

Promoting Information Systems Major to Undergraduate Students - A Comprehensive Investigation

Lei Li

Chi Zhang

Guangzhi Zheng

Department of Information Technology
College of Computing and Software Engineering
Kennesaw State University
Marietta, GA 30060, USA
li_lei@kennesaw.edu

ABSTRACT

Weak enrollment growth has been a concern for many Information Systems (IS) programs in recent years although the IT/IS job market remains strong. Stimulating undergraduate students' interest to IS programs have been a challenge. In this paper, the researchers took a comprehensive approach to study how to effectively promote a Management Information Systems (MIS) program to undergraduate students at a medium-size public university in the southeastern US. Using a survey-based method, the researchers first investigated the factors that impact students' selection of majors and identified students' perceptions on an MIS program. In this paper, an MIS program promotion strategy was then developed and empirically validated. The research results showed that the promotion strategy can successfully stimulate participants' positive perceptions on the MIS program. The approach presented in this study could serve as an exemplar to other IS programs or other major fields to tackle enrollment challenges.

Keywords: Enrollment, Factors of major selection, Program promotion

1. INTRODUCTION

In today's competitive and enrollment-driven higher education environment, universities have increased emphasis on student recruitment and retention. It becomes increasingly important for educators to understand the factors that cause students to select one major over another and develop corresponding strategies to attract students and increase enrollment and retention. This is true particularly in the Information Systems (IS) field, which experienced a 75% decline in enrollments in less than a decade (Rouibah, 2012; Saunders and Lockridge, 2011). This trend is peculiar in light of the fact that employment opportunities for IS graduates have been quite stable and even been growing in some areas, and average salaries remained high relative to other positions as well (Frankel, 2008). A number of studies have investigated factors using various approaches including surveys (Downey et al. 2011; Hogan and Li, 2010; Kuechler et al., 2009; Walstrom et al. 2008; Zhang, 2007) and qualitative studies (Ferratt et al. 2010; Rouibah, 2012). These studies have given insights into the drivers and barriers to students' choice of IS majors. However, strategies and actions are only implied by these studies but not empirically tested.

In this paper, the researchers conducted a comprehensive study that not only identified the important factors impacting student's choice of majors, but also developed a strategy aiming to promote MIS major and tested the strategy empirically. The rest of paper is organized into the following sections: section two describes related studies; section three and four describes the research framework and methodology; section five presents research findings; and section six concludes the paper and discusses implications of the study.

2. RELATED STUDIES

Several previous studies have investigated the factors that influence business students' choice of college major, either in a broad context or in relation to a specific major. A classic study by Galotti and Kozberg (1987) found that in general students' choice of major was determined primarily by five factors: difficulty and appeal of the major, applicability to future career goals, reputation of the program, past experiences with the field, and the courses required for completing the major. Galotti and Kozberg's (1987) study indicated that their participants made relatively informed decisions on their major selection, and other people's opinions had little impact on those decisions. Downey et al. (2011) showed that interest in the field, job availability, and

job security are common influences across all majors. “Interest” as an influencing factor to major choice has been found in other studies as well (Ferratt et al., 2010; Kuechler et al., 2009). The Staff Report No. 500 of Federal Reserve Bank of New York (Wiswall and Zafar, 2011) studied the determinants of college major choice using a unique information experiment embedded in a survey, and found that while earnings are a significant determinant of major choice, tastes are the dominant factor in the choice of field of study.

Several studies focused specifically on students with business majors and even specific majors in business. Walstrom et al. (2008) found that MIS students’ decisions on major were influenced primarily by information on the Web. Simons et al. (2003) found that, among accounting students, major selection was largely based on student expectations about future job opportunities, earning potential, and actual job content. Simons et al. (2003) also noted that many accounting students indicated that their college professors played a big role in their decision to select accounting as a major. Similarly, a study by Francisco et al. (2003) found that non-accounting business students chose not to major in accounting because they viewed it boring and repetitive, and they thought accountants were poorly paid. However, the study also found that these same students lacked accurate information regarding what accountants actually do. In fact, the students who chose accounting as their major had significantly more accurate information about the careers in that field. The reality is that accountants are highly paid and receive lucrative perks and bonuses as well (Byrnes, 2005). The lack of accurate information about the major area was also found by Pollacia and Lomerson (2006) to be one of the significant contributors to avoiding IS major. Congdon-Hohman et al. (2013) examined how model uncertainty affects students’ choice of major and found that greater uncertainty about a particular major caused the student to be less likely to choose that major, and that greater uncertainty across all majors caused fewer students to major in science, technology, engineering, and math (STEM) majors.

