discussed earlier. By implementing the course schedule discussed above, an expanded study can be conducted to see the effect of this action on the spacing effect for first and second-year students compared with third and fourth-year students to gauge student success, satisfaction and absenteeism.

CONCLUSIONS

As indicated earlier in this paper, understanding students' needs is necessary for higher education institutions to survive and prosper in the 21st century. Ruffalo (2019) indicated that one-third of the students were not satisfied with the availability of courses. Perhaps this was due to limitations faced by the colleges or a misunderstanding of student preferences. In summary, this survey of public and private undergraduate business students found that:

- 61 percent of the students prefer morning classes.
- 44 percent of the students prefer afternoon classes (note the 61 plus 44 is not 100% since some students are indifferent to morning or afternoon).
- 26 percent of the students like 8:00 classes.
- 28 percent of the students like evening classes.

Given this information, scheduling classes as illustrated in the tables (Appendix) provides a solution to meet the findings of this study with respect to student scheduling preferences and overcome limitations faced by many colleges and universities. Readers are encouraged to adapt our suggestions to fit their individual needs.

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APPENDIX

Table I
DEMOGRAPHICS

Description	Gender	Classification	Business
Male	58%		
Female	42%		
Freshmen		13%	
Sophomore		28%	
Junior		30%	
Senior		29%	
Major			89%
Minor			7%
Other			4%

