

Factors Influencing General Educational Course Selection among Chulalongkorn
University Students

Natchaya Pituckwanitudom

Monditz Lertamornthep

Sojirat Janyame

Senior Project Submitted in Partial Fulfillment of the Requirements

for the Degree of Bachelor of Science in Psychological Science

Faculty of Psychology

Chulalongkorn University

Academic Year 2015

Senior Project Title Factors Influencing General Educational Course Selection among
Chulalongkorn University Students

Authors 1. Natchaya Pituckwanitudom
 2. Monditz Lertamornthep
 3. Sojirat Janyame

Field of Study Psychological Science

Senior Project Advisor Dr. Apitchaya Chaiwutikornwanich

This senior project is accepted by the Faculty of Psychology, Chulalongkorn University in partial fulfillment of the requirements for the Bachelor of Science degree (Psychological Science).

.....
Dean of the Faculty of Psychology
(Assistant Professor Dr. Kakanang Maneesri)

Senior project committee

..... Chairperson
(Dr. Panrapee Suttiwan)

..... Advisor
(Dr. Apitchaya Chaiwutikornwanich)

..... Committee
(Dr. Thipnapa Huansuriya)

5537561838 , 5537571038, 5537578538 : BACHELOR OF SCIENCE

KEYWORDS : COURSE SELECTION / INTRINSIC / EXTRINSIC / GRADES / SOCIAL INFLUENCE / ENJOYMENT AND SATISFACTION / APPLICABILITY

NATCHAYA PITUCKWANITUDOM : MONDITZ LERTAMORNTHAP : SOJIRAT JAMYAME : FACTORS INFLUENCING GENERAL EDUCATIONAL COURSE SELECTION AMONG CHULALONGKORN UNIVERSITY STUDENTS,
ADVISOR: DR. APITCHAYA CHAIWUTIKORNWANICH, 51 pp.

Abstract

This study was conducted to explore the influence of academic motivation (extrinsic, intrinsic) according to the motivation continuum on students' general education course (GenEd). The four factors influencing students' course selection were categorized as either intrinsic or extrinsic factor academic motivation. It was hypothesized that intrinsically motivated students would value intrinsic factors (applicability and enjoyment and satisfaction) and extrinsic factors (grades and social influence) differently. Likewise, extrinsically motivated students would value extrinsic factors and intrinsic factors differently. A total of 89 international program undergraduate students (29 males and 60 females) from Chulalongkorn University were randomly recruited to complete the questionnaire. Repeated measures ANOVA and follow-up t-test were used to analysis the main data. The results indicated that intrinsically and extrinsically motivated participants valued both types of factors differently. Intrinsic participants ranked enjoyment and satisfaction the highest, while valuing grades, applicability, and social influence at a similar level. Extrinsic participants valued applicability the least, while social influence, grades and enjoyment and satisfaction are in a comparable level. Moreover, the additional analyses were conducted to further examine whether the extreme scores data would produce any novel results.

Field of Study: Psychological Science

Student's Signature _____

Academic Year: 2015

Student's Signature _____

Student's Signature _____

Advisor's Signature _____

Acknowledgements

We would like to express our gratitude for everyone who contributed making this project possible. First, we would like to thank our advisor, Dr. Apitchaya Chaiwutikornwanich, for guiding us and working with us throughout all our difficulties giving us encouragement and motivation throughout the whole project. We would like to thank her for understanding our situation making it possible for the project to be conducted in a short amount of time by pointing out our flaws, giving us advice and suggestions on how to improve our project. Thank you very much for making time for us even in your busy schedule and we appreciate the support you have given us.

We would like to extend our gratitude to Dr. Jason Ludington, Dr. Nattasuda Taephant, Instructor Sakkaphat Ngarmake, and Instructor Suphasiree Chantavarin for further advice and guidance on our this project. Thank you for all the support, time, and helpful feedback you have given us. Additionally, we would also like to give our gratitude to all the lecturers and professor throughout our academic journey. Thank you for all for all the knowledge and skills that you have imparted on us if not for your teachings and support this would not have been possible.

Finally, we would like to express our gratitude to our families and friends for their constant support, patience, and encouragement. Thank you for helping us through stressful times, encouraging and keeping us motivated to work hard and see it through until the end of this project.

Natchaya Pituckwanitudom

Monditz Lertamornthep

Sojirat Janyame

Table of Contents

Abstract.....	ii
Acknowledgement.....	iv
List of Tables.....	vii
List of Figures.....	ix
Chapter 1: Introduction.....	1
Literature Review.....	3
Research Hypotheses.....	15
Operational Definition.....	15
Chapter 2: Methodology.....	17
Participants.....	17
Measurements.....	17
Data Collection.....	19
Statistically Analysis.....	19
Chapter 3: Results.....	21
Descriptive Analysis.....	21
ANOVA and follow-up.....	23
Independent t-test for MSI.....	26
Additional Results.....	27
Chapter 4: Discussion.....	33
Implication.....	39

Evaluation.....	40
Future Research.....	41
Conclusion.....	41
References.....	43
Appendix A: Measure of Academic Motivation (MAM).....	48
Appendix B: Measure of Social Influence Scale (MSI).....	49
Appendix C: Ranking Scale.....	50
Bibliography.....	51

List of Tables

Table 1. Comparison of Academic Motivation Measures.....	12
Table 2. Sample Items and Scoring of the Measure of Academic Motivation Scale.....	18
Table 3. Demographic Descriptive Data.....	22
Table 4. One-way repeated measure ANOVA results for each comparison between the values of course selection and types of students.....	23
Table 5. Paired sample t-test for extrinsically motivated people up to 50 percent on total MAM score.....	24
Table 6. Descriptive statistics for extrinsically motivated people at lowest 50 percent on total MAM score.....	24
Table 7. Paired sample t-test for intrinsically motivated people up to 50 percent on total MAM score.....	25
Table 8. Descriptive statistics for intrinsically motivated people up to 50 percent on total MAM score.....	26
Table 9. Descriptive statistics for intrinsically and extrinsically motivated people on total informational social influence and normative social influence score in MSI scale.....	27
Table 10. Paired sample t-test for extrinsically motivated people at lowest 25 percent on total MAM score.....	28
Table 11. Descriptive statistic for extrinsically motivated people at lowest 25 percent on total MAM score.....	28

Table 12. Paired sample t-test for intrinsically motivated people at highest 25 percent on total MAM score.....29

Table 13. Descriptive statistic for intrinsically motivated people at highest 25 percent on total MAM score.....30

Table 14. Paired sample t-test for extremely extrinsically motivated people lowest 25 percent of MAM and extremely intrinsically motivated people highest 25 percent of MAM.....31

Table 15. Descriptive statistic for extremely extrinsically motivated people lowest 25 percent of MAM and extremely intrinsically motivated people highest 25 percent of MAM.....31

List of Figures

<i>Figure 1.</i> A subscale of an academic motivation on a continuum of increasing self-determination.....	4
<i>Figure 2.</i> The conceptual framework for the current study.....	15

Chapter 1

Rationale

In the beginning of every semester Chulalongkorn University students must register for their courses online. Students usually pay less attention when enrolling into their core subjects since they know that their spots are secured. Instead, they often emphasize on the registration of their elective courses, or the general education (GenEd) courses. These courses allow students to broaden their knowledge beyond their majors to reflect upon one's interests and skills (Limpisuree, 2009). Moreover, some GenEd courses are more popular among students and tend to be filled faster as compared to the others. Even when these popular courses are full, students tend to request for extra spots, regardless of the complicated process for registration. This includes filling in the paperwork and getting approval from the faculties. Therefore, it is interesting to explore the reasons behind students' GenEd selection and what motivate them to decide which courses to enroll. Hence, this study will examine the mechanisms behind the students' choices.

In the field of educational and social psychology, previous research has investigated the relationship between the decision-making process and selecting majors in higher education. They often focused on the western perspectives, or the individualistic cultures (Hedges, Pacheco, & Webber, 2014). Although the decision-making process is universal, cross-cultural studies found that there are cultural differences in cognitive styles with regards to the process of decision-making (Mann, 1998; Radford, Mann, Ohta, & Nakane, 1993). Thus, this present study would also like to explore the process of selecting courses from the eastern perspectives, or in the collectivistic culture.

According to past research, factors associated with selecting GenEd courses in individualistic cultures involves academic motivation (intrinsic and extrinsic) and module characteristics (Hedges, Pacheco, & Webber, 2014). With regards to decision-making, an individualistic person would focus on the self, which includes his or her personal attributes and personality (Caleon, Wui, Tan, Chiam, Soon, & King, 2015; Radford, Mann, Ohta, & Nakane, 1993). Therefore, as the current study will be conducted in Thailand, the researchers have attempted to adapt the associated factors from Hedges and colleague (2014). The rationale behind this modification is due to the fact that collectivist cultures value groups and significant others when making decisions. They would consider their social groups and would seek for advice from the significant others (Radford, Mann, Ohta, & Nakane, 1993). As a result, social value is a reasonable variable to explore in a collectivistic culture like Thailand than the module characteristics variable studied by Hedges and colleague (2014).