Other recent studies (Kumar and Kumar, 2013; Mathiyalakan et al. 2012) reported that media exposure, social image, job availability, and aptitude were found to be significant factors that affect students’ decisions to select a business major. The results also revealed that family, high-school counselors, faculty advisors and professors had a major influence on students’ decisions.

To have a deeper understanding of the subject matter interest, Ferratt et al. (2010) studied two factors, practical application of course work and daily variety applied to the choice of majors and careers, and being able to link business and technology, and found them uniquely influential on choosing MIS as a major. Zhang (2007) decomposed individual antecedents of intention to choose an IS major into attitude toward choosing IS major and subjective norm. The results identified “genuine interests in the IS field,” “job availability,” “the difficulty of the IS curriculum,” and “opinions from family” and “professors” as important factors that affect students’ intentions to choose an IS major. Zhang (2007) also suggested that female students were discouraged socially from majoring in IS.

Researchers also conducted qualitative studies to understand further the factors that influenced student choice

of an IS major. Rouibah (2012) provided a qualitative survey study in a Kuwait university and identified 13 drivers and 11 perceived obstacles to selecting MIS major as shown in Tables 1A and 1B.

Drivers	Attributes
Characteristics of MIS major/ curriculum	Usefulness of the major, easiness of the major, rapid change of curriculum, up-to-date curriculum, creativity nature of the major, technology-focused, problem-solving challenges
Characteristics related to instructor	Active, cool, good reputation, knowledgeable, teaching style, innovative teaching
Social impact	Family pressure, instructor influence, friends and classmate influence
Self-efficacy	Capabilities to succeed in the major, matching of personal skills, availability of technical skills, technology and willingness to achieve goals
Match with interests	Match with personality, passion for the major, interest in technology, suitability with desires, compatibility with interest
Job characteristics	Match with job description, job with social interaction, job with technical skills, working conditions, career opportunities, job reputation
Perceived job availability	Availability of variety of jobs, employment security, advancement opportunities
Financial consideration and perceived value	Amount of salary, and additional benefits
Information search	Sources to get information of the major: books, training sessions on MIS courses, direct or indirect recommendations from family members, friends, instructors
Attitude	Positive attitude toward the major, technology, and job prospects after graduation
Perceived enjoyment	Enjoyment in use of technology, interesting subjects, and fun learning experience
Curiosity	Curious about the major and the jobs after graduation
Effect of group	Influence from others’ recommendation about the major

Table 1A: Drivers toward Selecting MIS major
(Rouibah, 2012)

Brooks et al. (2014) studied motivations of undergraduate students in choosing IS as their major. Results indicated that students were highly motivated by a general love of technology. Additional motivating factors include job security and gratifying work provided by the profession. Brooks et al. (2014) also compared motivational factors of students with those of professionals and found that these factors were similar. The findings provided insight into

opportunities for positioning IS programs and enhancing curriculum.

Obstacles	Attributes
Difficulties of the major/ curriculum	Too technically oriented, bad prerequisite courses, rapid changes and hard to follow, too complex, and lack of attractiveness
Instructor's bad reputation and teaching style	Severity of instructors, relative advantage of other instructors in other majors, and bad experience in teaching prerequisite courses
Lack of self-efficacy	Poor memorization, lack of computer skills, lack clarity of MIS objectives, relative advantage of other major compare to MIS, lack of motivation to study MIS, and students' weaknesses in English language
Mismatch with students' interest	The major does not match their interest
Negative perception of job characteristics	Lack of social interaction in MIS related jobs, lack of career path, and lack of job reputation
Lack of perceived job availability	Lack of employment security, lack of job availability
Less financial considerations compared to other jobs	Salary after graduating other majors are higher than MIS
Negative influence of social pressure	Negative comments about the major from family members and friends
Anxiety from IT	Fear of using technology
Negative effect of the group perception	Negative comments from people around
Negative attitude towards the MIS major	No interest in technology and in continuous learning of new things. Difficult to study the major

Table 1B: Obstacles toward Selecting MIS major (Rouibah, 2012)

Burns et al. (2014) studied why fewer students chose the Information Systems (IS) major given the increased demand for technology-oriented jobs. Burns et al. (2014) surveyed 322 undergraduate business students enrolled in an introductory IS course. The survey results indicated that lack of interest in IS or greater interest in another major were the primary reasons why students did not select IS as their major. Furthermore, Burns et al. (2014) found that even though students were knowledgeable about the career opportunities in the IS field, they simply did not find the IS field interesting enough to major in this field.

