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## Improving Enrollment in the Construction Management Graduate Program Through Students' Perspectives

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IMPROVING ENROLLMENT IN THE CONSTRUCTION MANAGEMENT GRADUATE  
PROGRAM THROUGH STUDENTS' PERSPECTIVES

Mouloud Messaoudi

A Research Project Plan II

Submitted to the Graduate College of Bowling Green State University

In partial fulfillment of the requirements for the degree of

MASTER OF INDUSTRIAL TECHNOLOGY

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Committee:

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## ABSTRACT

Dr. Alan Atalah, Advisor

Low enrollment and the decrease in graduation and retention rates are challenges facing the growth of the Master's in Technology Management – Construction Management (MTM-CM) program at BGSU. In addition, the competition between the universities to enroll and retain more in-state, out-of-state, and international students is aggressive. There is a need for a reevaluation for the MTM-CM program in order to attract more students in the future. This study is a necessary step to know what the MTM-CM students think about the product delivered to them at BGSU. There was no prior study investigating the satisfaction level of the construction management graduate students in BGSU. The study is based on the famous P marketing factors which include Product, Price, People, Promotion, and Personnel as framework. To achieve the study objectives an on-line survey has submitted to 51 MTM-CM enrolled students from spring 2009 to fall 2014. The response rate was 72%. The majority of MTM-CM students were satisfied with the People marketing factor; 68% viewed the GRE test as a barrier in the admission requirements and suggest to be removed.

## **ACKOWLEDEGEMENTS**

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## CHAPTER I: INTRODUCTION

### Context of the Problem

Higher education in the US is having a hard time during the recession resulting in successive cuts. Forty-three states, including Ohio, cut funding and financial aid for public colleges and universities. The policymakers believe that the colleges can raise money, so the colleges start taking action by raising tuition fees and cut the faculty and staff (Johnson, Oliff, & Williams, 2011). However, the budget tightening and lack of a management plan has negatively impacted enrollment, retention, and graduation rates in graduate school programs. According to the Council of Graduate Schools, from fall 2010 to fall 2011, the number of students who applied to master and doctoral programs decreased by 1.7 percent (Allum, Bell, & Sowell, 2012). The debt carried by the undergrad students has a negative impact on the graduate school enrollment; a study by Malcom and Dowd (2012) showed that the STEM bachelor's degree holders are resistant to any extra debt to continue their graduate studies (Malcom & Dowd, 2012). The percentage of the students who consider cost as an overriding factor for enrollment in a university has jumped from 12% in the past to 16% in the present (Longmire & Company, 2009). Today, the competition between the universities to attract and retain more in-state, out-of-state, and international students is aggressive. The enrollment managers should be aware of their future enrollment plan; they need to prioritize the student satisfaction factor. The university may be chosen based on the size and different physical facilities available for the students. Once the students come into the real academic life, they will tend to give more importance to the services and courses provided by the faculty and staff (Douglas, Douglas, & Barnes, 2006).

Bowling Green State University in Northwest Ohio is facing a big challenge to increase enrollment, retention and graduation rates. According to the Office of Institutional Research at Bowling Green State University, the students enrolled in the fall of 2013 decreased by 1.47% compared to the fall of 2012. The retention rates also have declined from 79.1% to 76.7% between 2004 and 2010. Furthermore, the number of conferred degrees has decreased from 4255 to 4024 (BGSU, 2014).

The College of Technology at Bowling Green State University presents different graduate programs, which include Learning Design, Construction Management, Engineering Technology, Quality Systems, and, lately, Architecture. However, one of the valuable assets for the construction market nationally and internationally is the construction management program. The program degree requires 33 credit hours ( College of Technology, Architecture and Applied Engineering, 2014). The Master of Technology Management in Construction Management (MTM-CM) at BGSU is lacking a promotion and advertising strategy; that is what leads to low enrollment (Atalah & Muchemedzi, 2006) . A statistic that has been published by the Office of Institutional Research at BGSU about the number of granted MTM degrees has shown lower numbers from 2006 to 2011 compared to other Master programs at BGSU (BGSU, 2014). Therefore, the intent of this research was to investigate the level of satisfaction for graduate students in MTM-CM. This research applied the P' marking framework: price, product, personal, place, people, and promotion to measure the factors that have impacted their decision to enroll in the construction management program. The result of this research can help the decision makers to improve the construction management graduate program and services at BGSU.

## **Statement of the Problem**

The graduate program does not have enough research done to investigate the enrollment growth or decline. The challenge facing higher education is to attract more students. However, the majority of the research only discussed the factors driving undergraduate students to enroll in college. MTM-CM at BGSU is one of the graduate programs which tries to meet the needs of the local and international construction markets. Furthermore, the MTM-CM should meet the needs of the students who represent the customers of the faculties and the staffs' services. The problem is that no research studies investigating the graduate students' satisfaction level in the MTM-CM at BGSU have been completed. However, there is aggressive competition from other schools that offer the same program as BGSU; thus, the enrollment managers need to design a marketing strategy based on the students' feedback. The marketing strategy goals are to increase enrollment rates, retention rates, and graduation rates. This study investigated the reasons behind graduate student enrollment and their satisfaction level about the MTM-CM program at BGSU.

## **Objective of Study**

The objective of this study was to investigate the enrollment improvement from students' perspectives; in this regard, the study measured the students' satisfaction level. Thus, some research questions were asked:

1. Which marketing P factors had the most impact on graduate student satisfaction?
2. What are the reasons behind the students' decision to enroll in the construction management graduate programs at Bowling Green State University?
3. What are the most and least satisfying items for graduate students on the university website?

4. What is the students' level of loyalty to Bowling Green State University and The College of Technology?
5. Are any of the admission requirements to enroll in the program viewed as barriers for the current students?

### **Significance of the Study**

Voice of the customer (VOC) or the feedback is a tool used in marketing to know the customers experience about a product. In higher education we can apply the same idea to the services offered from the university to the students (customers). Thus, the negligence of the customer voice can lead to decline in enrollment and decrease in retention rates. As a result, the program's reputation will be at risk. Therefore, investigating the satisfaction level may improve the enrollment in the MTM-CM program at BGSU, and help the enrollment managers to establish a future marketing strategy. The goals of this research were:

- Collecting of the opinions of the construction management graduate students at the MTM-CM program.
- Improve and added value to the MTM-CM program and services.

### **Assumptions/Limitations**

The study was based on a questionnaire for collecting data. In the first step, we obtained the graduate students' emails from the construction management office. In the second step, we sent a survey to the students' emails. The research study assumed that the same students whose emails were collected from their records have responded to the survey. The study was limited to the MTM-CM enrolled students from spring 2009 to fall 2014 at BGSU.

## **CHAPTER II: LITERATURE REVIEW**

### **Linking Student Satisfaction and Retention**

Schreiner (2009) has conducted a study about the correlation between student satisfaction and retention; 27,816 students from 65 four-year institutions have participated in this study. The study indicated that there are different satisfaction indicators among first year, sophomore, and junior students. The researcher argues that the campus climate and the strength of communication between the student, the advisor, and staff are very important to retain the first year student. The study found that 17% are less likely to stay if they did not receive proper service from their advisor; those types of students want to feel that they are welcome. Furthermore, the study findings have shown that the sophomore students with high GPAs are more likely to be retained. The researcher suggested that the universities need to address sophomore students' needs by offering a variety of courses, and advise and guide the students in order to connect them to their future career. The junior students' retention is linked to their satisfaction with the faculty support outside of class. They need a helpful and effective advisor to help them meet their major requirements. This study didn't explore the need of Master students. This study was limited to the undergraduate level. It is clear that the undergraduate student and graduate student satisfaction indicators are common in some areas and different in other areas (Schreine, 2009).

### **Effective Practices to Recruit Graduate Students**

The National Association of Graduate Admissions Professionals and Novel-Levitz conducted a survey in March of 2012. The respondents were 247 different institutions delivering master's degrees in the US. The findings discussed the top 10 effective practices to market and recruit graduate students, which were only used by a few respondents. Web page design and

follow up phone calls or e-mails to make students aware of incomplete applications are among the top effective ways to attract more graduate students (Noel-Levitz & NAGAP, 2012).

Atalah and Muchemedzi (2006) conducted a research study about identifying the problems facing the MTM-CM program at BGSU through the alumni of the undergraduate CM program and their colleagues in construction companies. One hundred and two of the 330 participants responded to the questionnaire. Of the 102, 40% were aware of the MTM-CM program at BGSU; the researchers suggested that the university needs to put more effort into promoting the program by providing more information on the website. It should cover the course descriptions, assistantships, registration, and admission. Furthermore, a promotion strategy should focus on increasing advertising for the program. This can be done by using media outlets and some higher education references. The study argued that some undergraduate courses in the MTM-CM curriculum should be adapted for the non-CM background students. In addition, the researchers proposed more business management courses for the students with CM background. The majority of the study participants suggested an online format for courses to meet the needs of the students who have jobs (Atalah & Muchemedzi, 2006). The study did not mention the role of social media, like Facebook, YouTube, etc., in promoting the MTM-CM program.

### **Alternative Approach to Measure Student's Satisfaction**

Elliott and Shin published a study in 2002 about an alternative approach to measuring student's satisfaction of the quality of services offered on campus. The study argued that the traditional way to measure student satisfaction is inefficient, and it does not help to figure out what is the problem. The researchers criticized the Single-Item Rating Scale to measure the satisfaction. The traditional approach is based on asking students about the overall satisfaction (OS), and the answer choices are from completely dissatisfied to completely satisfied. However,

the study has proposed the Multi-Attribute Rating Scale as an effective method. This method is based on a weighted average of the difference between what students were expecting, and what their actual experience was with each educational item. The study suggested that the overall satisfaction (OS) should be computed with equations and not self-reported. The researchers used the following equation for the overall satisfaction,  $OS = \sum WG$ ,  $G = \text{Actual rate for student satisfaction} - \text{the rate expected by the student}$ ,  $W = \text{the weight for all student viewpoints}$ . The following table is an example of computing the overall satisfaction:

STATEMENTS	WHAT STUDENT EXPECTED		WEIGHT	WHAT STUDENT EXPERIENCED		EXPECTATION RATE- EXPERIENCE RATE	
	Student (A)	Student (B)		Student (A)	Student (B)	Student (A)	Student (B)
Valuable course content	6	7	0.39	4	7	-2	0
Registration process	7	3	0.30	6	6	-1	3
Excellence of instruction major	5	5	0.30	3	5	-2	0

Table 1: The computation of overall satisfaction (OS) (Elliott & Shin, 2002)

The researchers have processed the computation of the overall satisfaction (OS) by three steps.