Previous researchers also found that social influence plays an important role in decision-making (Clark, Scafidi & Swinton, 2011; Germar, Schlemmer, Krug, Voss, & Mojzisch, 2014; Zare-ee & Sherey, 2010), especially in course selection (Babad, Darley & Kaplowitz, 1999). The concept of social influence can be divided into two types. First, normative social influence, which is when one is vulnerable to be impacted and concern about the harmony of oneself to the group (Li, 2013). Second, informational social influence is used when the obtained information is beneficial to assist the decision-making process (Hsu & Lin, 2008; Li, 2013). For example, receiving information from others would help the students to decide whether to enroll in particular courses. As a consequence, it can be assumed that people in collectivist cultures may be susceptible to social influence.

Moreover, a search in the literature revealed that studies in academic motivation has been developed and validated in the individualistic cultures, but there are insufficient evidence for collectivistic cultures (Osei Akoto, 2014). Many studies showed that academic motivation is an important factor related to learning and achievement. Rusillo and Arias (2004) mentioned that analyzing academic motivation is essential as it has a significant impact on learning. However, less attention was given to why students select particular courses (Brown & Kosovich, 2015), especially those in the collectivist cultures. Hence, it is essential to study this application in a collectivist educational context.

The present study hopes to explore the rationale behind course selection in collectivistic culture in terms of academic motivation and other related factors (enjoyment & satisfaction, applicability, grades, and social influence), which underlie course selection. Additionally, this study hope to assist universities in understanding the reasons behind the high demand of certain courses by exploring why students favor some courses more than the others.

Literature Review

Academic Motivation

Definition. According to Vallerand and Bissonnette (1992), motivation is understood to be the underlying “why” of behavior or the reason people perform different actions. Academic motivation explains the students’ desire that encourage them to approach their educational paths (Vallerand, Pelletier, Blais, Briere, Senecal & Vallieres, 1992).

Theoretical background. Historically, researchers had studied what motivates people to behave in certain ways (Ryan, 1982). One of the earliest researchers to explore behavior and motivation was Skinner (1953), where he proposed his theory of operant conditioning (as cited in

Ryan & Deci, 2000b). Skinner’s operant conditioning theory described that extrinsically motivated behaviors are influenced solely by rewards, such as food or money (Skinner, 1953 as cited in Ryan & Deci, 2000b). On the other hand, intrinsically motivated people are motivated internally by the task itself rather than the external rewards. Ryan and Deci (2000b) believed that reward alone could not motivate people to act in certain ways. Thus, they developed the self-determination theory (SDT), which is a macro theory of human motivation. Self-determination is described as the sense of control that one feels when they can initiate and control their own actions. The theory explains the motivation behind one’s behaviors originated from different goals and reasons that give rise to different actions (Ryan & Deci, 2000a).

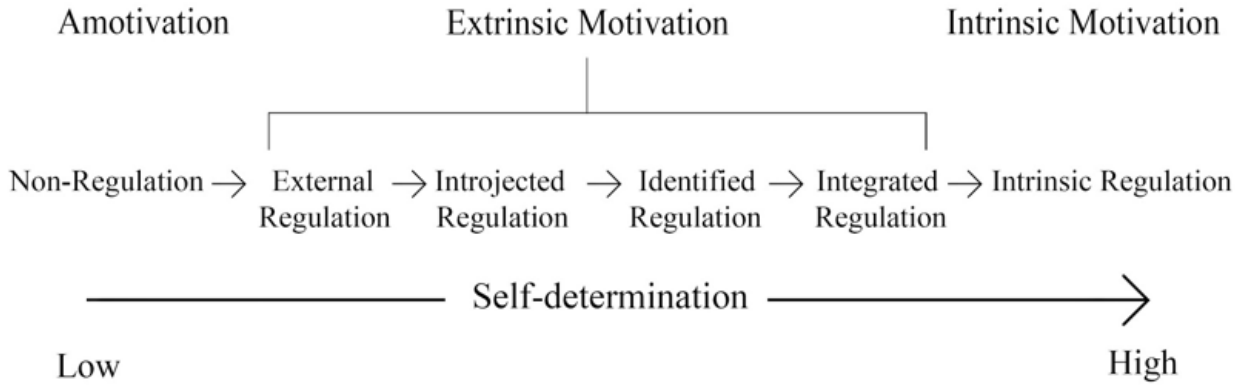


Figure 1. A subscale of an academic motivation on a continuum of increasing self-determination

The belief that people have different approaches and motives to reach the same outcome is studied from the academic motivation continuum, which is broken up into three main types: amotivation, extrinsic motivation, and intrinsic motivation (Deci & Ryan, 1985). Based on Figure 1, the lowest point of the motivation continuum is amotivation or no motivation. Amotivated people believe that the outcome of their actions is out of their control (Ryan & Deci,

2000a). Next, extrinsic motivation is divided into four different categories: external regulation, introjection, identification, and integrated regulation (Caleon et al., 2015; Deci & Ryan, 1985). People who are extrinsically motivated often pursue an activity from the sense of obligation or rewards. The final motivation is intrinsic, which is when people are engaged in an activity for satisfaction or pleasure in performing the actions (Ryan & Deci, 2000a).

Components. There are three types involved in academic motivation (amotivation, extrinsic, and intrinsic motivation) as mentioned previously (Deci & Ryan, 1985). Each component will be discussed in detail under its headings.

Amotivation

Definition. Amotivation is the lack of intention to behave due to the inability to appreciate the value of the activity or its outcome (Caleon et al., 2015; Ryan & Deci, 2000b). It is the contrary of both intrinsic and extrinsic motivation. An example for this would be students asking themselves why they go to school. In this case, amotivation may eventually lead the students to stop attending school (Vallerand & Bissonnette, 1992).

In the context of this present study, amotivation does not fit with what the study is measuring. Amotivation does not seek to explain why people select certain classes, but it is used to mainly describe why students have poor achievement in their studies (Deci, Vallerand, Pelletier, & Ryan, 1991), or why they decided to drop out in school (Vallerand & Bissonnette, 1992). These however, are not the focus of this present study.

Extrinsic Motivation

Definition. Various studies have attempted to define the term extrinsic motivation. One definition is the goals for the behaviors are beyond the inherent in the activity itself (Vallerand & Bissonnette, 1992). In addition, Ryan and Deci (2000b) described extrinsic motivation as an activity done to achieve separate outcomes, and that it reflects the external control or true self-regulation. Hedges, Pacheco, and Webber (2014) also explained that motivation derive from the outside of the self. The factors that motivate individuals are the expectation of the external rewards or seeking for approval from the others.

Theoretical background. As mentioned earlier, extrinsic motivation originated from Skinner's (1953) operant conditioning. Previously, extrinsic motivation was believed to be actions that were conducted in the absence of self-determination, and can also only be motivated by external contingencies (Vallerand & Bissonnette, 1992). Nevertheless, researchers proposed that there is more than one type of extrinsic motivation, which are classified by the different types of self-determination, and can perhaps be performed through self-regulation (Deci & Ryan, 1985, 1987; Ryan & Connell, 1989).

Components. The organismic integration theory is a sub-theory developed to explain different types of extrinsic motivation (Deci & Ryan, 1985). As illustrated in Figure 1, the theory divides extrinsic motivation into four different categories: external regulation, introjection, identification, integrated regulation (Caleon et al., 2015; Deci & Ryan, 1985).

External Regulation. The occurrence of the conducted behavior is externally regulated. The reason for the behavior lies outside the activity itself (Vallerand & Bissonnette, 1992); for instance, rewards, prizes, money, or even a threat of punishment (Osei Akoto, 2014). An

example of this behavior is when a student seeks for the teacher's praise once he or she completed the assignment (Deci et al., 1991). Another case would be doing the assignment to avoid any negative results, such as getting criticized from the teacher (Vallerand & Bissonnette, 1992).

Introjection. At this phase, individual starts to internalize the rationale behind his or her actions, but it is not considered as self-determination (Osei Akoto, 2014). This is because introjected regulation involves coercion or seduction, which does not lead to genuine choice. A student trying to avoid feeling bad by being punctual and going to class on time is an example of being regulated by introjection. Punctuality in this case is not by choice since the individual has not identified with the regulation. It is only the beliefs and controls that are internalized. Consequently, this is not yet considered as part of the self (Deci et al., 1991).

Identification. This regulation occurs when the individual values and chooses the behaviour by oneself (Vallerand & Bissonnette, 1992). The behaviour includes one experiencing a sense of choice in one's own action (Deci et al., 1991). For example, some Thai students choose to do extra work, such as reading more English books, because they believe that it will eventually improve their English skills. The behavior was chosen for the instrumentality to enhance their performances. Thus, this is considered as an extrinsic type of motivation because it did not derive from one's own interests (Deci et al., 1991). However, this phase is nevertheless self-determined (Vallerand & Bissonnette, 1992).