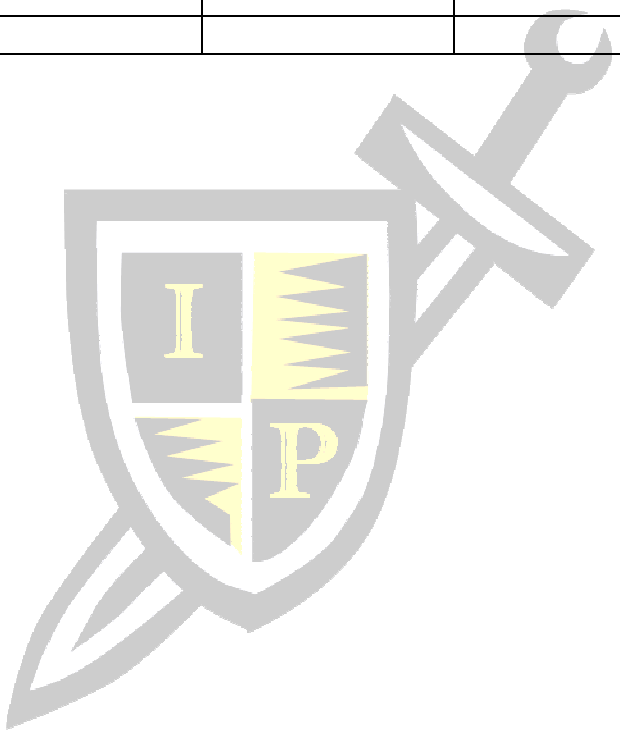

Figure 1

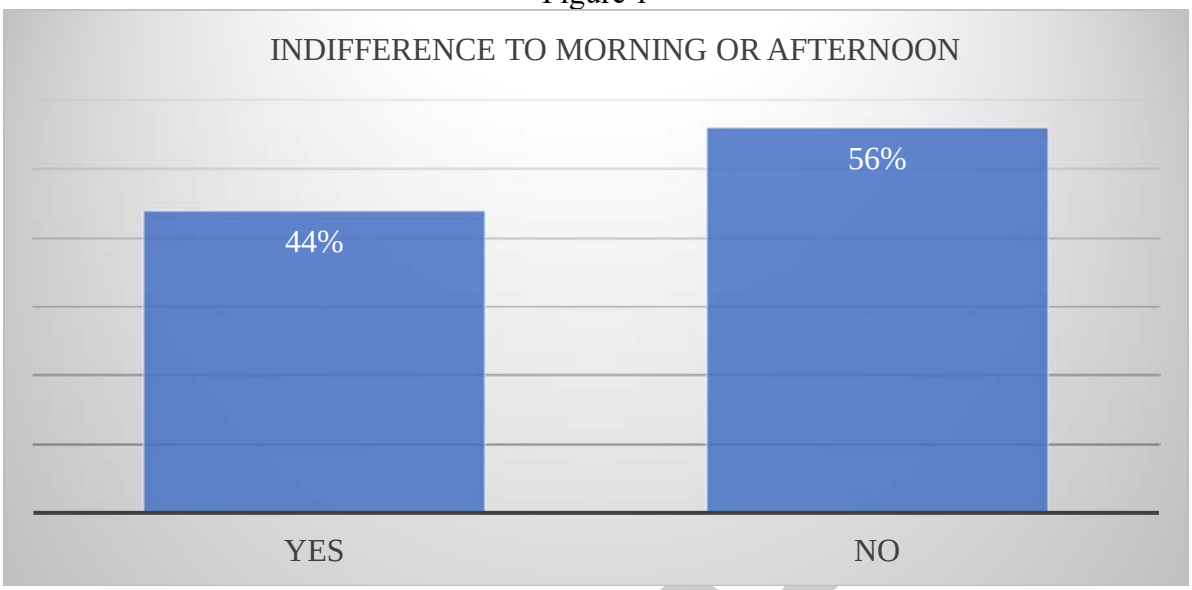

Figure 2

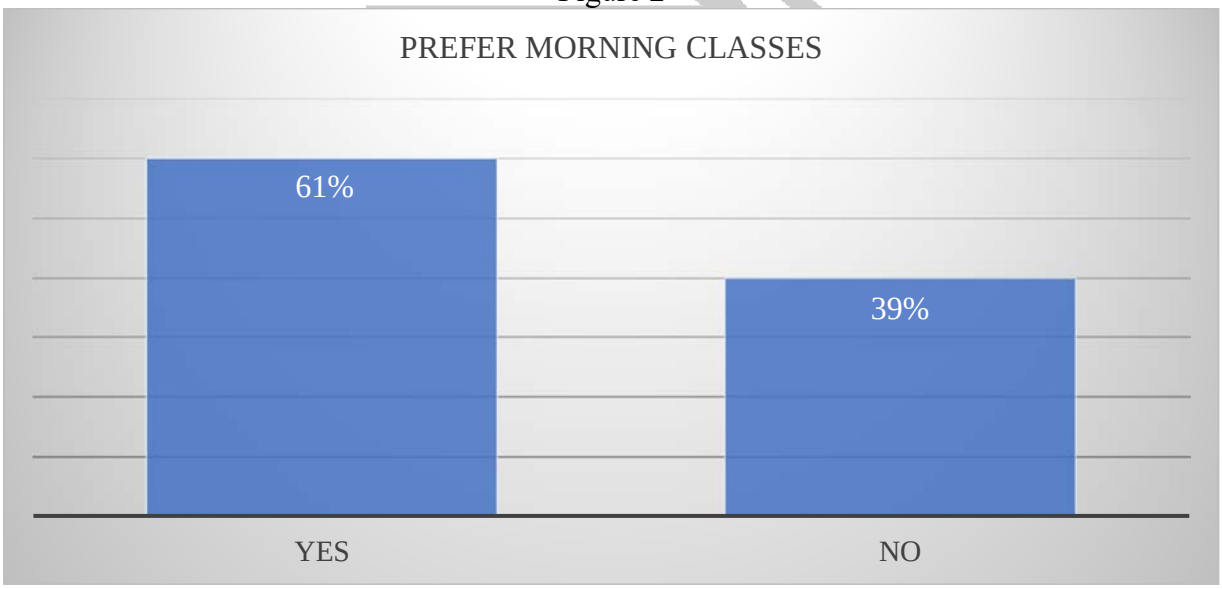

Figure 3

Figure 4

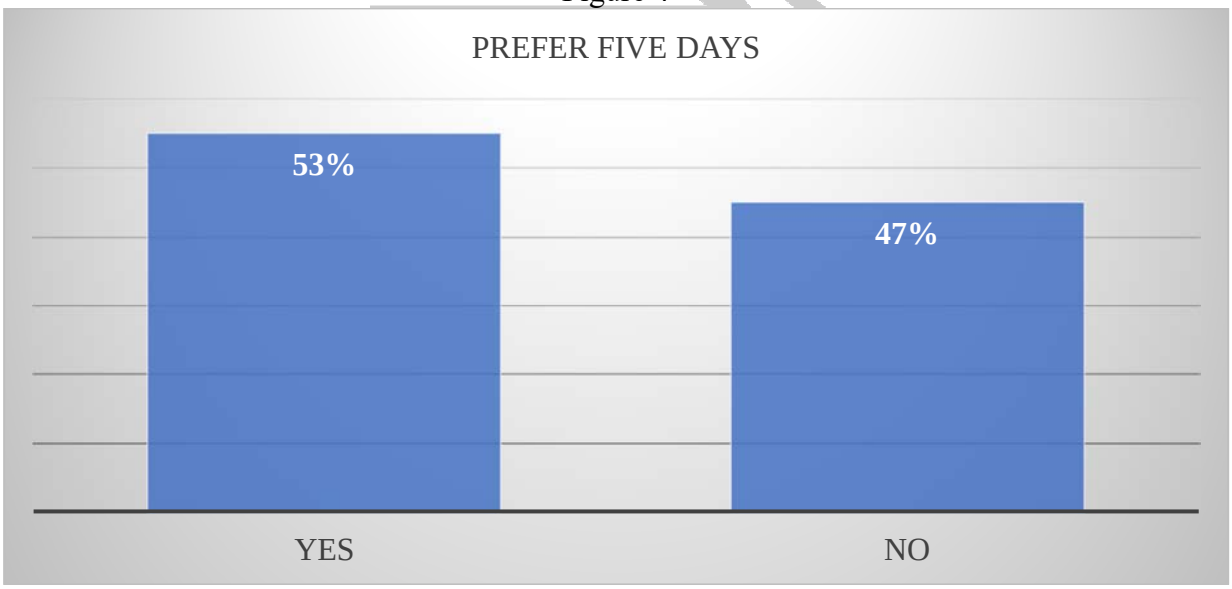

Figure 5

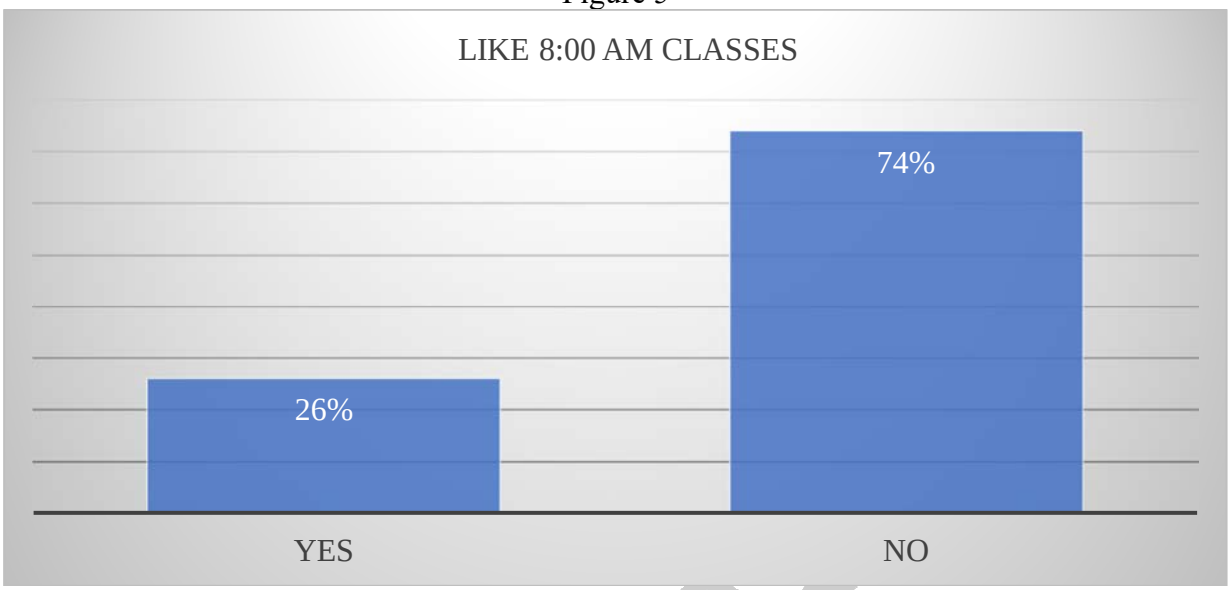

Figure 6

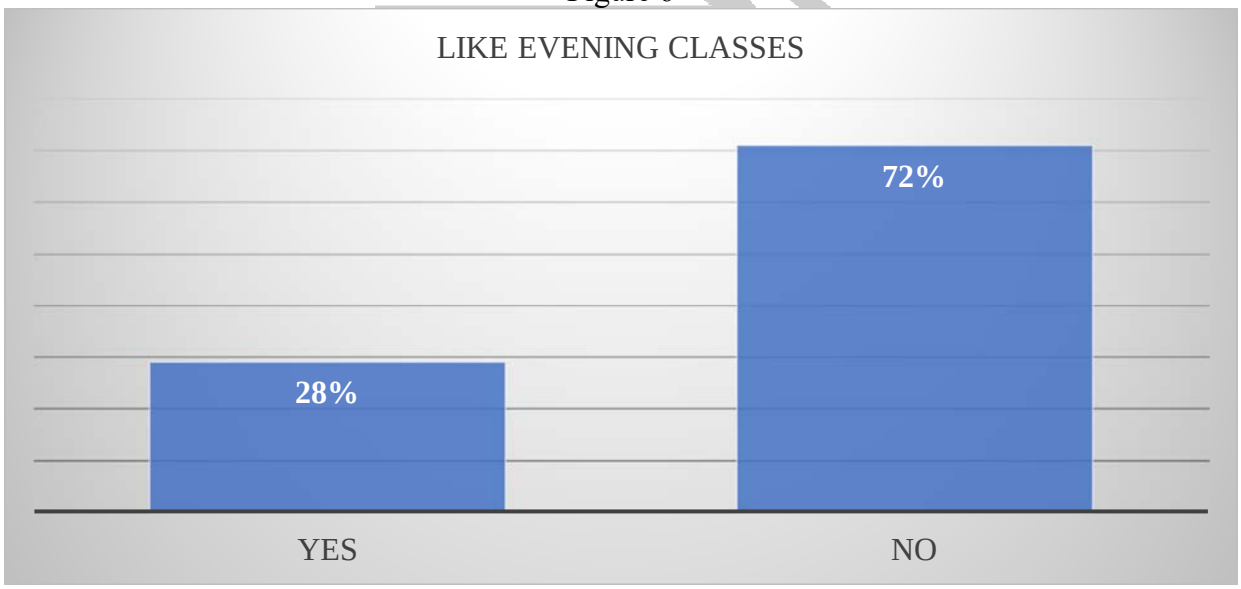

Table 2
TRADITIONAL M W F

Class Times MWF	Days of week M	W	F
8:00 - 8:50	ACC 201	ACC 201	ACC 201
9:00 - 9:50	ACC 202	ACC 202	ACC 202
10:00 - 10:50	MGT 101	MGT 101	MGT 101
11:00 - 11:50	MGT 102	MGT 102	MGT 102
12:00 - 12:50	HCM 101	HCM 101	HCM 101