The first one is calculating the weights (W) of the three items in the statements; valuable course

content  $(W) = \frac{6+7}{(6+7+5)+(7+3+5)} = 0.39$ , registration process  $(W) = \frac{7+3}{(6+7+5)+(7+3+5)} = 0.30$ ,

excellence of instruction major  $(W) = \frac{5+5}{(6+7+5)+(7+3+5)} = 0.30$ . The second step is calculating the

overall satisfaction (OS) by using different weights (W). So the overall satisfaction (OS) for

student (A)  $= (0.39)(-2) + (0.30)(-1) + (0.30)(-2) = -1.69$ . The last step is to identify the group

where the number -1.69 falls. The researchers have mentioned four groups to classify the level of

satisfaction. Group1 (excellent) is when the student overall satisfaction (OS) score is greater than

or equal to 1; Group2 (good) is when the student overall satisfaction (OS) score is between 0 and

1; Group3 (fair) is when the student overall satisfaction (OS) score is between 0 and -1; and

Group 4 (poor) is when the student overall satisfaction (OS) is less than or equal to -1. According to the previous classification, the overall satisfaction for student (A) is poor since  $-1.69 < -1$  (Elliott & Shin, 2002). The research is one of the rare studies which try to establish new approaches to determine student satisfaction (OS). However, still some points need to be explained by the researchers; for example, when the researchers discussed the overall equation, it was not clear for readers where and how they came up with this equation. Also, it is not clear if the researchers collected the data in different points of time to know the student satisfaction rate. It should be stated whether the data was collected before or after student enrollment. However, the study was helpful to limit the most important educational attributes.

### The Enrollment Management Strategies

Black (2008) provided a detailed approach about performing enrollment management; the researcher has described the academic program life cycle in the following illustration:

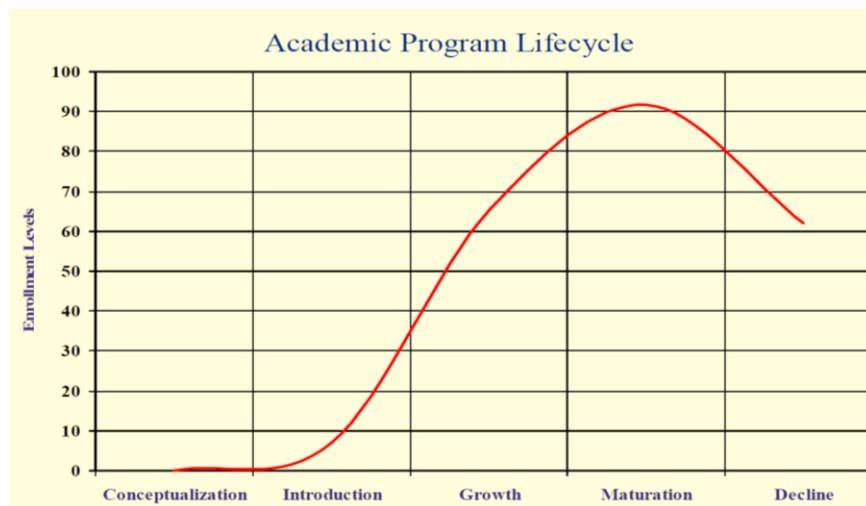


Figure 1: Academic Program Lifecycle (Black, 2008)

The study suggested that the enrollment managers analyze competitors, analyze the market, and analyze demand in the conceptualization phase. In the introduction phase, the enrollment managers should target their market and attract the students. In the growth phase, an analysis of the resources and facilities capacity should be conducted. The enrollment managers need to avoid overload especially if the facilities' size is not adequate. This can lead to unavailability of classes, more time for students to get their degree, and a poor reputation for the program. In addition to the capacity analysis, the forecast for future enrollment is necessary to make sure that the capacity fits the demand and the program growth in the future. The researcher has suggested that the enrollment managers should plan earlier to add new facilities, provide more courses, and hire more faculty members. The study recommends a program renewal to respond to needs of the community, industry, and students in the maturation phase. In the last phase for the academic program life cycle, the enrollment managers need to perform a cost/benefit analysis; this includes the program costs, which are compared to the program enrollment revenue. If the net revenue is not adequate to the expenses, the enrollment managers need to reevaluate the viability of the program and the impact of the future trend (Black, 2008). The study was a good tool to explore different management strategies.

### **Factors Impacting Graduate Student Enrollment**

Stack's (2009) research investigated how the choice factors impact the employed graduate students to enroll in an MBA program. The study research methodology was based on a survey that was sent to 934 enrolled graduate students; only 341 have responded. The researcher classified the enrollment factors into six main marketing frameworks, which include price, product, place, promotion, personal, and people. Those P marketing factors inform the enrollment managers of the most important items needed in any decision to attract an audience.

The study found that Personal performances, including students balance between work and school, could have a strong impact on the students' decision to enroll. The study showed that the website content has a high importance for the student in the process of enrolling. The author stated the essential website items valued by the students are a list of programs and admissions requirements, tuition costs and fees, the university catalog, and faculty profiles. As stated by Atalah and Muchemedzi (2006) in the previous study, the universities should put more effort into promoting the academic program through their websites. Furthermore, Stack's (2009) research emphasized that promotion strategy. The study found that 32.1% of students spent up to three months searching and inquiring before they decided to enroll and 29.4% took from four months to six months before deciding to enroll. Further, around 26.5% of the surveyed population interacted with three additional universities. This information is helpful to analyze the number of competitors, according to the study. The study found parent educational background and generational level have no effect on the students' decision to enroll. The major marketing factors that have high effect on the decision to enroll are the program quality, the personal performance, and the place. (Stack, 2009).

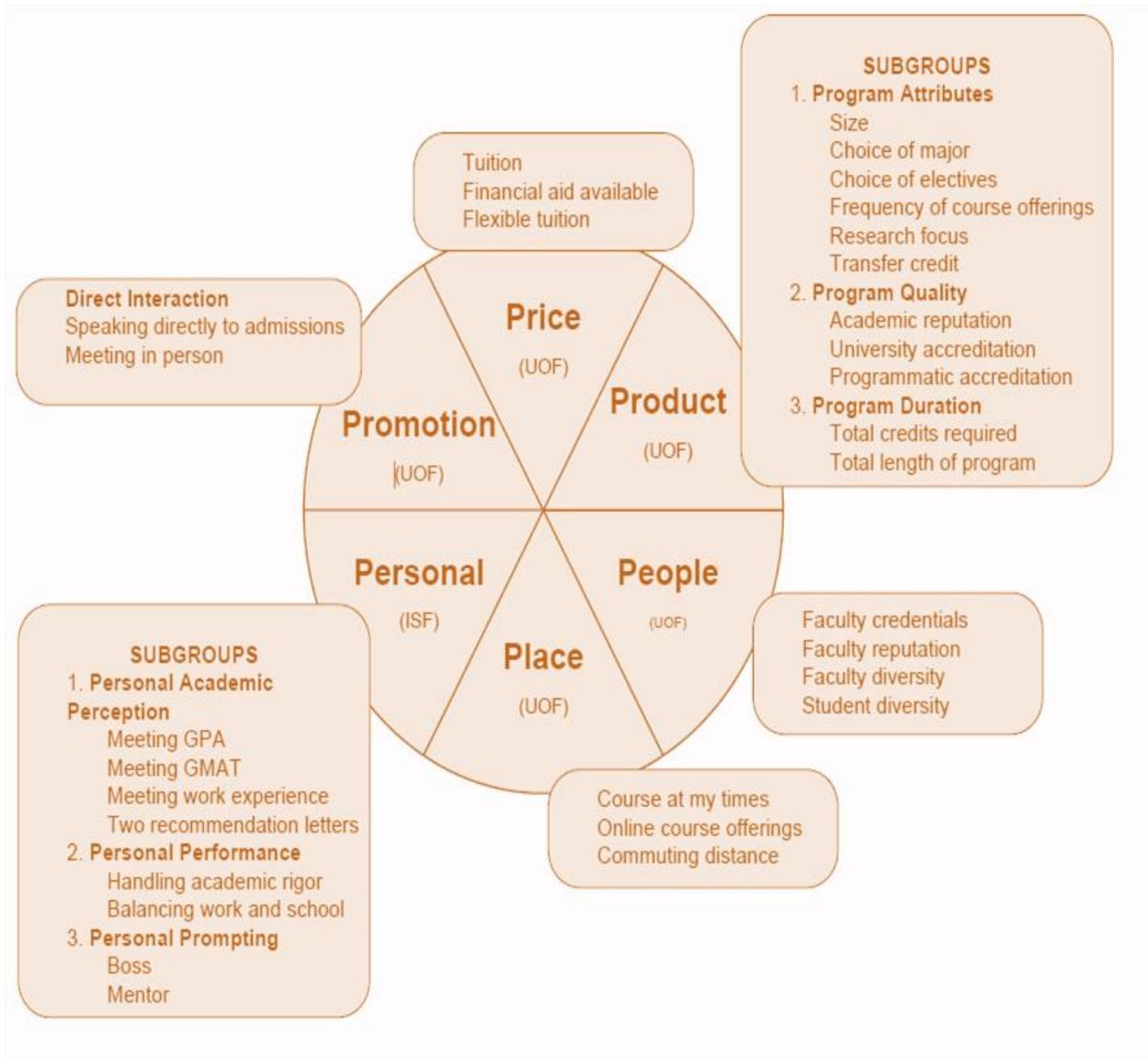


Figure 2: Marketing P's and corresponding items (Stack, 2009)

The study is a good reference, providing ideas on to how applying the P marketing factors in the enrollment management strategy. But, it is limited to just the MBA program offered at the private institutions with application to other public universities and other graduate programs.

## **Conclusion**

As seen in the above studies, there are many enrollment improvement approaches, and they vary by university, major, and education level. However, there are some common ground and similar cases; the degree of frequency is different between the different populations as stated in the studies. This study benefited from the previous literature by applying the P marketing factors to measure the students' satisfaction level. This study used the Likert scale to rate the quality of faculty, staff, facilities, courses, credit hours, and program reputation in the construction management program at BGSU. In addition, the website content promotion ability was investigated; the student satisfaction toward the quantity and quality of information provided on the college website was measured. The study examined social media, and smart device impact on the enrollment. It investigated the frequency of the use of Facebook, or YouTube, and the electronic devices used by students to navigate through the BGSU website. The previous studies did not go deeper into this point. On the other hand, the social media and internet in general have a huge impact on the lives of people these days. In addition, the use of the smart devices such as the iPhone, Tablet, etc., lead the organizations to customize and adapt their websites to those smart devices.

### CHAPTER III: METHODOLOGY

, Before discussing the methodology of the study, the research topic, objectives, and questions need to be restated. The research topic discussed the improvement of enrollment in the MTM-CM program at BGSU through student's perspectives. However, as stated above, knowing the students' real evaluation of the program was the focus for this study. In this regard, the following questions were asked:

1. Which marketing factors had the most impact on graduate student satisfaction?
2. What are the reasons behind the students' decision to enroll in the construction management graduate program at Bowling Green State University?
3. What are the most important items for graduate students on the university website?
4. What are the students' level of loyalty to Bowling Green State University and the College of Technology?
5. Are any of the admission requirements to enroll into the program viewed as barriers for the current students?

The answers to these questions were based on two steps to collect data; the explanation of each step is presented below.