Integrated Regulation. Integrated regulation is the highest level of self-determination within the range of extrinsic motivation (Deci & Ryan, 1985), and also the most autonomous type of extrinsic motivation. Self-regulation is found to be consistent with the sense of self as

one conducted the behavior willingly. The individual performs the behavior with enthusiasm. At this stage, the regulation emphasizes on how the chosen behavior shapes into the individual's activities and goals. The integration occurs because there is harmony between behavior and other facets of the individual. An example would be when a student gives up some time of the favorite hobby to study for the exam, which is not his or her desirable activity. This example explains integrated regulation because it allows intrinsic motivation to interplay, since both types of motivations are autonomous self-regulation (Vallerand & Bissonnette, 1992). However, integrated regulation and intrinsic motivation are somewhat different. Integrated regulation refers to when the activity is important for valued outcomes of an individual (Deci et al., 1991), whereas intrinsic motivation will be defined in the following section.

Intrinsic Motivation

Definition. An intrinsic form of motivation can be noticed since early childhood when children are active, curious, playful, and seek new knowledge in the absence of rewards (Harter, 1978; Ryan & Deci, 2000a). Intrinsic motivation is explained as the desire to seek new things and challenges while observing and analyzing one's capacity to gain new knowledge (Ryan, & Deci, 2000a). It is formed internally by the individual and is often driven by the interest and enjoyment of the task rather than relying on external sources for motivation and rewards (Ryan, & Deci, 2000b). The idea of intrinsic motivation is built upon the natural tendency of humans towards assimilation, mastery, exploration, and development of interest that is essential towards the cognitive, physical, and social development of people (Ryan, 1995).

Theoretical background. The SDT developed by Ryan and Deci (2000b) was one of the first theories to explore intrinsic motivation. Cognitive evaluation theory (CET) is a sub-theory

of SDT, which seeks to explain the variability in the factors involved in intrinsic motivation. The CET states that interpersonal events and structures, such as rewards, communication, and feedback would bring about the feeling of competence. However, these feelings are only maintained if the person has an internal perceived locus of causality (Charms, 1968 as cited in Ryan & Deci, 2000b), which is when an individual can control their own action. This led to the development of intrinsic motivation starting from the study of reward from Skinner operant conditioning into understanding the feedback and other external events through the SDT and CET, thus forming into the concept of intrinsic motivation.

Components. According to Deci and Ryan (1985), intrinsic motivation is the single factor on the motivation continuum unlike extrinsic motivation, which is broken up into four different components on the motivation continuum. However, Deci (1985) proposed that although it remains as one component on the motivation continuum, intrinsic motivation can be subdivided into three specific motives, which are intrinsic motivation to know (IM-to know), intrinsic motivation toward accomplishments (IM-to accomplish), and intrinsic motivation to experience stimulation (IM-to experience).

Intrinsic motivation to know. IM-to know is considered to be one of the most studied motive of intrinsic motivation in educational psychology (Vallerand et al., 1992). This component of intrinsic motivation deals with constructs such as exploration, curiosity, learning goals, and intrinsic motivation to learn (Harter, 1981). IM-to know deals with the revolving need to know and understand, and the need to search for meaning (Vallerand et al., 1992). Overall, IM-to know can be explained as actions conducted for the pleasure or satisfaction present during learning or exploring new knowledge or experiences.

Intrinsic motivation toward accomplishments. IM-to accomplish is studied by developmental and educational psychologist based on the main concept of mastery motivation (Harter, 1981). Individual with IM-to accomplish interact with their surroundings in order to feel competent about themselves and to attempt to accomplish something. They would focus more on the process of achieving rather than the outcome of the action (Deci & Ryan, 1985). Therefore, IM-to accomplish can be explained as actions conducted for the pleasure or satisfaction present when one attempts to create or accomplish something.

Intrinsic motivation to experience stimulation. IM-to experience is when a person engages in an activity in order to experience stimulating sensations, such as fun, excitement, and positive sensations. These people would be stimulated and feel excitement and passion towards interesting readings or discussions (Vallerand et al., 1992). Thus, IM-to experience can be defined as actions conducted for the pleasure or satisfaction present when one engages in stimulating reading or discussions.

Academic Motivation Scale

The academic motivation scales developed in the past mainly focused on only intrinsic and extrinsic motivation of the academic motivation. In order to gain a deeper understanding to develop a scale suitable for this present study, the Motivated Strategies for Learning Questionnaire (MSLQ) (Pintrich, Smith, Garcia, & McKeachie, 1991), the Questionnaire of Academic Motivation (QAM) (Harter, 1981), and the Academic Motivation Scale (Vallerand et al., 1992) will be examined.

The Motivated Strategies for Learning Questionnaire (MSLQ) is used to test both motivation and learning strategies of college students. The MSLQ was first developed by

Pintrich and McKeachie in the early 1980s. It is one of the earliest questionnaires developed to help college students to improve academically. Pintrich and McKeachie (1991) believe that motivation is linked to student's ability to self-regulate. They also mentioned that motivation varies upon the different classes people take. The MSQAL had an overall reliability of .77, which was greater than the standardized reliability of .70, suggesting that it was a reliable measurement tool. Although the overall reliability reported was greater than the standardized reliability, several researchers criticize that it is unreliable due to the alpha values of the sub-scale being as low as .48 and high as .91 causing the overall reliability to be affected (Pintrich et al., 1993).

Another scale developed by Harter (1981) is the Questionnaire of Academic Motivation (QAM). It is one of the first scales developed to measure Deci and Ryan's (1985) SDT. The questionnaire is broken up into five different subscales (curiosity, incentive, challenge, work ethic, and internal factors). The QAM fits with the format of the motivation continuum from SDT by having the same item worded in both intrinsic and extrinsic motivation (Deci & Ryan, 1985). In addition, QAM has a reliability value of .78 making it a reliable test. However, the QAM test has a low test-retest reliability of .48 to .63 since a majority of the questions have low reliability measure (Harter, 1981).

Furthermore, Vallerand and colleagues (1992) developed a widely used scaled called Academic Motivation Scale (AMS). The scale is divided into seven different subscales that test all the factors in the motivation continuum (Vallerand et al., 1992), which assess college students making it a scale suitable for our use. The seven subscales are IM-to know, IM-to accomplish, IM-to experience, extrinsic motivation identified, extrinsic motivation, introjected, extrinsic motivation external regulation, and amotivation. Additionally, the scale has a high overall

reliability measure of .81 and high test-retest reliability of .79 making it a reliable and valid measurement tool. However, the AMS measures the different components of the motivation continuum in different sub-scales rather than as a continuum that this present study is trying to measure.

Table 1

Comparison of Academic Motivation Measures

Study	Subjects	Measurements	Reliability
Pintrich, Smith, Garcia, and McKeachie (1991)	356 College students	Motivated Strategies for Learning Questionnaire; 81 items	.77 overall reliability with sub-scale reliability ranging from .48 to .91
Harter (1981)	3,000 sixth grade children	Questionnaire of Academic Motivation; 30 items, 5 sub-scale, 3 item measuring intrinsic and 3 extrinsic per subscale	.78 overall reliability .48 to .63 test-retest reliability
Vallerand et al., (1992)	745 university students	Academic Motivation Scale; 28 items, 7 sub-scale	.81 overall reliability .79 test-retest reliability

Course Selection

Course selection can be described as a combination of both academic and personal consideration (Babad & Tayeb, 2003; Pass, Mehta, & Mehta, 2012). It influences students' future by broaden or limiting education and career possibilities in the future (Babad, 2001). Past research found several possible components involved during the process of course selection: students' characteristics (e.g., traits, academic motivation, and skills), situational characteristics (e.g., overall load, workload, location of the classroom, and time), types of information available

to students (e.g., social influences, and formal & informal sources - such as faculty advisors and friends who have already took the course) (Babad, 2001), and course characteristics (for instance, applicability, enjoyment & satisfaction, and grades) (Hedges et al., 2014). According to this study, two major academic motivations were examined. Hence, the following section will discuss the factors of both types of motivation.

Intrinsic Factors

Applicability. There are many ways to describe applicability. In this current study, applicability is considered as an intrinsic factor for course selection. The term applicability in this case is defined as being able to employ and adapt the knowledge obtained from the course to one's daily life and/or future career. Intrinsically motivated people are interested in gaining knowledge just for the pleasure of learning something. They do not have any issues on how difficult the class is (Vallerand et al., 1992). This also includes voluntarily enrolled into certain courses without any kinds of rewards, but for one's own sake or to purely gain knowledge from the course itself (Deci & Ryan, 1985; Pass, Mehta, & Mehta, 2012).

Enjoyment & satisfaction. Enjoyment & satisfaction is one of the major concepts in considering what to study. According to Ryan and Deci (2000b), an intrinsic form of motivation involve an individual being encourage to do things because of their personal interests and enjoyment of the task. Therefore, in this current study, enjoyment & satisfaction is counted as an intrinsic factor for academic motivation. An instance would be an intrinsically motivated student enrolled into a particular course with the hope to learn and enjoy the material with deep understanding (Howorth, 2001).