The above studies of student choice of major are summarized in Tables 2A (choice of any major in general), 2B (business majors), and 2C (IS major in particular). The findings of common influencing factors are important for the IS community. However, the strategy and intervention methods found in the prior research have remained largely at the theoretic level. Few studies examined the real results on any intervention methods. To increase IS student enrollment, IS programs should not only understand factors theoretically but also conduct more empirical studies to evaluate strategies and methods.

Study toward student choice of major in general	Common Influencing Factors
Galotti and Kozberg (1987)	Difficulty and appeal of the major, applicability to future career goals, reputation of the program, past experiences with the field, the courses required for completing the major
Wiswall and Zafar (2011)	Earnings are a significant determinant of major choice; tastes are the dominant factor in the choice of field of study
Downey et al. (2012)	Interest in the field, job availability, and job security
Congdon-Hohman et al. (2013)	Greater uncertainty about a particular major causes the student to be less likely to choose that major

Table 2A: Studies toward Student Choice of Major

Study toward student choice of business majors	Drivers	Obstacles
Simons et al. (2003)	Largely based on student expectations about future job opportunities, earning potential and actual job content	
Francisco et al. (2003)		Inaccurate information about the major prospects
Walstrom et al. (2008)	Influenced primarily by information on the web	
Ferratt et al. (2010)	Practical application of course work and daily variety	
Kumar and Kumar (2013)	Social image, job availability, aptitude, people influence	

Table 2B: Studies toward Student Choice of Business Majors

Study toward student choice of IS major	Drivers	Obstacles
Pollacia and Lomerson (2006)		Lack of availability of accurate information about this area to high school students
Zhang (2007)	Attitude (job related beliefs, image related beliefs, cost related beliefs and experiential beliefs) and subjective norm (people influence)	
Kuechler et al. (2009)	Genuine interest	Amount of work to get an IS degree, an undesirable amount of continuous training to keep an IS career
Ferrat et al., (2010)	Subject matter interest – linking business and technology	
Rouibah (2012)	13 drivers – listed Table 1A	11 obstacles – listed in Table 1B
Mathiyalakan et al. (2012)	Faculty advisors and media exposure (news about MIS), educational and career goals and their attitude toward their departments and faculty	
Brooks et al. (2014)	A general love of technology, job security and gratifying work provided by the profession	
Burns et al. (2014)		Lack of interest in IS or greater interest in another major; Being knowledgeable about IS is not a factor when choosing other majors over IS

Table 2C: Studies toward Student Choice of IS Major

3. RESEARCH FRAMEWORK AND HYPOTHESIS DEVELOPMENT

The researchers conducted a two-phase study to investigate how to effectively promote an MIS program to undergraduate students. The research framework is illustrated in Figure 1. In phase one, the researchers studied important factors impacting student’s choice of majors by validating Walstom et al.’s (2008) findings in a different academic setting, and studied students’ perceptions toward an IS program. The researchers found that many business students have only a limited understanding of the IS program, and these students mainly learned information about the program from introductory IS courses and the Internet.

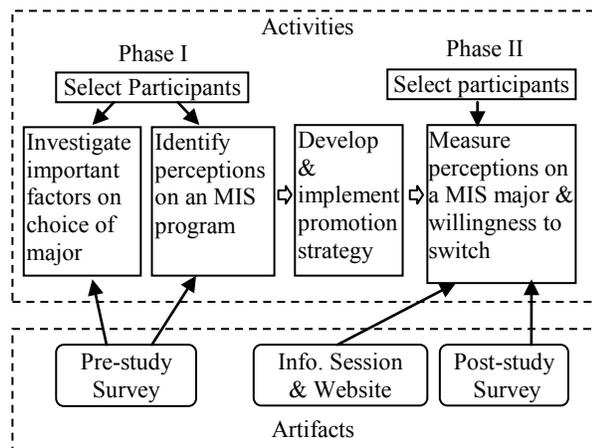


Figure 1. Research Framework

In phase two, the researchers carried out an MIS major promotion strategy by adding an information session about the MIS program in a skill-based introductory MIS course. The researchers tailored the session based on the critical factors identified in phase one that impacted students’ choice of majors. The content of the session was converted into a website and made available to the students. The authors hypothesized that hosting such a session and creating an information website increase students’ awareness of the MIS program, enforce a more positive opinion about the MIS program, and therefore stimulate students to choose IS as their major. The research hypotheses of this study are formed as:

H1: Students enrolled in skill-based introductory MIS course sections with an information session about MIS program would have more positive perception toward MIS major than students enrolled in other sections of the course without such an information session.