#### **Data Collection and Population**

The data collection was limited to the MTM-CM enrolled students from spring 2009 to fall 2014. The data collection was processed in two steps the first step was collecting the email addresses of the MTM-CM students from the construction management department; the second step was developing an online survey that was sent to the same students to participate. In this

regard the MTM-CM students were asked to respond by using a 5-point Likert scale. The participants were asked about the courses and the services provided by the faculty and the staff of the construction management department at BGSU. They were asked about the facilities at BGSU, the benefits of the courses for construction management students, the level of difficulty of courses, and the usefulness of the orientation session. The participants were questioned about the reasons behind their decision to enroll in the MTM-CM, the impact of the website as a promotion tool, and their feelings about the general climate at BGSU. In addition, we used the 3-points scale to investigate the students' opinions about the grading, the program reputation, the number of credit hours, and the duration of the program. Further, we asked the students about the electronic devices they most frequently use to navigate through the BGSU website. However, before collecting any data, the Human Subject Review Board at Bowling Green State University reviewed and approved the survey. The survey was conducted using Qualtrics. The Office of Institutional Research at BGSU provided Qualtrics to build surveys, send surveys, and analyze responses in a very simple way. It has the option to export data directly to SPSS, CSV, PDF, Word, Excel, or PowerPoint. Furthermore, the software has a secure database, and it is adaptable to the smart phone, iPhone, tablets, etc. The survey link was sent to the participants via e-mail, thus the participants were able to click the survey link, answer the survey, and submit their answers.

### **Data Analysis**

The survey data was processed using integrated statistical tools in Qualtrics. In addition, the data was exported from Qualtrics to Excel. The Excel program helped us to generate different graphs and charts which represent the survey findings.

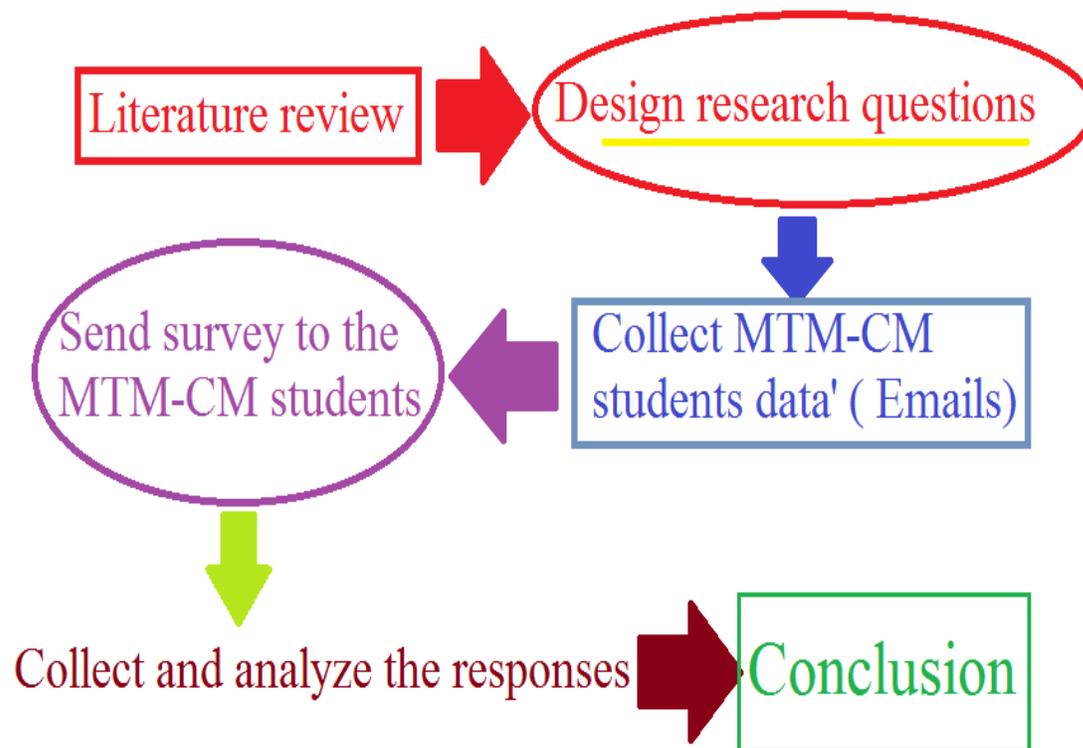


Figure 3: Research design

## CHAPTER IV: FINDINGS

In this chapter, the survey findings are presented. The results include the response rate, and the respondents' residency status. The remaining results show the students' opinions and their satisfaction levels regarding the different services at BGSU. The data are displayed on Tables, graphs and pie charts.

### Responses Rate

The survey was sent to the population of 51 MTM-CM enrolled students from spring 2009 to fall 2014. The survey was launched on June 13, 2014 and was closed on July 14, 2014. During this period, a reminder email was sent to the participants more than one time. Of 51 MTM-CM students, 36 agreed to participate and send their answers. The response rate was 70%. The 36 participants were asked about their undergraduate major. Of the 36 participants, 26 students or 72% have a construction management background (CM); 10 students or 28% have a different background (NOT-CM)

#	Answer	Response	%
1	Construction Management related (CM)	26	72%
2	Not Construction Management related (NOT-CM)	10	28%
Total		36	100%

Table 2: Frequency of responses by undergraduate major

The student participants were 71% international, 21% in-state residents, and 8% out-of-state residents.

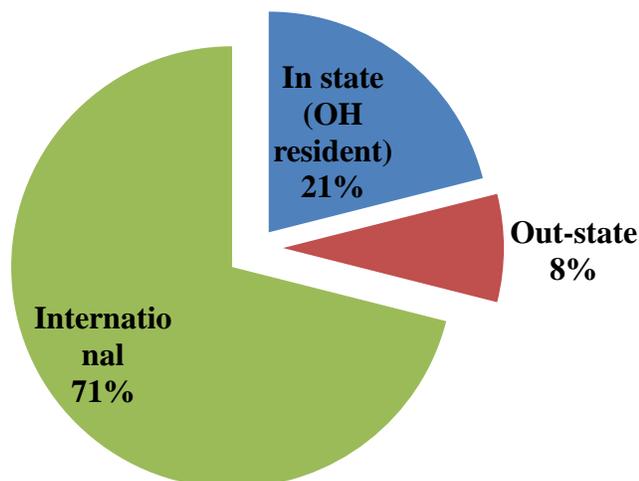


Figure 4: The participants' residency status

The survey questions were designed to discuss the P marketing factors; price, product, place, promotion, personal, and people and which one has impact on the students' satisfaction.

Starting with product or service, in the Q4, students were asked about the courses and services provided by the faculty and staff of the Construction Management Department at BGSU.

The statement of the advisor help was the highest mean (4.25) and the statement of the on-line classes was the lowest mean (3.04) as shown in the table3.

#	Statements	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
7	The on-line classes are good	4	3	7	8	2	24	3.04
10	My advisor help me in processing all documents I need like, the letters to my cultural mission, coordination with international student office, etc...	1	1	1	12	13	28	4.25

Table 3: Level of agreement by respondents

$$*\text{Mean} = (4*1)+(3*2)+(7*3)+(8*4)+(2*5)/24=73/24=3.04$$

Students agree that the services, faculty and courses are helpful. In the following graph, the mean from the lowest to the highest for different statements are presented.

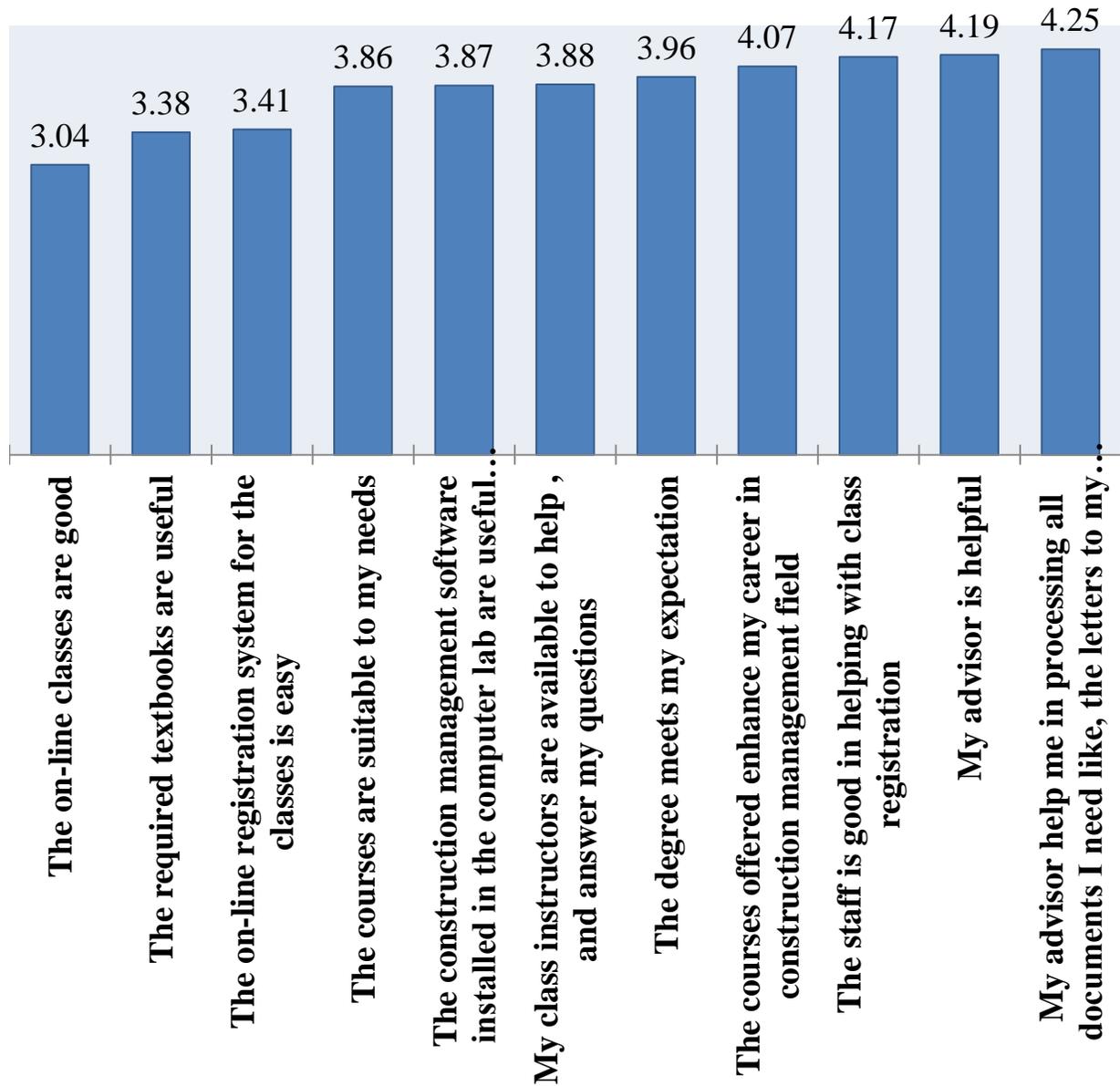


Figure 5: The product delivery quality

Question 5 asked MTM-CM students to use a scale from 1 to 5 and rate the different services at Bowling Green State University. As shown in Figure 6, the services such as financial aid, library, etc., were considered satisfactory by the students.