Extrinsic Factors

Grades. Having the urge to study because one desire to get good grades is categorized as an extrinsic form of motivation. Grades are solely extrinsic motivation as it is based on the external rewards, in which the activity itself may not have provided. Thus, the external rewards of getting good grades is the motivator that drive students to work harder or even to be enrolled in certain course (Hedges et al., 2014).

Social influence. Social influence is the change of a person's behaviors, attitudes, or thoughts that is affected by others in the society to conform the majority's pattern (Li, 2013; Rashotte, 2007). It can be divided into two types: informational social influence and normative social influence. In this study, both types of social influence are considered as an extrinsic factor for academic motivation. Informational social influence is based on the information that one receives from others (Deutsch & Gerard, 1955; Li, 2013), which students may get this influence by obtaining course information from their peers before enrolling the course. While, normative social influence is when an individual conforms and corresponds to others' expectations (Deutsch & Gerard, 1955). For instance, students enroll as same course as their peers in order to conform the group.

Research Objective

To study academic motivation (intrinsic motivation, extrinsic motivation) on course selection factors (enjoyment & satisfaction, applicability, grades, social influence) in international students at Chulalongkorn University.

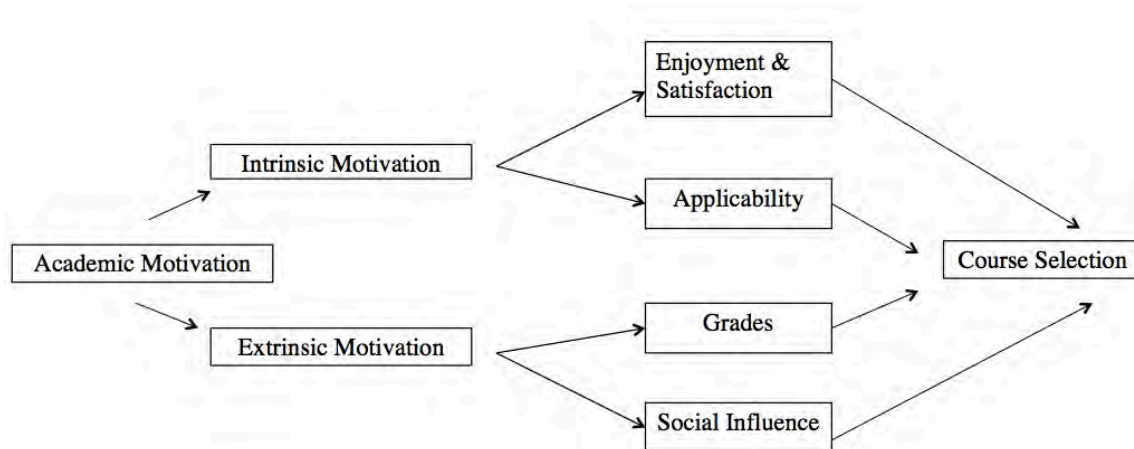


Figure 2. The conceptual framework for the current study

Research Hypotheses

H₁: Intrinsically motivated people will be more likely to value intrinsic factors for course selection greater than extrinsically motivated people.

H₂: Extrinsically motivated people will be more likely to value extrinsic factors for course selection greater than intrinsically motivated people.

Operational Definition

Academic motivation explains the students' desire that encourage them to approach their educational paths (Vallerand et al, 1992). The concept placed students on either extrinsic or intrinsic motivation along the academic motivation continuum regards to course selection. While there are many definitions of academic motivation, in this study academic motivation was measured using the Measure of Academic Motivation (MAM) scale. The scale has its breaking point at 50 percent, meaning that students with highest top 50 percent are classified as intrinsic motivation, while students with low scores, or the bottom 50 percent are extrinsic motivation.

Social influence refers to the change of a person's behaviors, attitudes, or thoughts that is affected by others in the society to conform the majority's pattern (Li, 2013; Rashotte, 2007). Moreover, social influence is divided into two types; normative social influence and informational social influence (Deutsch & Gerard, 1955). In this study, normative social influences refer to the conformation to friends' decisions by enrolling into the same course as participants' friends. While, informational social influence of this study refers to the usage of the obtained course information from friends before deciding which course to enroll.

Chapter 2

Method

Participants

A total of 89 undergraduate students from Chulalongkorn University (M age = 20.21; SD = 1.50), comprising of 60 females and 29 males, were recruited during the final semester of the education year 2015 to 2016. Participants included students in their first up to fourth year of university from every faculty in the international programs.

Measurements

In this study, three different tools of measurements were used:

1. Measure of Academic Motivation (MAM) adapted from the combination of:
 1. Questionnaire of Academic Motivation (QAM) by Harter (1981)
 2. Academic Motivation Scale (AMS) by Vallerand et al. (1992)
2. A novel Ranking of self-value developed for this present study
3. Measure of Social Influence (MSI) adapted from social influence subscales (Li, 2013)

Measure of Academic Motivation. According to Deci and Ryan (1985), different forms of motivation lie on different sections of the motivation continuum. This present study used a combination of Harter (1981) “Questionnaire of Academic Motivation” (QAM) and Vallerand and college (1992) “Academic Motivation Scale” (AMS) to create a revised questionnaire of academic motivation called the “Measure of Academic Motivation” (MAM).

The MAM used the same measurement technique as the QAM to measure academic motivation. Each item was revised and written in both intrinsic and extrinsic pole as given in Table 2 where 1 and 2 represents extrinsic pole of the item and 3 and 4 represents intrinsic pole

of the item. The items in the MAM are first adapted from the QAM using the most reliable items from the questionnaire. Additional items were added in adapted from the AMS by creating either an extrinsic or intrinsic form for the item. In total, the MAM consist of 14-items, seven adapted from the QAM and seven adapted from the AMS.

Table 2

Sample Items and Scoring of the Measure of Academic Motivation Scale

Score		Subscale dimension		Score		
Really true for me	Sort of true for me			Sort of true for me	Really true for me	
4	3	I like interesting courses	vs.	I prefer courses with easy assignments	2	1
1	2	I do not enjoy tasks that are challenging	vs.	I enjoying challenging myself	3	4
4	3	I like learning new things	vs.	I wouldn't mind if the courses have repeated content.	2	1

Measure of Ranking of Self-value. A novel scale called Ranking of Self-value was developed for the present study. For this scale, participants have to rank which factors influencing course selection they value most, ranging from 1 being the most important to 4 being the least important. The factors comprised of enjoyment & satisfaction, applicability, grades and social influence. The scale will be reversed score in order to determine how much participants value each factor.

The ranking of self-value scale was developed to be use instead of a likert scale, due to the predictability that most students would rate all of factors as important. The information received from the likert scale would be skewed from participant's rating of each factor being

important to them. The overall results would not be meaningful or salient. Therefore, the current study decided to implement a ranking scale instead of a likert scale.

Measure of Social Influence. The scale is adapted from Li (2013) called Measure of Social Influence scale (MSI). This scale measures the weight of each type of social influence affecting participants' course selection. The scale ranges from 1 being strongly disagree and 7 being strongly agree. MSI comprised of 2 items; "I always enroll the same courses as my friends", which is a normative social influence, and "I always use or apply information obtained from friends to choose courses to enroll" is classified as an informational social influence.

Data collection

Prior the distribution of the survey, a pilot study was conducted to analyze the reliability of the test. The pilot study was collected through convenience samplings. The paper-and-pencil instrument was distributed to 50 participants around Chulalongkorn University. After the pilot study, the actual data were collected from 100 participants around campus through the same measurements. However, 11 of participants had to be eliminated due to missing data in the questionnaire.

Statistical analysis

The collected data were analyzed using IBM SPSS statistical software on the following statistical methods:

1. Descriptive analysis
2. One-way repeated measure ANOVA
3. Paired sample t-test
4. Independent t-test for MSI

The analysis of the main data set was done using repeated measures ANOVA and the follow-up test was done using paired sample t-test. Participants were divided into two groups by using the sum of the MAM for each participant. In addition to testing intrinsic and extrinsic participants, another analysis was done to examine only people who are extremely intrinsic or extrinsic. This was done by using only the top 25 percent and the lowest 25 percent of the participant's total MAM score. This was performed in order to determine whether there were any significant differences between calculating 50 percent of the participants and 25 percent of the participants for intrinsic and extrinsic motivated participants.

Chapter 3

Results

Descriptive analysis

The demographic information is summarized in Table 3, showing participants' age, gender, year of university and faculty. The sample consisted of a total of 89 participants, 93.26% of the participants are Thai, with an ethnic breakdown of 6.74% and their age ranges between 18-24 years. Participants were mostly females (60 females; 29 males). The data were collected from international programs students in Chulalongkorn University. Moreover, a non-significant difference was found between the participants' years of university and their academic motivation scores.