H2: Students enrolled in skill-based introductory MIS course sections with an information session about MIS program would be more likely to choose MIS program as a major than the students enrolled in other sections of the course without such an information session.

4. RESEARCH METHODOLOGY

The researchers used a survey-based method in this study. Questionnaires were constructed and distributed to undergraduate business students at a medium-size public university in Southeastern US. The participants were drawn from three types of courses: a skill-based introductory MIS course, a principle introductory MIS course, and MIS major specific courses. Eighteen sections of various courses participated in the study. The survey was anonymous and participation was voluntary.

The questionnaire of phase one was designed to gather the following information: 1) demographic information about the participants; 2) important factors to consider when they chose their majors; 3) participants' perception of the MIS program; 4) the information resources from which the respondents learned about IS programs. Survey questions in part two were adapted and revised from Walstom et al., (2008), and the questions in part three and four were adapted from Hogan and Li (2010) and Li and Thomson (2011).

In phase two, an information session and a companion website were created based on the findings from phase one. The information session included: 1) what an MIS major is and how it is different from IT and Computer Science; 2) why MIS is an interesting major; 3) career outlook of the MIS major; and 4) a video featuring an MIS graduate talking about the MIS major.

To test the effectiveness of the promotion strategy, the researchers selected several sections in a skill-based introductory MIS course as study subjects because:

1. This study found that students receive major-related information mainly from the major-related courses and the Internet. The skill-based course was the first required MIS-related course for all students. But the course focused mainly on using Microsoft Excel to solve business problems and might mislead students on what an MIS major is. Therefore, a skill-based course was a good target for this experiment.
2. Most students took the skill-based course in their sophomore or junior years. The researchers wanted to make sure that students have access to the information about MIS major in the early stage of their study.
3. The skill-based MIS course is a standardized class in which all sections were taught using the same teaching materials. This greatly reduced the impacts of potential mediating factors such as learning materials on this study.

The empirical validation lasted two academic semesters. In the first semester, two sections of the skill-based course were selected. One section was used as a treatment group in which the instructor gave a 15-minute information session about the MIS program. The information session was converted into a website and shared with the participants throughout the semester. The other section was used as a control group in which no promotion strategy was applied. At the end of the semester, a post-study survey was administered to both treatment and control groups to measure participants' perception of the MIS program and their tendency to choose MIS as their majors. The same

study was repeated in a different academic semester to increase the sample size of this research.

5. RESEARCH FINDINGS

5.1. Demographic Data

Two hundred and eighty seven responses were collected from eighteen participating sections. Thirty-eight participants were from sections of MIS major specific courses. Two hundred and forty nine participants were from the sections of a skill-based introductory MIS course and a core MIS course. Both classes are required for all business students. Among those participants, a majority were sophomores (35.19%) and juniors (35.89%); 46.13% of the participants were male students and 53.87% were female. The distribution of genders is consistent with the gender breakdown of the undergraduate business program. The majority of the participants were traditional students (about 70.83% are younger than 25 years). Over 73% of participants held either a full-time or part-time job at the time of the survey. The majority of the participants had already chosen their major as listed in Table 3.

Majors	Percentage
Accounting	20.9%
Finance	14.9%
Marketing	12.9%
Management	23.3%
Management Information Systems (MIS)	4.4%
General Business	13.3%
Not yet decided	5.6%
Others	4.8%
Total	100.0%

Table 3. Distribution of Majors in Participants

Note: The sample size is 249. Participants from MIS major specific classes were excluded because a majority of them were MIS majors.

5.2. Important Factors Impacting Students' Choice of Majors

In the questionnaire, the researchers listed eight important factors that may impact respondents' choice of major and these factors were grouped into three categories: career-related factors, personal interest factors, and social and referent factors. The participants were asked to rate the importance of each factor on a five-point scale ranging from "1 – least important" to "5 – most important" with 3 as neutral. The statistical means of the responses from the participants are reported in Table 4.