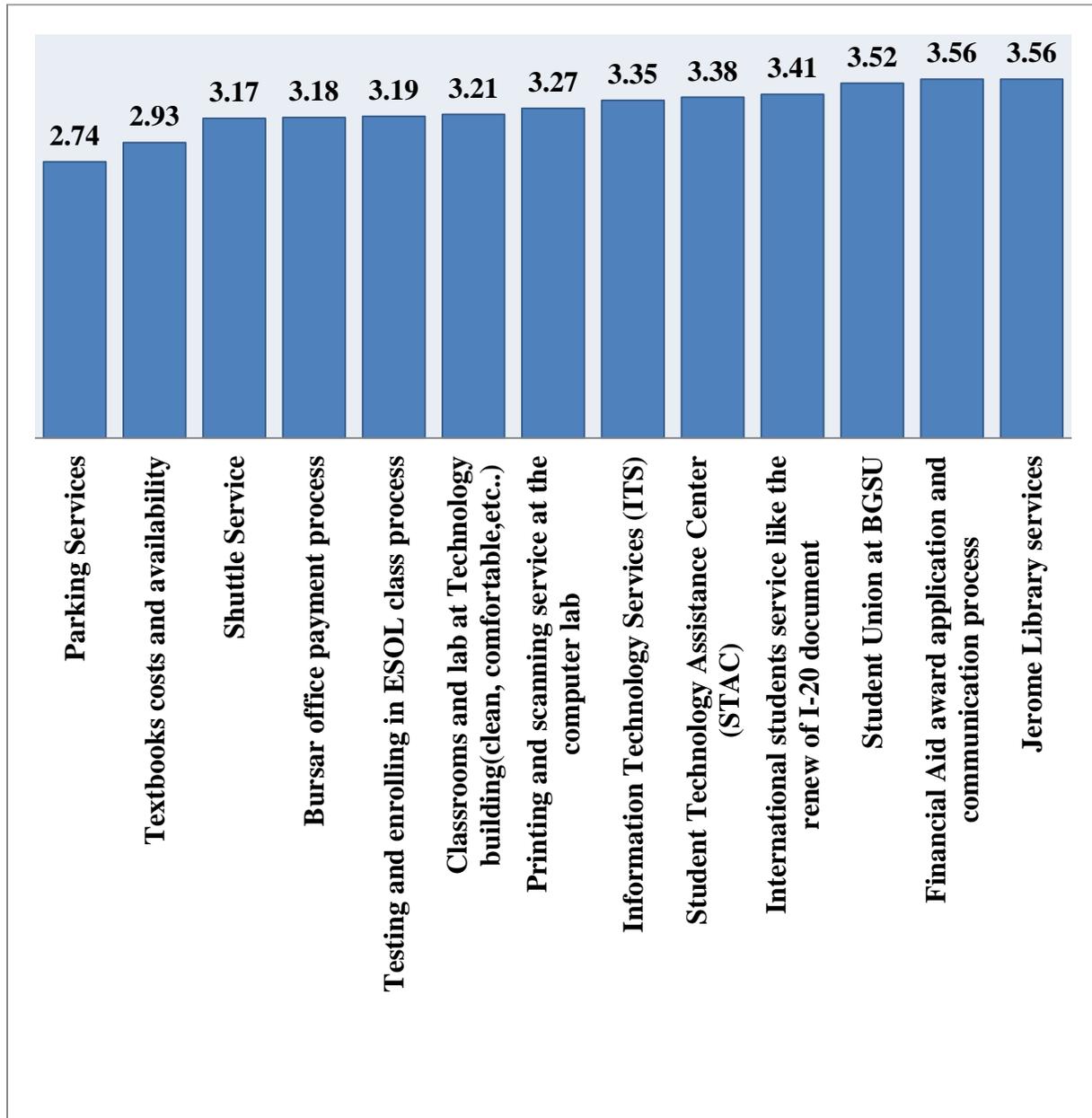


Figure 6: The services satisfaction level

In Question 6, the participants were asked to rate the benefits of the courses offered in the MTM-CM. Figure 7 shows that the Computer Aided Design course is less beneficial (3.43) and Construction Scheduling is most beneficial and useful to CM students.

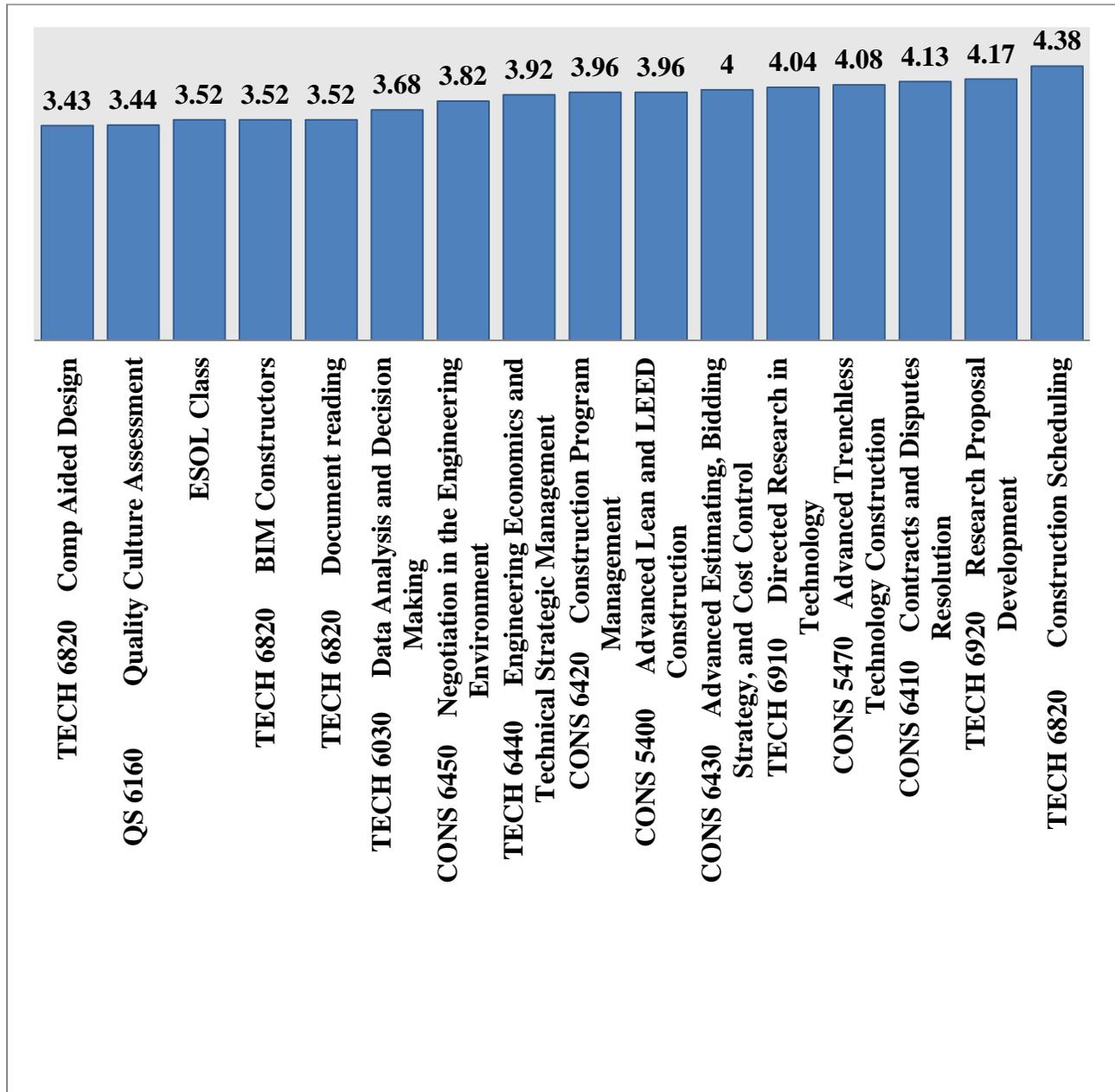


Figure 7: The benefits of the courses offered to the MTM-CM students

In Question 7, the students were asked to rate the level of difficulty of the courses offered from very difficult (1) to very easy (5). Data Analysis and Decision Making (M=2.43), Engineering Economics and Technical Strategic Management (M=2.5), and Advanced Estimating, Bidding Strategy, and Cost Control (M=2.5) were the most difficult courses. Construction scheduling rated as an easy course (M=3.58).