Table 3
Demographic Descriptive Data

	Demographics	Frequency	Percent
Gender	Male	29	32.58
	Female	60	67.42
	Total	89	100
Races	Thai	83	93.26
	Korean	2	2.25
	Taiwanese	1	1.12
	Indian	3	3.37
	Total	89	100
Year	1	22	24.72
	2	13	14.61
	3	17	19.1
	4	37	41.57
	Total	89	100
Faculty	Psychology (JIPP)	52	58.43
	Arts (BALAC)	6	6.74
	Business (BBA)	4	4.49
	Engineer (ISE)	11	12.36
	Science (BSAC)	4	4.49
	Architecture (INDA/COMMDE)	7	7.87
	Communication arts (COMMART)	2	2.25
	Economy (EBA)	3	3.37
	Total	89	100

Besides, researchers requested additional information from the participants by asking them to suggest any other factors that might influence their choice of GenEd courses. Some suggestions include courses that have easy grading, highly recommended professors who have good teaching style, accessibility of time and location, and quality of course content.

ANOVA and follow-up for extrinsic samples

The one-way repeated measures ANOVA was conducted to compare the effect of extrinsic motivation on the factors influencing course selection (applicability, grades, enjoyment & satisfaction, social influence) measuring participants who scored lowest 50 percent in the total MAM score ($N = 44$). As shown on Table 4, the results from ANOVA indicated that there was a significant difference in values of course selection for extrinsically motivated students, Wilks' Lambda = .81, $F(3, 41) = 3.26$, $p = .03$ $\eta^2 = .19$, accepting the hypothesis.

Table 4

One-way repeated measure ANOVA results for each comparison between the values of course selection and types of students.

	Wilk's Lambda	F	Sig.
Values of course selection X extrinsic students	.81	3.26	.03
Values of course selection X intrinsic students	.68	6.48	.001
Values of course selection X extremely extrinsic students	.48	6.9	.002
Values of course selection X extremely intrinsic students	.54	6.04	.004

As shown in Table 5, six paired sample t-tests were used to make a post hoc comparison between the factors influencing course selection (applicability, enjoyment & satisfaction, grades, social influence), which the descriptive statistic data is summarized in Table 6. First, the paired sample t-test indicated that applicability ($M = 1.96$, $SD = 1.20$) was valued significantly lower than grades ($M = 2.89$, $SD = 1.15$); $t(43) = -3.01$, $p = .004$. However, the second, the paired

sample t-test did not show significant difference between applicability and social influence ($M = 2.61, SD = .92$); $t(43) = -2.34, p = .024$. The third and fourth paired sample t-test also did not show a significant difference when comparing enjoyment & satisfaction ($M = 2.55, SD = 1.02$) with grades; $t(43) = -1.19, p = .241$ and enjoyment & satisfaction with social influence; $t(43) = -.29, p = .776$. The fifth and sixth pair also did not show significant difference at .01 comparing applicability with enjoyment & satisfaction; $t(43) = -2.38, p = .022$ and comparing grades and social influence; $t(43) = 1.26, p = .215$. Therefore, extrinsic samples valued grades, social influence, enjoyment & satisfaction, and applicability, respectively.

Table 5

Paired sample t-test for extrinsically motivated people at lowest 50 percent on total MAM score

	t	df	Sig. (2-tailed)
Applicability - Grades	-3.01	43	.004*
Applicability - Social Influence	-2.34	43	.024
Satisfaction - Grades	-1.19	43	.241
Satisfaction - Social Influence	-.29	43	.776
Satisfaction - Applicability	-2.38	43	.022
Social Influence - Grades	1.23	43	.215

Table 6

Descriptive statistics for extrinsically motivated people at lowest 50 percent on total MAM score

	M	SD
Applicability	1.96	1.20
Enjoyment & satisfaction	2.55	1.02
Grades	2.89	1.15
Social influence	2.61	.92

ANOVA and follow-up for intrinsic samples

Another one-way repeated measures ANOVA was also performed to compare the effect of intrinsic motivation on factors influencing course selection measuring participants who scored top 50 percent in the total MAM score as shown in Table 7 (N = 45). According to Table 4, the ANOVA results revealed a significant difference in values of course selection for intrinsically motivated students, Wilks' Lambda = .68, $F(3, 42) = 6.48$, $p = .001$, $\eta^2 = .32$, accepting the hypothesis.

Table 7

Paired sample t-test for intrinsically motivated people up to 50 percent on total MAM score

	t	df	Sig. (2-tailed)
Applicability - Grade	-.23	44	.823
Applicability - Social Influence	1.06	44	.295
Satisfaction - Grade	2.03	44	.048
Satisfaction - Social Influence	3.98	44	.000*
Satisfaction - Applicability	-2.42	44	.020
Social Influence - Grade	1.68	44	.101

Another six paired sample t-test was conducted as a follow-up to the significant value found in the ANOVA as seen in Table 7, which the descriptive statistic data is summarized in Table 8. The first and second paired sample t-test revealed that there was no significant difference between applicability ($M = 2.42$, $SD = 1.25$) and grades ($M = 2.49$, $SD = 1.08$); $t(44) = -.23$, $p = .823$, and between applicability and social influence ($M = 2.09$, $SD = 1.08$); $t(44) = 1.06$, $p = .295$. While the third paired sample t-test comparing enjoyment & satisfaction ($M = 3.00$, $SD = .88$) and grades also did not show significant difference; $t(44) = 2.03$, $p = .048$.

However, the fourth paired sample t-test showed that people valued enjoyment & satisfaction significantly higher than social influence; $t(44) = 3.98, p < .001$. The fifth paired sample t-test also revealed a significant difference between applicability ($M = 2.42, SD = 1.25$) and enjoyment & satisfaction ($M = 3.00, SD = .88$); $t(44) = -2.42, p = .020$. Finally, the sixth paired sample t-test did not show a significant difference when comparing grades ($M = 2.49, SD = 1.08$) and social influence ($M = 2.09, SD = 1.08$); $t(44) = 1.68, p = .101$. As a result, intrinsic samples valued enjoyment & satisfaction, grades, applicability, and social influence, respectively.

Table 8

Descriptive statistics for intrinsically motivated people up to 50 percent on total MAM score

	M	SD
Applicability	2.42	1.25
Enjoyment & satisfaction	3.00	.88
Grades	2.49	1.08
Social influence	2.09	1.08

Additional results for independent t-test for social influence - MSI

Series of independent t-test was conducted to see whether intrinsically or extrinsically motivated participants would score higher on social influence scales (MSI), which Table 9 showed the descriptive statistic data of this result. The result indicated that there was a significant difference between normative social influences of intrinsically motivated participants ($M = 4.02, SD = 2.03$) and extrinsically motivated participants ($M = 5.00, SD = 1.48$); $t(87) = -2.60, p = 0.11$. However, for informational social influence, there was no significant

difference between intrinsically motivated participants ($M = 4.40$, $SD = 1.83$) and extrinsically motivated participants ($M = 5.30$, $SD = 1.60$); $t(87) = -2.46$, $p = 0.16$.

Table 9

Descriptive statistics for intrinsically and extrinsically motivated people on total informational social influence and normative social influence score in MSI scale

	<i>M</i>	<i>SD</i>
Normative social influence		
Intrinsically motivated people	4.02	2.03
Extrinsically motivated people	5.00	1.48
Informational social influence		
Intrinsically motivated people	4.40	1.83
Extrinsically motivated people	5.30	1.60

Additional result for extremely extrinsic samples

The third one-way repeated measures ANOVA was done to further investigate participants who are extremely extrinsic and had their scores in the lowest 25 percent of the total MAM score ($N = 22$) as displayed in Table 4. The results displayed a significant difference in values of course selection for the extremely extrinsically motivated students, Wilks' Lambda = .48, $F(3, 19) = 6.90$, $p = .002$ $\eta^2 = .52$.

Table 10

Paired sample t-test for extrinsically motivated people at lowest 25 percent on total MAM score

	t	df	Sig. (2-tailed)
Applicability - Grades	-4.18	21	.000*
Applicability - Social Influence	-3.98	21	.001*
Satisfaction - Grades	-1.96	21	.063
Satisfaction - Social Influence	-1.56	21	.134
Satisfaction - Applicability	-2.30	21	.032
Social Influence - Grades	.78	21	.444

Table 11

Descriptive statistic for extrinsically motivated people at lowest 25 percent on total MAM score

	M	SD
Applicability	1.64	.90
Enjoyment & satisfaction	2.36	1.00
Grades	3.14	1.13
Social influence	2.86	.89

To compare the differences between the factors influencing course selection (applicability, enjoyment & satisfaction, grades, social influence), a six paired sample t-test was conducted with a post hoc comparison as a follow-up, which is shown in Table 10 and their descriptive statistic data was shown on Table 11. The first paired indicated that people valued applicability ($M = 1.64$, $SD = .90$) significantly lower when compared to grades ($M = 3.14$, $SD = 1.13$); $t(21) = -4.18$, $p < .001$. While the second paired sample t-test reported that applicability was also found to be valued significantly lower when compared to social influence ($M = 2.86$, $SD = .89$); $t(21) = -3.98$, $p = .001$. Similarly, the third and fourth paired sample t-test showed a

non-significant difference when comparing enjoyment & satisfaction ($M = 2.36$, $SD = 1.00$) with grades; $t(21) = -1.96$, $p = .063$ and when comparing enjoyment & satisfaction with social influence ; $t(21) = -1.56$, $p = .134$. In addition, the fifth and sixth paired sample t-test also displayed no significant difference between applicability and enjoyment & satisfaction; $t(21) = -2.30$, $p = .032$ and when comparing grades with social influence ; $t(21) = .78$, $p = .444$.

