# Modeling Goal-Directed Choice Quality: A University Context

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**ABSTRACT**

Can we detect future student loyalty at the moment of university choice? Based on the expectancy-value belief theory, the author develops the model of goal-directed student decision quality (SDQ) to answer that question. The premise is that decision quality determines loyalty intention, and the achievement goals impact both. Therefore, the objectives of this study are; first, to investigate the dimensions of SDQ and the structural relationships among them, and second, to investigate the influence of achievement goals on the dimensions. The study confirms that decision confidence, positive affect, and decision satisfaction are present-oriented, and attitudinal loyalty intention is future-oriented of decision quality. Mastery goals positively influence, and conversely, performance-approach goals and performance-avoidance goals negatively influence all of the student quality dimensions. Therefore, high mastery goals are the key to high attitudinal loyalty intention and low switching likelihood. On the other hand, a high performance-approach and performance-avoidance goals should be the early indications of a low attitudinal loyalty intention and high switching likelihood and vice versa. Future researchers can consider a longitudinal research design to detect the change in achievement goals and their impacts within a period.

**Keywords**: Achievement Goals, Decision Confidence, Self-Efficacy, Expected Outcomes, Positive Affection, Loyalty Intention
**JEL Classifications:** M31, D81, I21

## 1. INTRODUCTION

Students drop-out is a global phenomenon, faced mainly by small and private universities. In the USA, for example, as reported by Fain (2019, October 31), in the last 5 years, there were around 22% of students left the university with no credential. In Indonesia, as reported by Tejo (2019, September 30), that ratio reaches 40%. The question, why many students drop themselves out of their university?

Everybody should make the right decisions in life. The question is, what is the right decision? Keren and Bruin (2003) noted that there are two approaches to judge decision quality. In the process approach, the measurement of decision quality deals with how the decision-makers manage the decision-making process. This view holds that the right decision has the highest chance to accomplish decision-makers' goals. Consequently, a good process should generate good outcomes (Keren and Bruin, 2003). However, there is no guarantee that a good process will make good outcomes,

and ill-defined processes will finish with adverse outcomes. In reality, a good process can produce undesirable consequences, and a lousy process can end with excellent results (Keren and Bruin, 2003). Moreover, the decision-making process may also contain subconscious steps that can be out from decision-makers' or judges' considerations (Willman-Iivarinen, 2017).

In the outcomes approach, the favorability of the outcomes determines the quality of the decision (Keren and Bruin, 2003), indicated by how satisfied are the decision-makers about their decision (Tyburski, 2017). This approach is suitable to explain individual decision making. In principle, the most satisfying option is the most proper according to a situation, not the best choice to generate outcomes of the decision (Keren and Bruin, 2003; Tyburski, 2017).

The problem is that many decision-makers have no clear understanding of the outcomes of their decision (Chernev et al., 2015; Tyburski, 2017). Consequently, choice satisfaction can lead to

future adverse outcomes (Keren and Bruine, 2003; Spetzler, 2017), and vice versa. Therefore, the need for a decision quality concept that considers future considerations is evident at present.

A university selection is a decision made under uncertainty. Sometimes, the students need several years to come to conclude whether their choice is right or not. Those who found that their decision is right will gear up to finish their study. On the other hand, the students who think they have made the wrong decision may leave their university without credentials. Therefore, we need to know how to identify the righteousness of the student's decision at the moment of choice.

This study aims to develop and validate a student decision quality (SDQ) concept and model to accommodate that necessity. The findings should enable university management to make early detection of students' study continuation. Also, because of a rare discourse about them so far, the concept and model developed in this study are hopefully still original for the scientific world.

## 2. LITERATURE REVIEW

### 2.1. Developing Goal-Directed Model of Student Choice Quality

The right decision is the one that produces desired outcomes. The desirability of the outcomes indicates decision quality. When the outcomes are uncertain, said that the right decision is the one that has the highest chance of getting the best issue or the one that has the lowest probability of getting the worst result (Howard and Abbas, 2016). The justifiability of the decision and decision-makers' confidence about their decision represents those chances. With the avoidance of negative emotions, such as regret and social reproach, those two goals influence decision satisfaction (Heitmann et al., 2007).

Habits or goals can be individuals' behavior drivers (Shea et al., 2008). In goal-directed behavior, people set up specific outcomes and make a plan to achieve them (Bagozzi and Dholakia, 1999). Studying in a university is a goal-directed behavior (Boekaerts et al., 2006). In that context, achievement goals are the manifestation of expected goals (Nicholls, 1984; Elliot, 1999;

Elliot and McGregor, 2001). Many researchers (e.g., Keren and Bruin, 2003; Tyburski, 2017; Zhang and Fitzsimmons, 1999) believe that, in individuals' decision making, decision-makers' satisfaction determines the quality of their decision. This belief is evident when the long-term consequences of a decision are uncertain (Saifort and Booske, 2000). The most satisfying decision should have the highest chance of getting the desired outcomes.