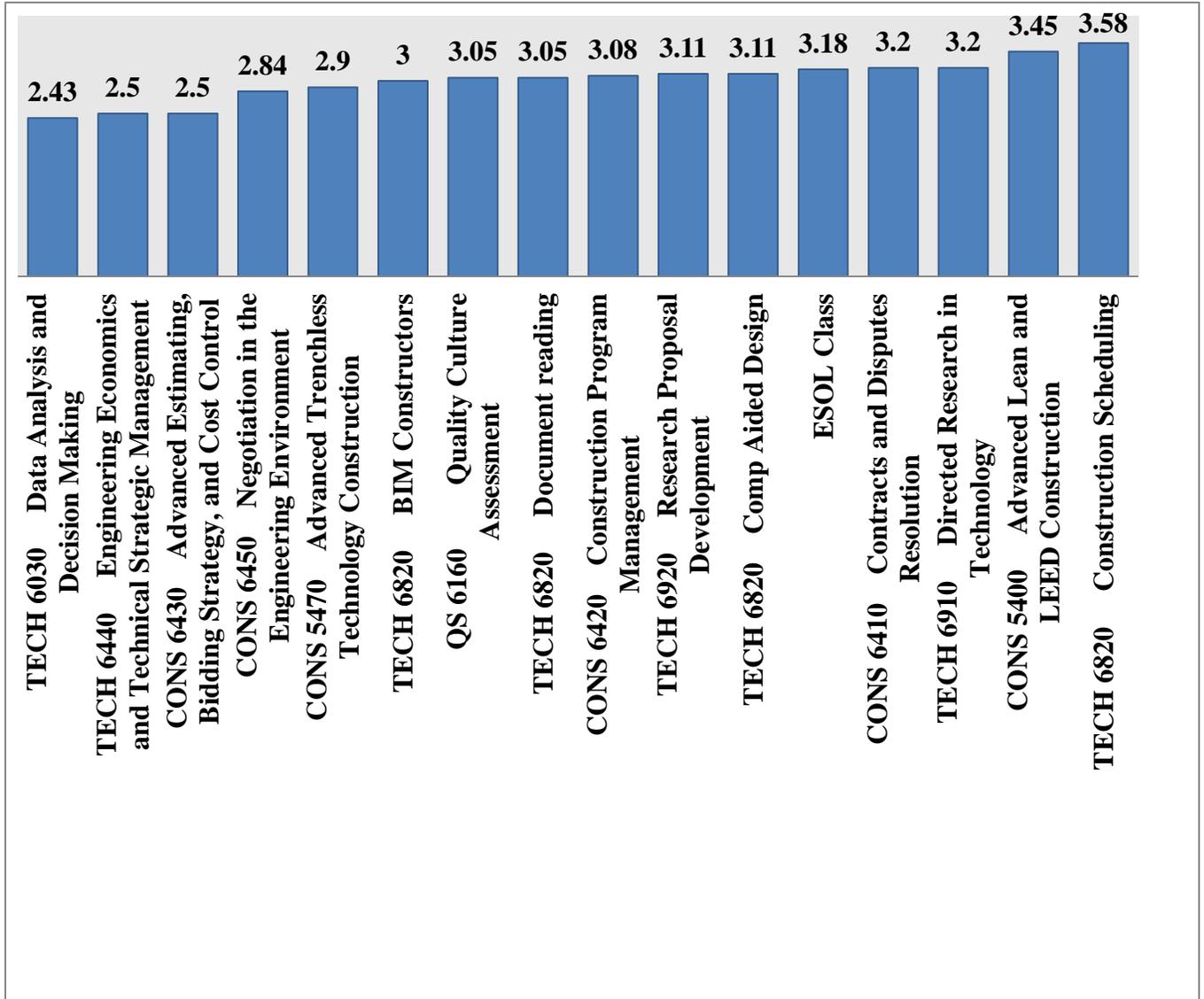


Figure 8: The difficulty levels of the courses offered to the MTM-CM students

In Question 8, the student was asked about the fairness of the grading and the program reputation on scale from 1(not fair) to 3(very fair). Students viewed the assignments and exam grading slightly fair (M=1.92). The students think that the program has a high reputation (M=2.32).

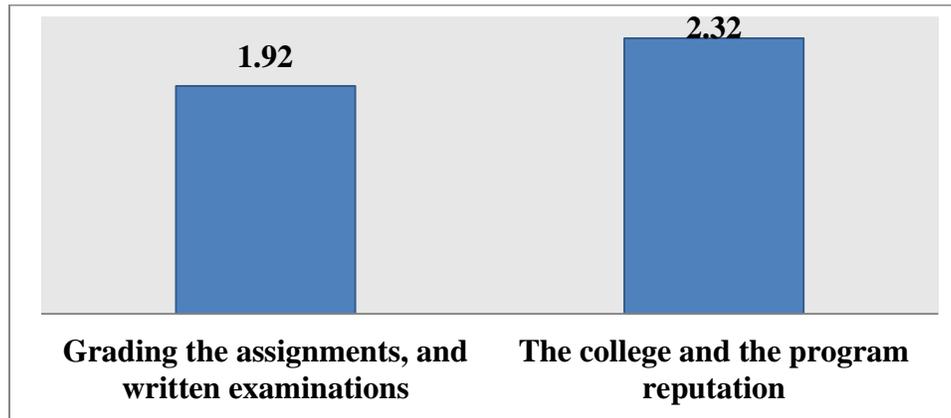


Figure 9: The grading and program reputation fairness

In Question 9, the students were asked to give their opinions concerning the number of credits and the program duration to graduate. Almost 90% of the students think the number of credits hours is perfect (figure10).

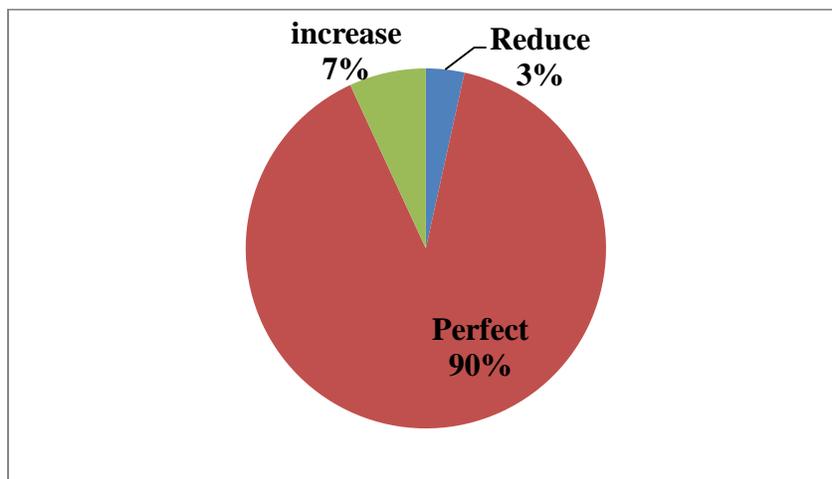


Figure 10: The number of credit hours

The student participants (97%) have agreed that the program duration is perfect (figure 11).

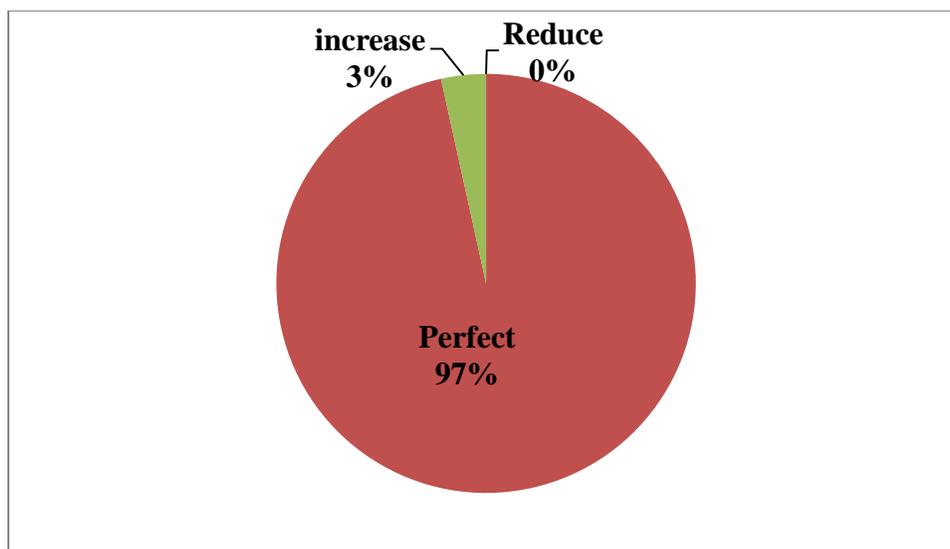


Figure 11: The program duration

In Question 10, the students were asked about the usefulness of the information provided during the orientation session; 50% of the respondents indicated that the information received was neither useful nor useless. Only 8% tend to think that the orientation is useless (figure 12).

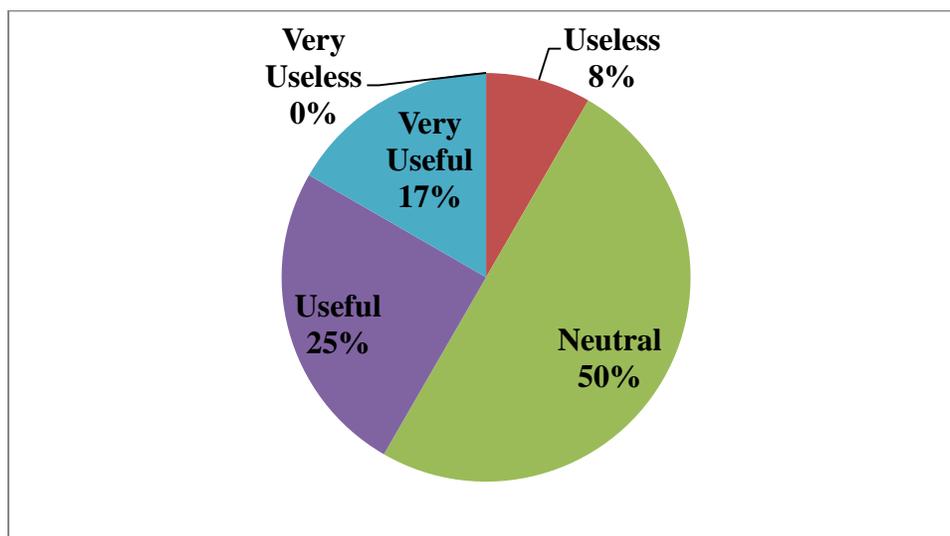


Figure 12: The orientation session usefulness

Question 11 asked students to state the reasons behind their decision to enroll in the Construction Management graduate program at Bowling Green State University. The results showed that the top reasons behind students' enrollment in the MTM-CM program were to increasing their knowledge in the construction management field (M=4.23) and help them get a better job (M=4.13).

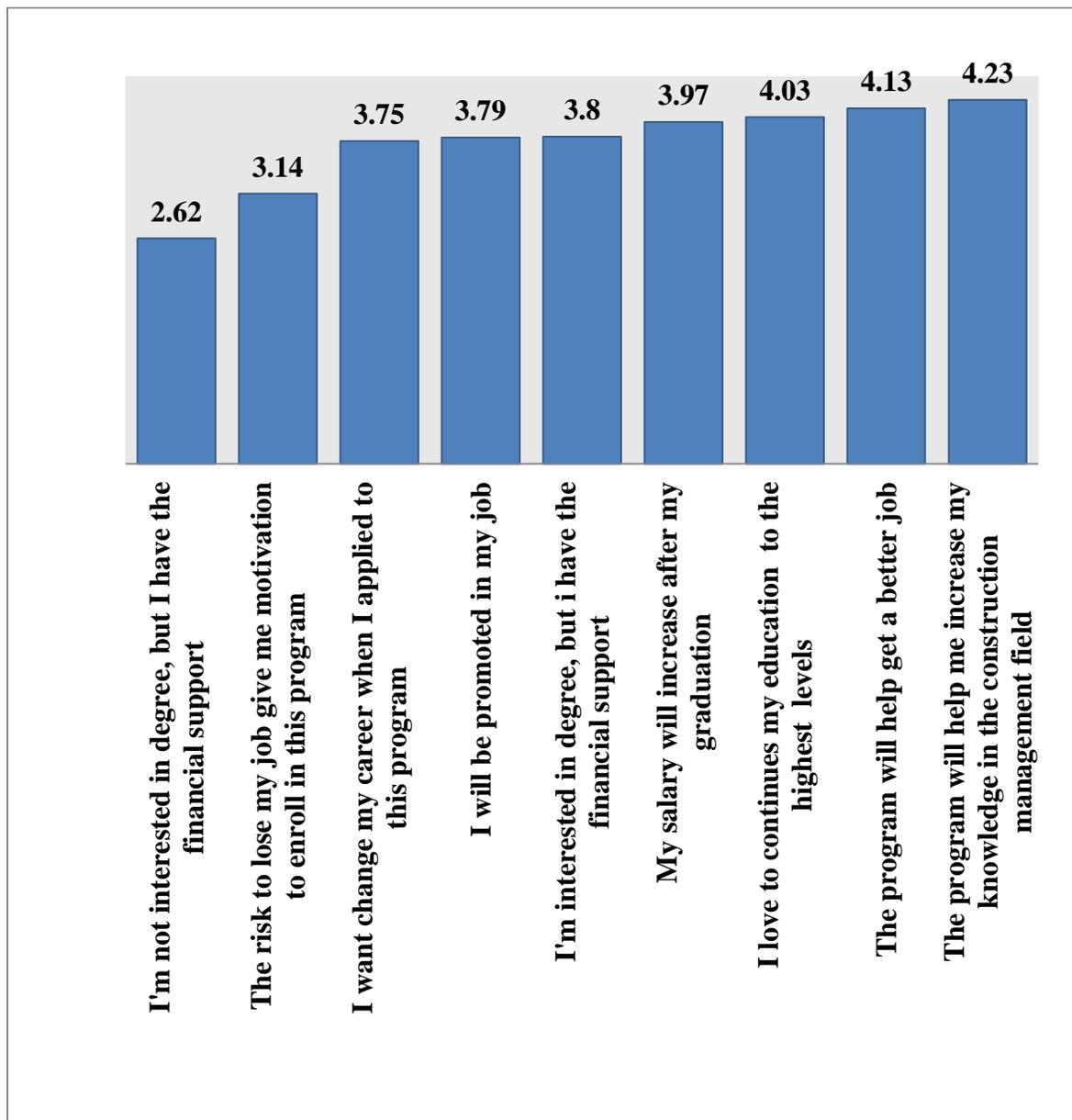


Figure 13: The reasons behind MTM-CM students' enrollment

Question 13 asked students if they think that the GRE test is a barrier within the admission requirements. The majority of students (68%) see the GRE test as a barrier (figure14).