1:00 - 1:50	HCM 101	HCM 102	HCM 102
2:00 - 2:50	ECO 101	ECO 101	ECO 2101

Table 3
TRADITIONAL T R

Class Times TR	Days of week T	R
8:00 - 9:15	BUS 201	BUS 201
9:30 - 10:45	FIN 201	FIN 201
11:00 - 12:15	ECO 120	ECO 120
12:30 - 1:45	BUS 303	BUS 303
2:00 - 3:15	MKT 415	MKT 415

Table 4
HYBRID M W F

	Class Times MWF	Days of week M	W	F
Week 1	8:00 - 8:50	ACC 101	ACC 101	ACC 102
Week 2	8:00 - 8:50	ACC 101	ACC 102	ACC 102
Week 1	9:00 - 9:50	MGT 101	MGT 101	MGT 102
Week 2	9:00 - 9:50	MGT 101	MGT 102	MGT 102
Week 1	10:00 - 10:50	HCM 101	HCM 101	HCM 102
Week 2	10:00 - 10:50	HCM 101	HCM 102	HCM 102
Week 1	11:00 - 11:50	ECO 101	ECO 101	ECO 102
Week 2	11:00 - 11:50	ECO 101	ECO 102	ECO 102
Week 1	12:00 - 12:50	MKT 101	MKT 101	MKT 102
Week 2	12:00 - 12:50	MKT 101	MKT 102	MKT 102
Week 1	1:00 - 1:50	ACC 303	ACC 303	ACC 304
Week 2	1:00 - 1:50	ACC 303	ACC 304	ACC 304
Week 1	2:00 - 2:50	MGT 303	MGT 303	MGT 304
Week 2	2:00 - 2:50	MGT 303	MGT 304	MGT 304

Table 5
HYBRID T R

Class Times	Days of week	
TR	T	R
8:00 - 9:15	BUS 201	BUS 205
9:30 - 10:45	FIN 201	FIN 315
11:00 - 12:15	ECO 120	ECO 130
12:30 - 1:45	BUS 303	BUS 305
2:00 - 3:15	MKT 415	MKT 420