Additional result for extremely intrinsic samples

The fourth one-way repeated measures ANOVA was performed to examine people who are extremely intrinsic. This section measured participants who scored at the highest 25 percent in the total MAM score ($N = 24$) as displayed in Table 4. The results displayed that there was a significant difference in values of course selection for the extremely intrinsically motivated students, Wilks' Lambda = .54, $F(3, 21) = 6.04$, $p = .004$ $\eta^2 = .46$.

Table 12

Paired sample t-test for intrinsically motivated people at highest 25 percent on total MAM score

	t	df	Sig. (2-tailed)
Applicability - Grade	1.30	23	.207
Applicability - Social Influence	3.15	23	.005*
Satisfaction - Grade	1.09	23	.288
Satisfaction - Social Influence	4.15	23	.000*
Satisfaction - Applicability	.595	23	.558
Social Influence - Grade	2.59	23	.017

Table 13

Descriptive statistic for intrinsically motivated people at highest 25 percent on total MAM score

	M	SD
Applicability	3.00	1.22
Enjoyment & satisfaction	2.83	.76
Grades	2.46	1.10
Social influence	1.71	.95

Similar with the other follow-up as seen on Table 12, six paired sample t-test and a post hoc comparison was used to determine the differences between factors influencing of course selection (applicability, enjoyment & satisfaction, grades, social influence), which their descriptive statistical data was shown on Table 13. The first paired sample t-test showed no significant difference between applicability ($M = 3.00$, $SD = 1.22$) and grades ($M = 2.46$, $SD = 1.10$); $t(23) = 1.30$, $p = .207$. However, the second paired sample t-test showed that applicability was found to be significantly higher when compared with social influence ($M = 1.71$, $SD = .95$); $t(23) = 3.15$, $p = .005$. The third paired sample t-test reported that there was no significant difference between enjoyment & satisfaction ($M = 2.83$, $SD = .76$) and grades; $t(23) = 1.09$, $p = .288$. While the fourth paired sample t-test showed that enjoyment & satisfaction was significantly higher than social influence; $t(23) = 4.15$, $p < .001$. The fifth and sixth paired sample t-test showed no significant difference in values for applicability and enjoyment & satisfaction; $t(23) = .60$, $p = .558$ and grades when compared with social influence; $t(23) = 2.59$, $p = .017$.

Table 14

Paired sample t-test for extremely extrinsically motivated people lowest 25 percent of MAM and extremely intrinsically motivated people highest 25 percent of MAM

	t	df	Sig. (2-tailed)
Applicability (Extrinsic) - Applicability (Intrinsic)	-3.86	21	.001*
Grades (Extrinsic) - Grades (Intrinsic)	2.35	21	.028
Social Influence (Extrinsic) - Social Influence (Intrinsic)	4.45	21	.000*
Satisfaction (Extrinsic) - Satisfaction (Intrinsic)	-1.76	21	.094

Table 15

Descriptive statistic for extremely extrinsically motivated people lowest 25 percent of MAM and extremely intrinsically motivated people highest 25 percent of MAM

	Intrinsically motivated people		Extrinsically motivated people	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Applicability	2.91	1.23	1.64	.90
Enjoyment & satisfaction	2.86	.77	2.36	1.00
Grades	2.45	1.14	3.13	1.13
Social influence	1.77	0.97	2.86	.89

Additional results comparing extremely intrinsic and extremely extrinsic samples

As illustrated in Table 14, four paired sample t-test were used to compare the differences between each factor influencing course selection for extremely intrinsic and extremely extrinsic participants, and the descriptive statistic data was shown on Table 15. A first paired sample t-test indicated a significant difference between applicability of intrinsically motivated people ($M = 2.91$, $SD = 1.23$) and extrinsically motivated people ($M = 1.64$, $SD = .90$); $t(21) = -3.86$, $p = .001$. However, grades when compared with intrinsically motivated people ($M = 2.45$, $SD = 1.14$) and

extrinsically motivated people ($M = 3.13$, $SD = 1.13$) was found to be not significant; $t(21) = 2.35$, $p = .028$. The third pair showed a significant difference between social influence of intrinsically motivated people ($M = 1.77$, $SD = .97$) and extrinsically motivated people ($M = 2.86$, $SD = .89$); $t(21) = 4.45$, $p < .001$. A fourth paired sample t-test found no significant difference between enjoyment & satisfaction for intrinsically motivated people ($M = 2.86$, $SD = .77$) and extrinsically motivated people ($M = 2.36$, $SD = 1.00$); $t(21) = -1.76$, $p = .094$.

Chapter 4

Discussion

The study aimed to explore the effects of academic motivation (intrinsic, extrinsic) toward factors influencing students' course selection (enjoyment & satisfaction, applicability, grades, social influence) among international program students in Chulalongkorn University.

Hypothesis I: Intrinsically motivated people will be more likely to value intrinsic factors for course selection greater than extrinsically motivated people.

Results: The hypothesis was accepted.

Consistent with the hypothesis, the repeated measures ANOVA indicated that there was a significant difference between factors influencing class selection for intrinsically motivated people. MAM scores from participants whose scores were at the highest 50 percent analyzed. Therefore, the null hypothesis was rejected. There is no difference in how intrinsically motivated people value intrinsic and extrinsic factors influencing class selection.

A follow up repeated measures t-test was conducted to see the relationship between each of the four factors influencing class selection and found that there was a significance difference between how these intrinsically motivated people valued intrinsic and extrinsic factors influencing course selection. The measuring of participants who scored above 50 percent for the MAM scale from the total participants indicating that they are intrinsically motivated based on our data. These students valued applicability, grades and social influence at a comparable level. However, what we found was that enjoyment & satisfaction, which was the highest valued factor, was found to be significantly higher when compared social influence, which was the lowest valued factor and not significant when compared to any other factor. These results

showed that people who are intrinsic would often select courses that could give fulfillment or answer their curiosity, which supports their enjoyment & satisfaction (Howorth, 2001; Vallerand et al., 1992) and would often not consider the familiarity of classmates, as one of the benefits when deciding which course to enroll in.

Hypothesis II: Extrinsically motivated people will be more likely to value extrinsic factors for course selection greater than intrinsically motivated people.

Results: The hypothesis was accepted.

The repeated measures ANOVA showed that there was a significant difference between the factors influencing course selection for extrinsically motivated people. The measuring of participants whose MAM score was up to 50 percent was studied. According to the results, the null hypothesis was rejected. Thus, there is a difference in how extrinsically motivated people value intrinsic and extrinsic factors regarding course selection.

Similar to the first hypothesis, a follow-up repeated measures t-test was done to examine the relationship between each factor that contributed to the participants' course selection. It showed that extrinsically motivated people value grades the highest out of all the other factors, followed by social influence, enjoyment & satisfaction, and the lowest factor being applicability. Similar to the intrinsically motivated participants three of the four factors influencing course selection was found to be not significant, which are social influence, grades, and enjoyment & satisfaction, when compared to one another making it similar to each other. However, applicability, which was the lowest factor when compared with grades, which was the highest factor, was found to be significant. This can be explained by previous studies that mentioned that extrinsically motivated people would be motivated to complete a task from external influences or

rewards (Harter, 1981; Ryan & Deci, 2000b), such as grades (Hedges et al., 2014). Since grades are perceived as external rewards, which acts as a cause that provides enjoyment & satisfaction as an outcome (Hedges et al., 2014). Social influence which was also considered to be an important factor for extrinsically motivated people was found to be not significant when compared to the intrinsically motivated factors.

Social influence. As some researchers found that students rated friends as the most important factor in determining their course selection (Kerin, Harvey, & Crandall, 1975), it is interesting to analyze data examining whether students are influenced by normative or informative social influence from their peers when selecting courses. These results suggested that normative social influence has a greater effect on extrinsically motivated participants. Specifically, the results showed that extrinsically motivated students are more influenced by normative social influence than intrinsically motivated people. Therefore, extrinsically motivated students would be more likely to enroll as same course as their peers. On the other hand, informational social influence was shown to have equal effect on both intrinsically and extrinsically motivated participants. From the results both types of participants acquire course information from their peers before deciding which course to enroll.