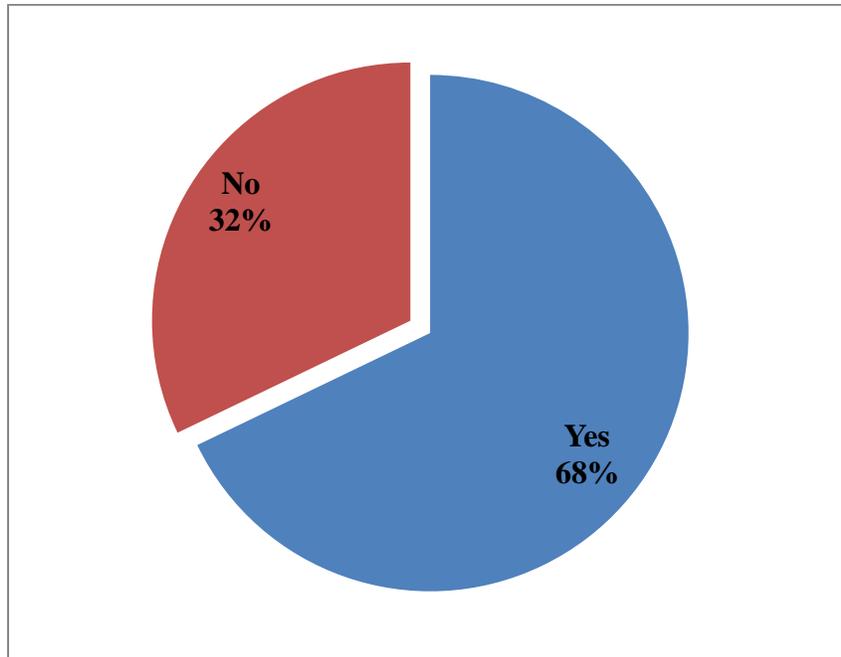


Figure 14: The GRE test in the admission requirements

Question 15 asked students to share their opinions about the faculty, staff and students at BGSU. The safety on campus statement was rated as the highest (M=4.20). The support and help from bookstore staff was rated as the lowest (M=3.88).

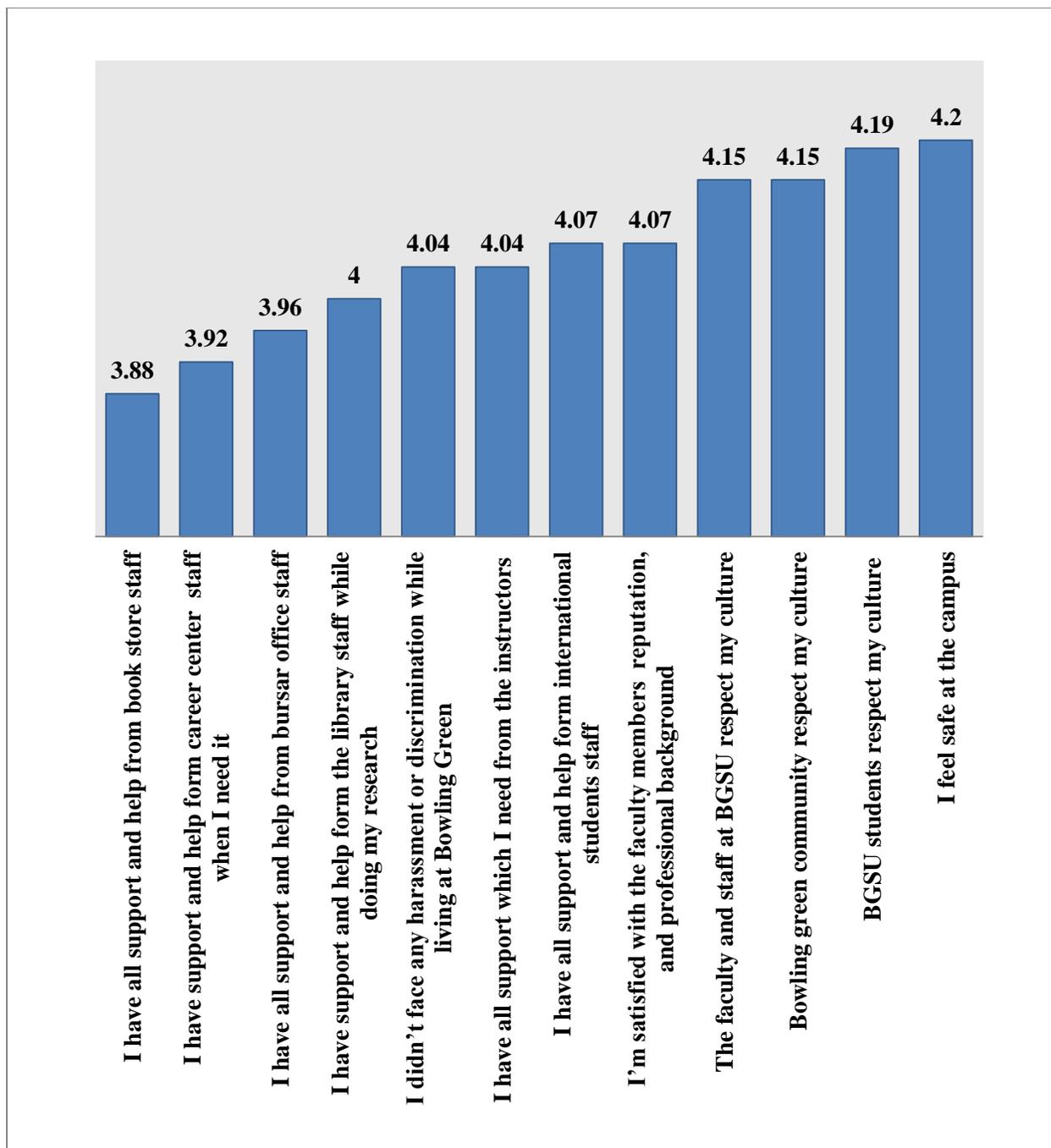


Figure 15: The participants' opinions toward the faculty, staff and students

Question 16 asked students to give their opinions about the BGSU website, social media, and how they were referred to the program. The participants agree that the website was easy to navigate when accessed by students (M=4.15). In addition, the majority of students agree to

recommend MTM-CM program for friend (M=4.34).

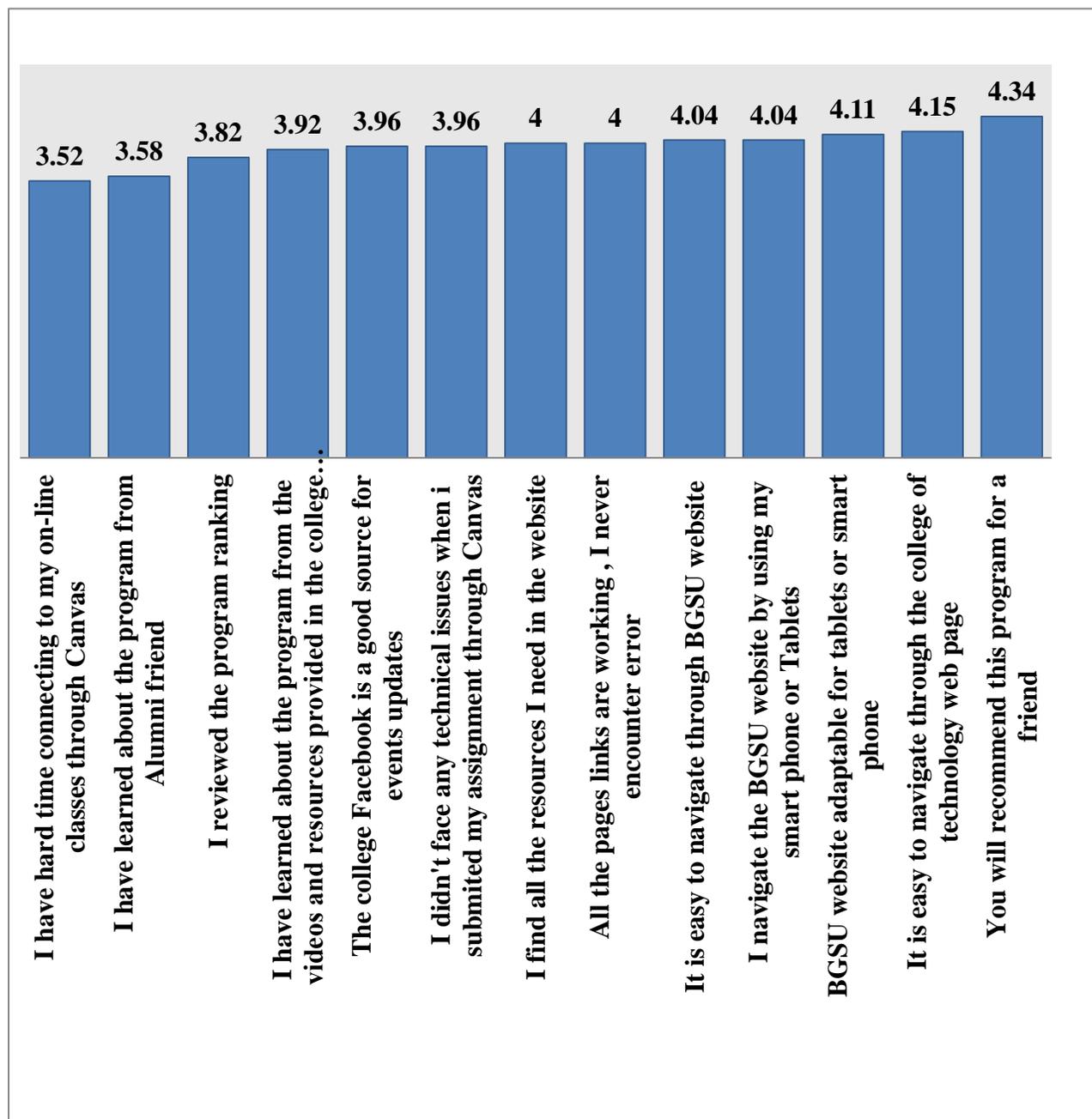


Figure 16: The students' options about the promotions tools

Question 17 asked students about the devices most used to navigate through the BGSU website.