Table 4 shows that career related factors such as salary and job security and personal interest in the subject matter rank highest when respondents select their majors. The image of the profession and reputation of the degree program had positive impacts on respondents' choice of major, while the influence of friends and family members was less impactful. Interestingly, respondents did not weigh the easiness of the subject matter as important. Those findings are consistent with results reported by Walstom et al. (2008). In addition, participants majoring in MIS rated all eight factors in similar importance as the participants from other majors did. In summary, the study results indicated that MIS

students were no different from other students when chose their majors.

Factors	Detailed Descriptions	General Students	MIS Students	Overall
Sample size		249	38	287
Career related	Job Security of the Related Occupations	4.23	4.35	4.25
	Starting salary and long-time salary prospect	4.42	4.22	4.38
	Occupational Growth of Forecast	4.15	4.24	4.16
Personal interest	Personal interest in the subject matter	4.38	4.56	4.41
	Easiness of the Subject Matter – Easy for me	3.14	3.10	3.13
Social & referent	Prestige/Image of the Profession	3.99	3.61	3.93
	Influence of Friends and Family Members	3.10	2.81	3.05
	Reputation of the Degree Program	3.87	3.98	3.89

Table 4. Importance of the Factors Impacting Students’ Choice of Majors

5.3. Information Sources for the Majors

After understanding important factors to students’ choice of major, it would be very helpful to know where students received information about their majors. In the questionnaire, the respondents were asked to rate the importance of information sources to their career choice on a five-point scale of importance. The statistical means of the responses were illustrated in Table 5.

Major-related courses and the Internet were the two most important information sources to the respondents, especially for MIS students. The skill-based introductory MIS course is the first MIS course that general students are required to take, but the content of this course is not a good representation of the MIS program. Hosting an information session about the MIS program in this course would help general students better understand the MIS major and form a positive attitude towards the major.

Information Sources	General Students	MIS Students	Overall
Information from Major-related Courses	3.31	3.61	3.36
Information from Internet/Web	3.23	3.33	3.25
Information from friends and family members	3.22	2.63	3.12
Job Listings (online/classified Ads)	2.94	3.00	2.95
Discussion with fellow students	2.59	2.26	2.53
Career Counsellor or Academic Advisor	2.54	2.00	2.47
Presentations by Alumni/Guest Speakers	2.39	2.14	2.35

Table 5. Importance of the Information Sources to Participants’ Choice of Major

Note: Sample size is 287, which included all participants.

5.4. Students’ Perceptions of MIS Program

From the phase one study, the researchers discovered that career-related factors and personal interest factors were most important to students’ major choice. In the next step, it would be useful to identify students’ perceptions of the MIS program based on these important factors. Participants were asked to indicate their opinions on several statements about MIS program on a five-point scale ranging from 1 (mostly disagree) to 5 (mostly agree). The statistical means are reported in Table 6.

Students’ Perception of MIS Major	General Students	MIS Student	Overall
MIS graduates have good and well-paid jobs	4.10	4.41	4.15
MIS Jobs are stable and fast growing	4.05	4.55	4.13
MIS seems easy to study and to graduate with	3.24	3.11	3.22
MIS major/jobs sounded interesting and cool	3.81	4.38	3.91

Table 6. Participants’ Perception of MIS Major

Note: Sample size is 287, which included all participants.

The data showed that, in general, students had positive perceptions about the MIS program and they did not think MIS was an easy subject. However, easiness of subject was not an important factor for student’s career choice. The respondents who chose the MIS major clearly held strong beliefs about MIS in terms of job and career prospects and their own personal interest in the subject matter. The results indicated that there is a good student base to promote the MIS program as a major or minor: the participants already held positive attitudes about the subject matter and post-graduation job opportunities – two most important factors for students’ choice of major.

5.5. Promoting MIS Program to Undergraduate Students

Phase two of this study was to empirically validate the effectiveness of the promotion strategy. The research findings are summarized in Table 7 and Table 8.

As shown in Table 6, the treatment group was not significantly different from the control group in terms of their perceptions of the MIS program in the pre-study survey. Thus, there was no embedded bias towards MIS program between the two groups at the beginning of the study.