Additional results

To further analyze the difference between intrinsic and extrinsic motivation two repeated measures ANOVA and several paired sample t-test was conducted. The additional results were generated to test the hypotheses with more extreme scores in the participants' responses. This is to see whether these extreme scores would produce any novel results. The extreme upper and lower MAM scores were separated into two categories; 1) extremely intrinsic sample whose

MAM score was at the highest 25 percent and 2) extremely extrinsic samples whose MAM score was at the lowest 25 percent.

Extremely extrinsic samples (MAM score lowest 25 percent). The repeated measures ANOVA on extreme extrinsic samples indicated that there was a significant difference in how extrinsically motivated people value course selection. A follow-up paired sample t-test was done to investigate the relationship between each factor influencing course selection. The results was consistent with the extrinsic sample at 50 percent showing that participants value grades, social influence, and enjoyment & satisfaction at a similar level. However different from the sample at 50 percent the extreme samples found a significant difference between applicability with both of the extrinsic factors, which are grades and social influence, rather than only one of the factors making the result more clear that extrinsic samples would more likely pick extrinsic factors influencing course selection than intrinsic factors.

Extremely intrinsic samples (MAM score highest 25 percent). This repeated measures ANOVA discovered that there was a significant difference between one of the factors influencing course selection for extremely intrinsic participants, which supporting the first hypothesis and the null hypothesis was rejected.

The follow up paired sample t-test found that there was a significance difference between how intrinsic extreme sample value intrinsic and extrinsic factors in course selection. The results showed that participants valued applicability, enjoyment & satisfaction, and grades at a comparable level similar to the intrinsic sample at 50 percent. However, the difference between social influence is more clear in the extreme sample where social influence is significantly lower

when compared to both applicability and enjoyment & satisfaction rather than only applicability as shown in the 50 percent sample.

In conclusion, the extreme scores shows a more clear difference between both intrinsic and extrinsic participants in their choices of factors influencing course selection. Nonetheless, this result still supported the first hypothesis, because extremely intrinsic participants still valued intrinsic and extrinsic factors differently. Surprisingly, they valued grade, which is an extrinsic academic motivation, as much as intrinsic factors (applicability and satisfaction). The rationale behind this was found in the work by Hedges and colleagues in 2014, as participants could sequentially receive satisfaction and enjoyment after gaining an external reward like grade. On one hand, it was not surprising that social influence was valued the least, because social influence is an extrinsically motivated factor, which should not be considered by these extremely intrinsic participants (Kerin, Harvey, & Crandall, 1975). Moreover, extremely intrinsic participants would not be affected by normative social influence, such as enrolling course that their friends choose to conform to group's norm (Deutsch & Gerard, 1955). Also, they would not consider an informal source on course description from peer's opinions (Babad, Darley & Kaplowitz, 1999; DellaGioia, 2008; Zare-ee & Sherey, 2010). Therefore, social influence was the lowest consideration when extremely intrinsic people determine their course selection. Rather, they highly consider the difficulty to get high grade, the fulfillment and the beneficial of the course when they decide which course to enroll.

Extrinsic versus intrinsic motivation. As mentioned in chapter 1 that this study was developed using the understanding of course selection from Hedges and colleague (2014) research and replacing one of the three main factors influencing GenEd selection, which is

module characteristic, with a novel factor (social influence) that the researchers believed to have an effect on collectivist society (Radford, Mann, Ohta, & Nakane, 1993).

In order to test if social influence was a valid instrument to measure GenEd selection four paired sample t-test was conducted comparing extremely intrinsic and extremely extrinsic participants on factors influencing course selection. The results indicate that both applicability and social influence was significant at $p \leq .001$ indicating it was significant when compared to grades and enjoyment & satisfaction, which was found to be not significant at $p = .028$ and $p = .094$ respectively. This indicates that applicability and social influence differs greatly when comparing extreme intrinsic and extrinsic participants making it a redundant instrument, since measuring intrinsic and extrinsic motivation would already indicate if participants would value applicability or social influence. The results also showed no significant difference between the enjoyment & satisfaction value of extremely intrinsic and extrinsic participant. In addition, the mean value of enjoyment & satisfaction for extrinsic ($M = 2.36$) and intrinsic ($M = 2.86$) was considerably high, meaning that both intrinsic and extrinsic participant value enjoyment & satisfaction.

The results suggest that social influence, which this current research suggested to be a good third measure of GenEd courses instead of module characteristic, was not a good measure of GenEd courses. However, enjoyment & satisfaction was found to be a possible third measure of GenEd courses instead of social influence.

Implications

As there are less attention paid on the understanding of student's GenEd course selection in Chulalongkorn University, this study may help to introduce and bring the attention to this field. The study found that both intrinsic and extrinsic students valued enjoyment & satisfaction equally. Hence, it could assist faculties in acknowledging that in order to host certain GenEd courses, students' enjoyment & satisfaction is one of the key factors that need to be considered. Furthermore, the results obtained may also be beneficial for the instructors to modify their course components to be enjoyable and satisfying, since the students' preferences are known (Pass, Mehta, & Mehta, 2012). Consequently, the result of this study may give a better understanding of the trends and demands of student's GenEd course selection.

Not only that this study may benefit Chulalongkorn University, but it may also be used to apply to other universities in Thailand. However, the factors affecting course selection may need to be taken into consideration as these factors may vary among the universities. Hence, all universities might want to carefully consider the structure of their GenEd courses and their students' preferences.

Most importantly, this study attempted to answer why certain GenEd courses are often filled up faster than the others, as well as the imbalance availability of the courses. On one hand, if a student view a particular course as extrinsic then the main factors which that student would take into consideration include grades and social influence. On the other hand, if the student perceived it as intrinsic motivation, enjoyment & satisfaction and grades are shown to have a greater impact on their decision. However, the types of motivation may vary among courses, meaning that students who perceived one course as extrinsic motivation may consider another as

intrinsic. So, to answer whether certain courses are filled up faster than the others would depend entirely on how each student perceives different GenEd courses. Lastly, it may also help to strengthen the students' satisfaction in their education, as the options for course matches their preferences. Thus, this may enhance their learning outcomes.

Evaluation

Several strengths were found in this pioneer study. First, all participants were randomly and voluntarily recruited from international programs in Chulalongkorn university. Thus, there was no selection bias in the sample. Also, this sample reflected a diverse range of population among international program students. According to the demographic results, participants were from various races, such as Thai, Korean and Indian. The sample includes all university years and also from all international faculties in Chulalongkorn university. Second, the researchers developed a novel scale for this current study called MAM. The developed scale was adapted based on the previous research, which confirmed to have high reliability and validity. Third, the possibility of getting extreme scores from the data was prevented by using the ranking system at the last part of the questionnaire.

Although the results indicated promising findings, there are some limitations of this study that need to be addressed. One of the limitations was the sample size restriction, which was due to the time constraints of this study. Time constraints also affected the ability to collect more diverse participants making the focus of the study only international students (no time to translate questionnaire). In addition to recruiting only international participants most of the data collected were from the undergraduates in the faculty of psychology making it hard to generalize to the whole population of the university. Although, the MAM scale was developed from a good

reliable and validity scale, this scale was still difficult to understand. Participants often reported that the instruction were unclear and ambiguous. Researchers had to briefly explain how the response works prior to the completion the questionnaire.

Future Research

The first limitation on sample restriction draws an obvious suggestion for future research. Researchers should recruit a larger size of sample in order to obtain a stronger effect in the study. It is also important for future studies to examine the academic motivation of each faculty individually, and compare the differences across all faculties. As aforementioned, future research should explore factors influencing course selection according to what the participants reported; for instance, time and location of the class. Moreover, researchers may also want to conduct cross-cultural studies, where they compare several university students from different countries. This would be an interesting topic to investigate especially since Thailand is now in the ASEAN.

Conclusion

This paper investigated intrinsic and extrinsic behaviors or the academic motivation in the aspect of a collectivistic culture, in which the researchers had selected Chulalongkorn University students to be the representative. The key findings found that intrinsically motivated students' valued enjoyment & satisfaction, whereas extrinsically motivated students ranked grades as the priority. Additional results on extreme samples for both intrinsic and extrinsic participants were analyzed. Similar to the key findings, extrinsically motivated students showed no different with the extreme samples. However, a distinct result was found when analyzing an extreme data for intrinsic participants. The intrinsic extreme sample ranked enjoyment &

satisfaction, applicability and grades are most important, while social influence did not receive much attention. The topic is a novel area that also enlightened various areas for future research.