The majority of students are using a laptop (42%), and iPhone (39%).

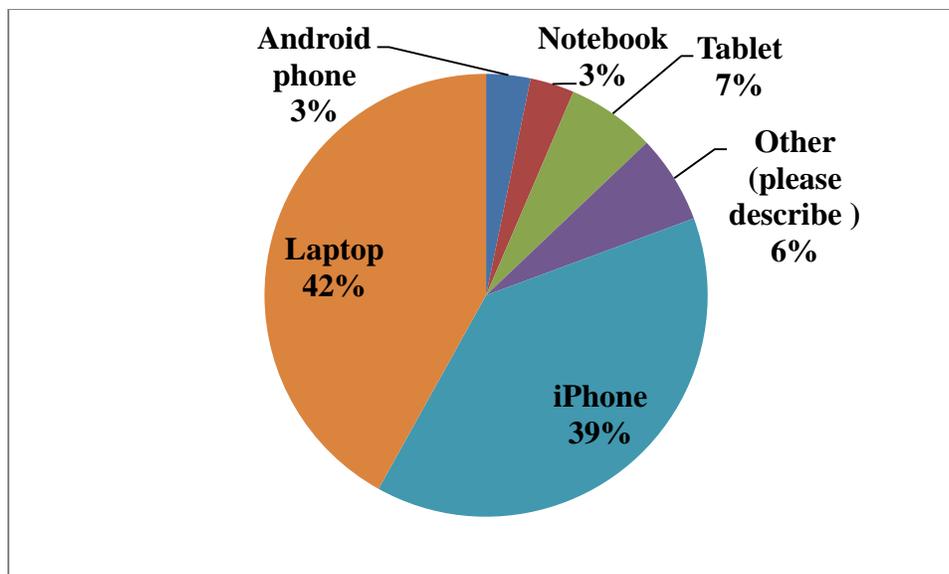


Figure 17: The electronic devices most used to navigate through the BGSU website.

Question 18, asked students about their opinions toward the services they received versus the money they invested at BGSU to get a good education. The tuition payment flexibility was rated as the lowest ( $M=3.33$ ). The majority of the students agree that life at Bowling Green is affordable ( $M=3.68$ ).

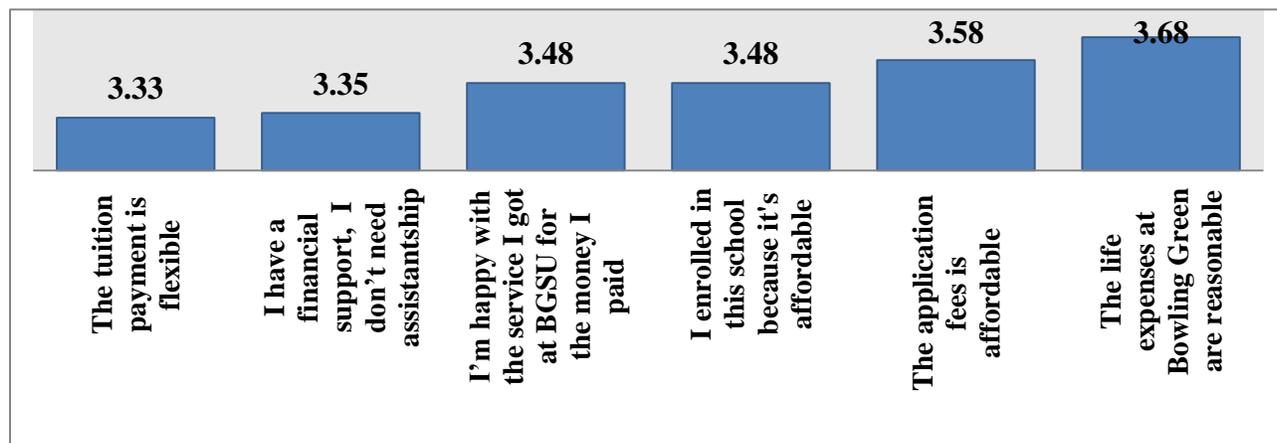


Figure 18: The students' opinions about the money invested versus services received

In Question 19, the students were asked to determine how many semesters it will take them to get their degree. The majority agree with 4 semesters (67%).

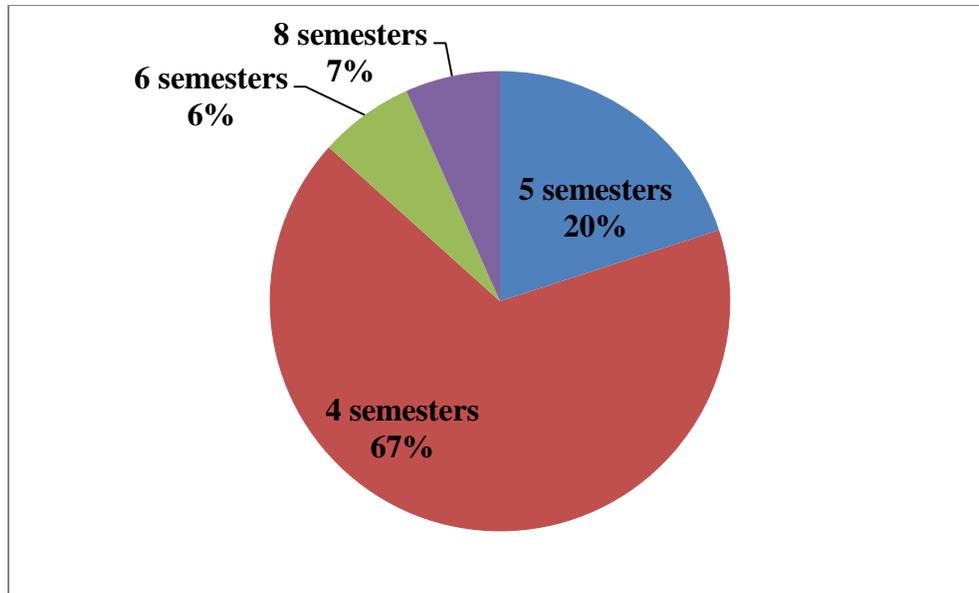


Figure 19: The number of semester's needed to get a degree.

In Question 20, the students were asked about the reasons that made them spend more than 6 semesters to graduate. The majority stated that working on a PhD and having a full time job are the reasons (40%).

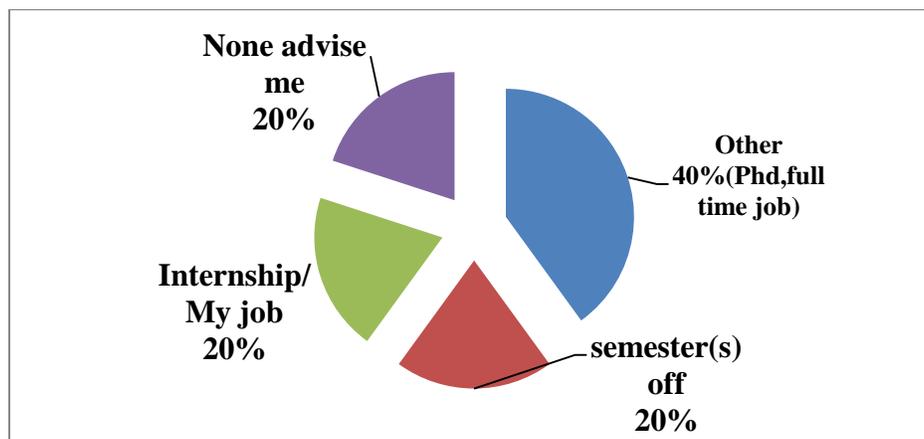


Figure 20: The reasons behind taking more than 6 semesters to graduate

Finally, the responses were divided into categories: price, product, personal, promotion, and people. The overall mean for each category was calculated. The following is an example showing the calculation process for the price category.

Category: Price

Statements	Total Responses	Mean	Total responses X Mean
The tuition payment is flexible	21	3.33	69.93
I have a financial support, I don't need assistantship	20	3.35	67
I'm happy with the service I got at BGSU for the money I paid	23	3.48	80.04
I enrolled in this school because it's affordable	21	3.48	73.08
The application fees is affordable	24	3.58	85.92
The life expenses at Bowling Green are reasonable	19	3.68	69.92
<b>Total 1</b>	<b>128</b>	<b>Total2</b>	<b>445.89</b>
<b>Overall Mean= Total2/Total1</b>	<b>3.48</b>		

Table 4: Example for the Overall Mean calculation

The flowing graph (Figure 21) summarizes the overall Mean for all categories.

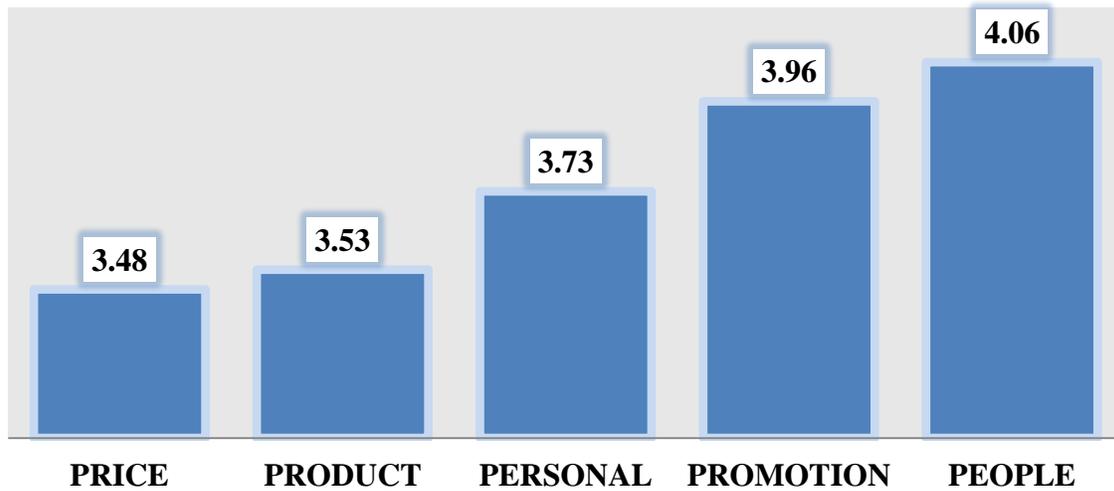


Figure 21: The overall Mean for all categories

The graph shows that the category of people has the highest mean ( $M=4.06$ ) and the category of price has the lowest mean ( $M=3.48$ ). That indicates that the MTM-CM students are happy with the support and help from faculty, staff, and the community in general.