The researchers then compared participants' perceptions of IS major in pre- and post-study survey. For the control group, the respondents' perceptions of the MIS program changed only a little (none were found significant at $p=0.05$ level). However, for the treatment group, respondents in the post-study survey rated the IS program more positively on three aspects: job salary, job security, and easiness of the program (all significant at $p=0.05$ level). In terms of personal interests, no significant changes were found between pre- and post-study. Salary and job security were students' top considerations when they select their majors, thus the researchers concluded that the promotion strategy used in this study indeed nurtured a more favorable perception of IS program among the treatment group. Thus, hypothesis one was supported.

Student Perceptions	Treatment Group			Control Group		
	Pre-study	Post-study	P value	Pre-study	Post-study	P value
MIS graduates have good and well-paid jobs	4.00	4.34	0.03	4.14	4.04	0.57
MIS Jobs are stable and fast growing	3.94	4.33	0.01	4.18	3.89	0.17
MIS seems easy to study and to graduate with	3.27	3.91	0.00	3.57	3.57	0.98
MIS major/jobs sounded interesting and cool	3.83	3.96	0.37	4.12	3.74	0.08

Table 7. Comparison of Participants' Perception of MIS Program

Note: 1) The treatment group had 90 responses and the control group had 61 responses. The number of participants was based on the pre-study. The numbers of participants are slightly different between pre-study and post-study since the participation was voluntary. 2) Two-sample assuming unequal variances and two-tail t-test is used in this study.

Table 8 shows participants' attitudes when they were asked how likely they are to select MIS program as their major or minor. The participants in the treatment group were more likely to select MIS as major than their counterparts in the control group. But, at the same time the situation held true for the "not likely" category. If the participants did not know much about the MIS program (control group) then they tended to stay on neutral ground. If the participants (treatment group) have a better understanding of the MIS

program, they are more certain on whether they like MIS program or not. When considering minors, respondents in the treatment group were clearly more likely to select MIS program as their minor than respondents in the control group.

Likelihood	Selecting/switching to MIS major		Selecting MIS as minor	
	Treatment group	Control group	Treatment group	Control group
Likely	31.3%	28.1%	37.5%	28.1%
Neutral	18.8%	28.1%	31.3%	31.3%
Not Likely	50.0%	43.8%	31.3%	40.3%

Table 8. Participants' Likelihood of Selecting MIS as Major/Minor

Note: The participants were drawn from study period 2. Control group has sample size of 34 and treatment group has sample size of 32.

To better understand this phenomenon, the researchers separated the samples by the participants' majors and analyzed the participants' likelihood of switching to a MIS major. As illustrated in Table 9, if students have already chosen their major, they usually remain in their major. The only exception to the rule was in the case of those students who chose a general business major. In the participating university, when students did not know which major to choose, they often selected general business as their major. The information session on IS and the IS course itself certainly helped those students to make a decision.

Major	Sample size	Likely	Neutral	Unlikely
Accounting	12	16.7%	33.3%	50.0%
Finance	8	12.5%	25.0%	62.5%
Marketing	12	25.5%	25.0%	50.0%
Management	14	28.6%	28.6%	42.9%
General Business	12	42.2%	8.3%	50.0%
Average	58	25.9%	24.1%	50.0%

Table 9. Participants' Possibility of Selecting/Switching to IS Major

In summary, holding an information session about the MIS program increased the percentage of participants who would be more likely to switch to the program. However, such an increase is not statistically significant. Thus, the second hypothesis was not supported. More research is needed to study how to convert students' positive perception into an action of switching to or selecting MIS program as their major.

6. CONCLUSION AND DISCUSSION

In this paper, we conducted a comprehensive study on promoting an MIS program to undergraduate students. The main contribution of this study falls into three areas. First, to the best of the authors' knowledge, this study is the first one that implemented an MIS major promotion strategy based on survey findings and empirically tested its effectiveness. The research findings demonstrated that the proposed strategy

could stimulate students' favorable perceptions towards the MIS program. Second, this study validated the findings of Walstrom et al. (2008) and generalized their results by applying to a different academic setting. Third, the research method used in this paper (understanding the problem, developing and implementing a solution, and testing the solution) could serve as an exemplar to other IS programs or other major fields that are facing enrollment challenges.

The research finding also showed that the participants, in general, seemed to hold a positive perception of IS programs with regard to the interest in subject matters and career opportunities. This finding suggests that these students be amenable to recruitment into an MIS program, if a proper approach is taken.