References

- Babad, E., Darley, J. M., & Kaplowitz, H. (1999). Developmental aspects in students' course selection. *Journal of Educational Psychology, 91*(1), 157-168. doi:10.1037/0022-0663.91.1.157
- Brown, C. L., & Kosovich, S. M. (2015). The Impact of Professor Reputation and Section Attributes on Student Course Selection. *Research in Higher Education, 56*(5), 496-509.
- Caleon, I. S., Wui, M. G. L., Tan, J. P., Chiam, C. L., Soon, T. C., & King, R. B. (2015). Cross-cultural validation of the Academic Motivation Scale: A Singapore investigation. *Child Indicators Research, 8*(4), 925-942. doi:10.1007/s12187-014-9298-7
- Clark, C., Scafidi, B., & Swinton, J. R. (2011). Do peers influence achievement in high school economics? Evidence from Georgia's economics end of course test. *The Journal of Economic Education, 42*(1), 3-18. doi:10.1080/00220485.2011.536486
- Deci, E, Vallerand, R., Pelletier, L., & Ryan, R. R. (1991). Motivation and education - the self-determination perspective. *Educational Psychologist, 26*(3-4), 325-346.
doi:10.1207/s15326985ep2603&4_6
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic Motivation and Self-determination in Human Behavior*. New York: Plenum.
- Deci, E. L., & Ryan, R. M. (1987). The support of autonomy and the control of behavior. *Journal of Personality and Social Psychology, 53*, 1024-1037.
- DellaGioia, M. (2008). Student opinion and student course selection. *Journal of Undergraduate Psychological Research, 3*(1), 20-25.

- Deutsch, M., & Gerard, H. B. (1955). A study of normative and informational social influences upon individual judgment. *The Journal of Abnormal and Social Psychology*, 51(3), 629-636. doi:10.1037/h0046408
- Germar, M., Schlemmer, A., Krug, K., Voss, A., & Mojzisch, A. (2014). Social influence and perceptual decision making: A diffusion model analysis. *Personality and Social Psychology Bulletin*, 40(2), 217-231. doi:10.1177/0146167213508985
- Harter, S. (1981). A new self-report scale on intrinsic versus extrinsic orientation in the classroom: Motivational and informational components. *Developmental Psychology*, 17, 300-312.
- Hedges, M. R., Pacheco, G. A., & Webber, D. J. (2014). What determines students' choices of elective modules? *International Review of Economics Education*, 17, 39-54. doi:10.1016/j.iree.2014.05.003
- Howorth, C. A. (2001). An empirical examination of undergraduate students module choices. *International Journal of Management Education*, 2(1), 19-30.
- Hsu, C., & Lin, J. C. (2008). Acceptance of blog usage: The roles of technology acceptance, social influence and knowledge sharing motivation. *Information & Management*, 45(1), 65-74. doi:10.1016/j.im.2007.11.001
- Kerin, R., Harvey, M., & Crandall, N. F. (1975). Student course selection in a non-requirement academic program: An Exploratory Study. *Journal of Educational Research*, 68(5), 175.

- Li, C (2013). Persuasive messages on information system acceptance: A theoretical extension of elaboration likelihood model and social influence theory. *Computers in Human Behavior*, 29(1), 264-275. doi:10.1016/j.chb.2012.09.003
- Limpisuree (2009). Engineering education and updating special general education and faculty curriculum. *Journal of Engineering*, 2(1), 1-10. doi:10.4186/ejth.2009.1.2.1
- Mann, L. (1998). Cross-cultural differences in self-reported decision-making style and confidence. *International Journal of Psychology*, 33(5), 325-335. doi:10.1080/002075998400213
- Osei Akoto, E. (2014). Cross-cultural factorial validity of the Academic Motivation Scale. *Cross Cultural Management*, 21(1), 104-125. doi:10.1108/CCM-11-2011-0100
- Pass, M. W., Mehta, S. S., & Mehta, G. B. (2012). Course selection: Student preferences for instructor practices. *Academy of Educational Leadership Journal*, 16(1), 31.
- Pintrich, P. R., Smith, D. A. F., Garcia, T., & McKeachie, W. J. (1991). A manual for the use of the Motivated Strategies for Learning Questionnaire (Technical Report 91-B-004). *The Regents of the University of Michigan*.
- Pintrich, P. R., Smith, D. A., García, T., & McKeachie, W. J. (1993). Reliability and predictive validity of the Motivated Strategies for Learning Questionnaire (MSLQ). *Educational and psychological measurement*, 53(3), 801-813.
- Radford, M. H., Mann, L., Ohta, Y., & Nakane, Y. (1993). Differences between Australian and Japanese students in decisional self-esteem, decisional stress, and coping styles. *Journal of Cross-Cultural Psychology*, 24(3), 284-297.

Rashotte, L., *The Blackwell Encyclopedia of Sociology*. (2007).

doi:10.1111/b.9781405124331.2007.x.

Rusillo, M. T. C., & Arias, P. F. C. (2004). Gender differences in academic motivation of secondary school students. *Electronic Journal of Research in Educational Psychology*, 2(1), 97-112.

Ryan, R. M., & Connell, J. P. (1989). Perceived locus of causality and internalization: Examining reasons for acting in two domains. *Journal of Personality and Social Psychology*, 57, 749-761.

Ryan, R. M., & Deci, E. L. (2000a). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American psychologist*, 55(1), 68.

Ryan, R. M., & Deci, E. L. (2000b). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology*, 25(1), 5467. doi:10.1006/ceps.1999.1020

Ryan, R. M., Connell, J. P., & Deci, E. L. (1985). A motivational analysis of self-determination and self-regulation in education. In C. Ames & R. E. Ames (Eds), *Research on motivation in education: The classroom milieu* (pp. 13-51). New York: Academic Press.

Vallerand, R. J., & Bissonnette, R. (1992). Intrinsic, extrinsic, and amotivational styles as predictors of behavior: A prospective study. *Journal of personality*, 60(3), 599-620.

Vallerand, R. J., Pelletier, L. G., Blais, M. R., Briere, N. M., Senecal, C., & Vallieres, E. F. (1992). The Academic Motivation Scale: A measure of intrinsic, extrinsic, and

amotivation in education. *Educational and psychological measurement*, 52(4), 1003-1017.

Zare-ee, A., & Shekarey, A. (2010). The effects of social, familial, and personal factors on students' course selection in Iranian technical schools. *Procedia Social and Behavioral Sciences*, 9, 295-298. doi:10.1016/j.sbspro.2010.12.153

Appendix A: Example items from the Measure of Academic Motivation (MAM) (adapted from

Harter (1981) and Vallerand et al., (1992))

For the following questions please choose only one statement that fits you best and rate how close it fits your personality.

(For each question, please **read both of the items** but ONLY pick ONE of the options.)

Score		Subscale dimension		Score	
Really true for me	Sort of true for me			Sort of true for me	Really true for me
		I like interesting courses	vs.	I prefer courses with easy assignments	
		I do not enjoy tasks that are challenging	vs.	I enjoying challenging myself	
		I like learning new things	vs.	I wouldn't mind if the courses have repeated content.	
		I enjoy doing further study beyond what is required	vs.	I would do extra work so I can get better grades	
		I am motivated when learning something new	vs.	I do not have the eager to learn new things	
		I try to figure out the problem on my own before seeking help from someone else	vs.	I rather ask others for help than to figure things on my own.	
		I rely on myself to complete difficult tasks	vs.	I often rely on others on difficult tasks	
		I experience enjoyment and satisfaction while learning new things	vs.	I do not gain enjoyment or satisfaction while learning new things	

Appendix B: Measure of Social Influence Scale (MSI) (adapted from Li (2013))

Measure of Social Influence Scale (MSI)							
	Strongly disagree (1)	Disagree (2)	Slightly disagree (3)	Neutral (4)	Slightly agree (5)	Agree (6)	Strongly agree (7)
1. I often decide to enroll in the same general education course that my friends take							
2. I often use information given from friends to decide which general education course to enroll in							

Appendix C: Ranking of self-value scale

Rank	Factors:
	Social Influence (e.g. pick the course that your friends choose)
	Grade
	Applicability (how it can be applied to your life or your future)
	Satisfaction & Enjoyment

Bibliography

Natchaya Pituckwanitudom

Natchaya Pituckwanitudom is currently an undergraduate psychology student in Chulalongkorn University. She had also just received her other Bachelor degree from The University of Queensland, Australia with an extended major of psychology and a minor in sociology. Having experience different cultural context, she also enjoys learning about cultural differences. In addition, Natchaya is interested in learning about human development and human behaviours.

Monditz Lertamornthep

Monditz Lertamornthep is currently enrolled in the Joint International Psychology Program offered by Chulalongkorn University and the University of Queensland. He graduated from the University of Queensland receiving a Bachelor of Arts in Psychology in 2015 and will graduate and receive a Bachelor of Science in Psychological Science from Chulalongkorn University late this year of 2016. During the time of his studies he was interested in the field of industrial organizational psychology and will pursue the career of human resource in the future.

Sojirat Janyame

Sojirat is graduated from St. Stephen's International School. Currently, she is an undergraduate student from Joint International Program in Psychology (JIPP) in Chulalongkorn University. She is also a newly graduated from a Bachelor of Arts with a major of psychology from The University of Queensland (Brisbane, Australia). Furthermore, she is fascinated in clinical psychology, especially in childhood mental disorders and early interventions.