## CHAPTER IV: CONCLUSIONS AND RECOMENDATIONS

The negligence of the customer voice (student) can lead to a decline in enrollment and decrease the retention rates. As a result, the program's reputation will be at risk. Therefore, investigating the satisfaction level may improve the enrollment in the MTM-CM program at BGSU and help the enrollment managers to establish a future marketing strategy. The study discussed the improvement of the enrollment in the MTM-CM program at BGSU through student's perspectives. In this regard, the following questions were asked:

1. Which marketing P factors had the most impact on graduate student satisfaction?
2. What are the reasons behind the students' decision to enroll in the construction management graduate programs at Bowling Green State University?
3. What are the most and least satisfaction items for graduate students on the university website?
4. What are the students' level of loyalty to Bowling Green State University and the College of Technology?
5. Are any of the admission requirements to enroll into the program viewed as barriers for the current students?

To help answer those questions, an On-line survey was conducted. It has 22 questions related to 5 major areas including price, people, product or service, personal, and people. In order to increase the response rate, the students were encouraged to participate through a drawing of a \$25 gift card. The response rate gained by these efforts was 70%.

## Conclusions and Discussion

The 5 research questions above were a framework for summarizing the collected data. Each question is discussed along with results associated.

*Q1: Which marketing P factors had the most impact on graduate student satisfaction?*

The majority of MTM-CM students (M=4.06) were happy with the People marketing factor. Students agree that the staff, faculty, and students community in general are helpful, nice and easy.

*Q2: What are the reasons behind the students' decision to enroll in the construction management graduate program at Bowling Green State University?*

The MTM-CM students stated that increasing their knowledge in the construction management field is the main factor behind enrolling in the program (M=4.23).

*Q3: What are the most and least satisfaction items for graduate students on the university website?*

Most of students are satisfied with navigation through the college web pages (M=4.15). On the other hand, the students tend to be less satisfied with On-line classes delivered through canvas (M=3.52).

*Q4: What are the students' level of loyalty to Bowling Green State University and the College of Technology?*

The overall mean for level of service at Bowling Green State University was neutral (M=3.53). However, the majority of students want to recommend the program to their friends (M=4.34). Therefore, the MTM-CM students are loyal to their college.

*Q5: Are any of the admission requirements to enroll into the program viewed as barriers for the current students?*

Almost two-thirds of the students (68%) viewed the GRE test as a barrier and want it to be removed from the admission requirements.

### **Recommendations**

The following are recommendations that could be helpful for the enrollment administrators and future studies regarding the MTM-CM students:

- 1- The admission requirements, for example, the GRE exam, should be reviewed.
- 2- Improve the delivery of the online courses through canvas.
- 3- Change the delivery format for some courses from Online to face-to-face. The courses include Data Analysis and Decision Making, Engineering Economics and Technical Strategic Management.
- 4- Change the methodology of teaching Advanced Estimating, Bidding Strategy, and Cost Control courses. Students need field trips to help them visualize the construction process.
- 5- Since ~50% of the students use their iPhone's we should have more Apps available.
- 6- Improve the orientation session for the future students.
- 7- Improve the on-line registration system for the classes.
- 8- Provide more textbooks with a reasonable cost.
- 9- Improve the parking by enlarging the parking lot next to the technology building.
- 10- Provide more information about students in the construction management department office to help the data collection for future studies.

For future studies:

- 11- Follow up studies should be conducted each 2 or 3 years to measure MTM-CM students' satisfaction.
- 12- Give more time for students to respond.

13- Provide shorter, more condensed questions to the students.

14- Give more incentives to increase the responses rate.

15- Follow up the survey with email for each student.

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**APPENDIX A: HSRB LETTER**

DATE: June 11, 2014

TO: Mouloud Messaoudi, Master  
FROM: Bowling Green State University Human Subjects Review Board

PROJECT TITLE: [621482-1] Improving the enrollment in the construction management graduate program at Bowling Green State University through the student's perspectives

SUBMISSION TYPE: New Project

ACTION: ACKNOWLEDGED

Thank you for submitting the New Project materials for this project. The Bowling Green State University Human Subjects Review Board has ACKNOWLEDGED your submission. No further action on submission 621482-1 is required at this time.

The following items are acknowledged in this submission:

- Application Form - Review Determination Form (UPDATED: 06/11/2014)

If you have any questions, please contact the Office of Research Compliance at 419-372-7716 or [hsrb@bgsu.edu](mailto:hsrb@bgsu.edu). Please include your project title and reference number in all correspondence regarding this project.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within Bowling Green State University Human Subjects Review Board's records.



BOWLING GREEN STATE UNIVERSITY

Office of Research Compliance

DATE: June 12, 2014

TO: Mouloud Messaoudi, Master

FROM: Bowling Green State University Human Subjects Review Board

PROJECT TITLE: [621482-1] Improving the enrollment in the construction management graduate program at Bowling Green State University through the student's perspectives

SUBMISSION TYPE: New Project

ACTION: HSRB APPROVAL NOT NEEDED

DECISION DATE: June 12, 2014

Thank you for your submission of New Project materials for this project. The Bowling Green State University Human Subjects Review Board has determined this project does not meet the definition of human subject research under the purview of the HSRB according to federal regulations.

We encourage you to continue to confirm with the HSRB whether future projects of this nature require review.

We will retain a copy of this correspondence within our records.

If you have any questions, please contact the Office of Research Compliance at 419-372-7716 or [hsrb@bgsu.edu](mailto:hsrb@bgsu.edu). Please include your project title and reference number in all correspondence regarding this project.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within Bowling Green State University Human Subjects Review Board's records.







TECH 6820	Comp Aided Design	<input type="radio"/>					
TECH 6820	Document reading	<input type="radio"/>					

**Q7** How do you rate the level of difficulty for following courses as graduate student at Bowling Green State University?

	Very Difficult (1)	Difficult (2)	Neutral (3)	Easy (4)	Very Easy (5)	Not applicable (6)
CONS 6450	Negotiation in the Engineering Environment	<input type="radio"/>				
TECH 6440	Engineering Economics and Technical Strategic Management	<input type="radio"/>				
CONS 6420	Construction Program Management	<input type="radio"/>				
TECH 6030	Data Analysis and Decision Making	<input type="radio"/>				
CONS 6410	Contracts and Disputes Resolution	<input type="radio"/>				
TECH 6920	Research Proposal Development	<input type="radio"/>				
CONS 6430	Advanced Estimating, Bidding Strategy, and Cost Control	<input type="radio"/>				
TECH 6910	Directed Research in Technology	<input type="radio"/>				
QS 6160	Quality Culture Assessment	<input type="radio"/>				
CONS 5470	Advanced Trenchless Technology Construction	<input type="radio"/>				
CONS 5400	Advanced Lean and LEED Construction	<input type="radio"/>				
TECH 6820	Construction Scheduling	<input type="radio"/>				
ESOL Class		<input type="radio"/>				
TECH 6820	BIM Constructors	<input type="radio"/>				
TECH 6820	Comp Aided Design	<input type="radio"/>				
TECH 6820	Document reading	<input type="radio"/>				

**Q8** what do you think about the following items as Construction Management graduate student at Bowling Green State University?

	Not fair (1)	Fair (2)	Very fair (3)	Not applicable (4)
Grading the assignments, and written examinations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The college and the program reputation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Q9** what's your opinion about the following items?

	Reduce (1)	Perfect (2)	increase (3)	Not applicable (4)
The number of credit hours	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The duration of the program	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Q10** How useful was the information you received during the orientation session?

- Very Useless
- Useless
- Neutral
- Useful
- Very Useful
- Not applicable





**Q16** Please rate the following Items including BGSU website, social media, and and how did you referred to the program?

	Strongly Disagree (1)	Disagree (2)	Neither Agree nor Disagree (3)	Agree (4)	Strongly Agree (5)	Not applicable (6)
It is easy to navigate through BGSU website	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is easy to navigate through the college of technology web page	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I find all the resources I need in the website	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
All the pages links are working , I never encounter error	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The college Facebook is a good source for events updates	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have learned about the program from the videos and resources provided in the college web page	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I reviewed the program ranking and school reviews before enrolling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have learned about the program from Alumni friend	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most of the time I navigate the BGSU website by using my smart phone or Tablets	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
BGSU website adaptable for tablets or smart phone	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
You will recommend this program for a friend	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have hard time connecting to my on-line classes through Canvas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I didn't face any technical issues when I submitted my assignment through Canvas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Q17** what's the device you are use the most to navigate through BGSU website?

- iPhone
- Android phone
- Smart phone
- Tablet
- Notebook
- Laptop

- Desktop computer
- Other (please describe ) \_\_\_\_\_

**Q18** After you invested your money at BGSU to get a good education, and make your life better, what's your opinion about the following statements ?

	Strongly Disagree (1)	Disagree (2)	Neither Agree nor Disagree (3)	Agree (4)	Strongly Agree (5)	Not applicable (6)
The tuition payment is flexible	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm happy with the service I got at BGSU for the money I paid	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I enrolled in this school because it's affordable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The application fees is affordable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The life expenses at Bowling Green are reasonable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have a financial support, I don't need assistantship	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Q19** Please determines how many semesters it will take you to get your degree?

- 4 semesters
- 5 semesters
- 6 semesters
- 7 semesters
- 8 semesters

**Q20** If it has taken you more than 6 semesters to graduate, please indicate which of the reasons apply to you

- withdraw during a semester(s)
- semester(s) off
- switch majors
- Internship/ My job
- The degree of the program typically takes more than 6 semesters
- The required courses were not always offered
- Personnel, family or health problems
- I have to take care of my family
- I registered for few classes , I'm not in rush to graduate
- Academic problems
- Financial crisis
- My advisor misinformed
- None advise me
- Military service
- Not applicable
- Other \_\_\_\_\_

**Q21** Finally, please add any other comments or suggestions regarding your university or department experiences.

**Q22** If you want to win \$25 gift card, please enter your email address below. As a note, no incentives will be given for partial completion of the survey. There will be a random drawing to select the winner; if you win you will be notified by email.



**APPENDIX D: SURVEY REMINDER EMAIL**

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Dear construction management grad students:

This is the final reminder for the survey about **IMPROVING ENROLLMENT IN THE CONSTRUCTION MANAGEMENT GRADUATE PROGRAM THROUGH THE STUDENT'S PERSPECTIVES**. We thank those of you who have responded to the survey.

The survey will be closed on 07/14/2014. Please take the survey before that date because each additional response makes the data more significant. The link again is: [https://bgsu.az1.qualtrics.com/SE/?SID=SV\\_3Evo49OZzG7sXlh](https://bgsu.az1.qualtrics.com/SE/?SID=SV_3Evo49OZzG7sXlh)