Another interesting finding was that the promotion strategy used in this study seemed to make the participants more divided in terms of their attitude towards an MIS program. In the treatment group, some participants showed more positive perceptions about the MIS program after the study, while other participants became more convinced that MIS program was not their choices. Such phenomena had two implications: 1) The information about MIS programs needed to be effectively constructed before releasing to the targeted audiences; 2) MIS programs should focus on the students who showed favorable perception towards an MIS program and developed an effective strategy to attract those students to the MIS major.

There were a few limitations in this research. In phase two of the study, the researchers purposefully chose a skill-based MIS course to recruit participants for the study. Such approach greatly reduced the impact of potential mediating variables such as content of the course and the instructor's teaching style. However, limiting the subject pool caused the sample size of the control group to be relatively small (61) which could impact the generalizability of the result. Another limitation was that the respondents in the pre-study group and the post-study group were slightly different because their participation was voluntary. However, the impact of this is limited since both groups were drawn from the same class section.

The research findings indicated that the students who have positive perceptions after the information session did not lead to more willingness of claiming or switching to the MIS major. Such phenomena could be caused by a number of reasons: students may need more time to evaluate the MIS program; students may need more promotional activities to be convinced; or students simply want to stay in their current majors even though they recognized the benefits of MIS program. In the future studies, the researchers would like to investigate the strategies on how to convert students' positive perceptions about MIS program into the actions of actually switching their majors.

This research can also be extended to learn more about the sources where students gain information about their majors. In this study, the researchers identified those information sources and used the top two ranked sources to design and develop an MIS program promotion strategy. The participants may obtain information from the sources other than those listed in the survey. The researchers plan to use questionnaires containing open-ended questions, interviews, or focus groups to investigate this phenomenon in future studies.

7. REFERENCES

- Brooks, N., Korzaan, M., & Ceccucci, W. (2014). A Preliminary Comparison of Student and Professional Motivations for Choosing Information Systems. *Information Systems Education Journal*, 12(4), 49-55.
- Burns, T. J., Gao, Y., Sherman, C., Vengerov, A., & Klein, S. (2014). Investigating a 21st Century Paradox: As the Demand for Technology Jobs Increases Why Are Fewer Students Majoring in Information Systems? *Information Systems Education Journal*, 12(4), 4-16.
- Byrnes, N. (2005, January 9). Green Eyeshades Never Looked So Sexy. *BusinessWeek: Magazine*. Retrieved on August 30, 2014, from <http://www.businessweek.com/stories/2005-01-09/green-eyeshades-never-looked-so-sexy>
- Congdon-Hohman, J., Nathan, A., & Svec, J. (2013). Student Uncertainty and Major Choice (Working Paper No. 1301). College of the Holy Cross, Department of Economics. Retrieved August 30, 2014, from <http://ideas.repec.org/p/hcx/wpaper/1301.html>
- Downey, J. P., McGaughey, R., & Roach, D. (2011). Attitudes and Influences toward Choosing a Business Major: The Case of Information Systems. *Journal of Information Technology Education*, 10, 231-251.
- Ferratt, T. W., Hall, S., Prasad, J., & Wynn, D., Jr. (2010). Choosing Management Information Systems as a Major: Understanding the smiFactors for MIS. *Communications of the Association for Information Systems*, 27(1).
- Francisco, W. H., Noland, T. G., & Kelly, J. A. (2003). Why Don't Students Major in Accounting? *Southern Business Review*, 29(1), 37-40.
- Frankel, D. S. (2008). Danger: MIS Schools in Decline. *MDA Journal* [Online], Available www.bptrends.com/publicationfiles/09-08-COL-MDA%20Journal-%20MIS%20Schools-Frankel%20v01-00-final.pdf.
- Galotti, K. M. & Kozberg, S. F. (1987). Older Adolescents' Thinking about Academic/Vocational and Interpersonal Commitments. *Journal of Youth and Adolescence*, 16(4), 313-330.
- Hogan, P. & Li, L. (2010). The Perceptions of Business Students Regarding Management Information Systems (MIS) Programs. *Journal of Technology Research*, 2, 1-8.
- Kuechler, W. L., McLeod, A., & Simkin, M. G. (2009). Why Don't More Students Major in IS? *Decision Science Journal of Innovative Education*, 7(2), 463-488.
- Kumar, A. & Kumar, P. (2013). An Examination of Factors Influencing Students Selection of Business Majors Using TRA Framework. *Decision Sciences Journal of Innovative Education*, 11(1), 77-105.
- Li, L. & Thomson, N. (2011). Why Business Students Select MIS as Their Major - An Empirical Examination. Proceedings of Southern Association of Information Systems Conference (SAIS 2011), October 23-24, Atlanta, GA.
- Mathiyalakan, S., Heilman, G. E., & White, S. (2012). An Examination of Computer Anxiety in Business School Students. *Review of Business Research*, 12(2), 118-123.
- Pollacia, L. F. & Lomerson, W. (2006). Analysis of Factors Affecting Declining CIS Enrollment. *Issues in Information Systems*, 7(1), 220-225.

- Rouibah, K. (2012). Understanding Student Drivers and Obstacles toward MIS Major from the Perspective of an Arab Country: The Case of Kuwait. *Issues in Information Systems*, 13(2), 58–71.
- Saunders, G. & Lockridge, T. M. (2011). Declining MIS Enrollment: The Death of The MIS Degree? *Contemporary Issues in Education Research (CIER)*, 4(1), 15–26.
- Simons, K. A., Lowe, D. R., & Stout, D. E. (2003). Comprehensive Literature Review: Factors Influencing Choice of Accounting as a Major. *Academy of Business Education Conference*, Volume 4.
- Walstrom, K. A., Schambach, T. P., Jones, K. T., & Crampton, W. J. (2008). Why Are Students Not Majoring in Information Systems? *Journal of Information Systems Education*, 19(1), 43–54.
- Wiswall, M. & Zafar, B. (2011). Determinants of College Major Choice: Identification Using an Information Experiment (Staff Reports No. 500). *Federal Reserve Bank of New York*. Retrieved August 30, 2014, from <http://ideas.repec.org/p/fip/fednstr/500.html>
- Zhang, W. (2007). Why IS: Understanding Undergraduate Students' Intentions to Choose an Information Systems Major. *Journal of Information Systems Education*, 18(4), 447–458.

Guangzhi Zheng is an Assistant Professor of Information



Technology in the School of Computing and Software Engineering at Southern Polytechnic State University. He received his Ph.D. in Computer Information Systems from Georgia State University. His current research interests include business intelligence, information visualization, and IT education. He is a member of Association

for Information Systems (AIS) and ACM-SIGITE. His research has appeared in the AIS Transactions on HCI, Journal of Systems and Software, and Journal of Information Technology.

AUTHOR BIOGRAPHIES

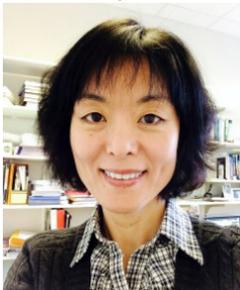
Lei Li is an Associate Professor of IT in the School of



Computing and Software Engineering at Southern Polytechnic State University where he teaches graduate and undergraduates courses in Information Technology. His research has appeared in the Journal of Information Systems Education, Journal of Systems and Software, Journal of Universal Computer Science, The

Academy of Information and Management Sciences Journal, Journal of Learning and Higher Education, and Journal of Technology Research.

Chi Zhang is an Assistant Professor of Information



Technology in the School of Computing and Software Engineering at Southern Polytechnic State University. She holds degrees in Computer Science and Instructional Technology and a PhD in Information Technology from the University of Nebraska. She is a certified professional in healthcare information &

management systems (CPHIMS). Her current research interests include health information technology and electronic health record system adoption & implementation, business intelligence in healthcare, usability evaluation, and IT education.



No matter how sophisticated the technology, it still takes people!™



STATEMENT OF PEER REVIEW INTEGRITY

All papers published in the Journal of Information Systems Education have undergone rigorous peer review. This includes an initial editor screening and double-blind refereeing by three or more expert referees.

Copyright ©2014 by the Education Special Interest Group (EDSIG) of the Association of Information Technology Professionals. Permission to make digital or hard copies of all or part of this journal for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial use. All copies must bear this notice and full citation. Permission from the Editor is required to post to servers, redistribute to lists, or utilize in a for-profit or commercial use. Permission requests should be sent to Dr. Lee Freeman, Editor-in-Chief, Journal of Information Systems Education, 19000 Hubbard Drive, College of Business, University of Michigan-Dearborn, Dearborn, MI 48128.

ISSN 1055-3096