The cognitive model of decision making (Small and Venkatesh, 2001) uses decision confidence as an indicator of decision quality. On the other hand, in the emotional-based decision-making, positive affection takes that role (Zeelenberg et al., 2008). For Doodley and Fryxell (2017), commitment is the indicator of the decision quality. Therefore, previous studies offer four indicators of decision quality, they are decision confidence, positive affection, and decision satisfaction) and commitment or choice loyalty dimensions.

The first three indicators are present-oriented (Heitmann et al., 2007), and the last one is future-oriented decision quality. The unanswered question is, how are the structural relationships among them, and what is the factor that influences them? To answer this question, the author develops the SDQ model based on the expectancy-value belief theory (Eccles et al., 1983). This basic theory underlines that expectancy covers specific goals (achievement goals) held by an individual and the belief (self-efficacy) about his or her success in achieving the goals. More specifically, individuals' choice, persistence, and motivation to perform a task are influenced primarily by their belief about how well they will do the task (Bandura, 1977; Schunk, 1991). In the model, self-efficacy is the manifestation of this belief. It determines to which achievement goals are that an individual is focused more or less (Bandura, 1977; Schunk, 1991).

Positive affect and decision confidence are two immediate responses generated by achievement goals. Next, those two dimensions influence decision satisfaction. Finally, decision satisfaction influences loyalty intention and switching likelihood (Figure 1). The author presents more detailed descriptions of the model and concept below.

### 2.2. Self-efficacy

Bandura (1977) defined self-efficacy as a person's belief about his or her ability to perform a task and reach goals. He said that self-

**Figure 1:** Model of goal-directed student decision quality in choosing a university
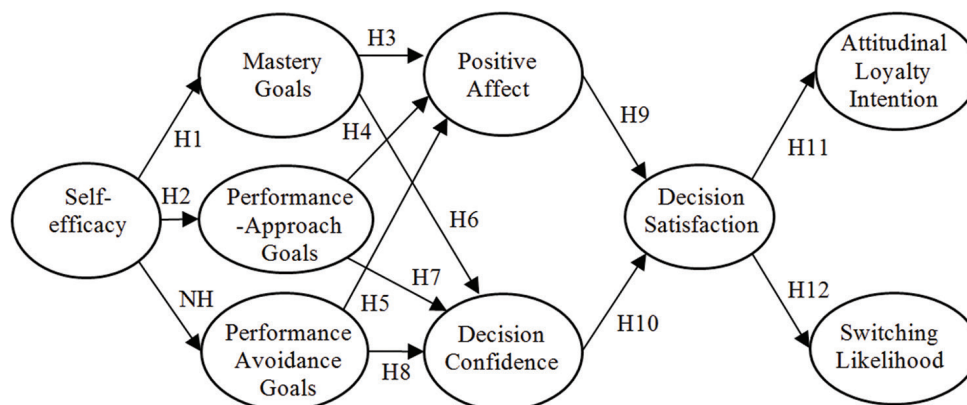


Note: NH=Not hypothesized

efficacy determines how people feel, think, motivate themselves, and behave. People with strong self-efficacy are more confident in performing tasks. They also tend to set up higher goals and have higher motivation. They are more receptive to difficult tasks because they perceive it as something to be mastered instead of threats to be avoided.

On the other hand, according to Bandura (1977), people with low self-efficacy view difficult tasks as threats. They have low motivation and a weak commitment to the goals they want to achieve. When they face a difficult task, they tend to focus on their deficiencies and look for the reasons to get out rather than to find a way to perform successfully.

Self-efficacy can be expressed as perceived-difficulty in performing tasks (Kraft et al., 2005), where high perceived difficulty task indicates low self-efficacy and low perceived difficulty task reflects high self-efficacy. Perceived difficulty can be concluded from the outcomes of performing a task.

## 2.3. Achievement Goals

With future-oriented thinking, people are able to predict the desired and undesired outcomes of their behavior (Ajzen and Madden, 1986; Eskritt et al., 2014). When an individual wants to get or avoid them, the desired or undesired outcomes become goals (Ajzen and Madden, 1986). Goal-directed behavior theory presumes that there many goals. Each goal or a collection of goals can be achieved through different behavior. So, an individual should evaluate the pros and cons of each goal, decide which goals are to be pursued, then regulate their behavior to achieve the goals (Ajzen and Madden, 1986; Perugini and Bagozzi, 2001).

Graham and Weiner (1996) stated that skill-related factors or chance-related factors could produce an outcome. In skill-related factors, results are determined by one's ability. The higher is the ability, the higher is the expectancy. Prior success or failure will influence the ability perception. In chance-related situations, such as the flip of a coin, the expectancy remains the same no matter whether the subject is success or failure in prior experience.

Achievement motivation is an outcome concept that is relevant in the situation where the skill-related factor produces the expectancy, and subjects have high ability or self-efficacy (Nicholls, 1984). In its development, achievement motivation also covers an effort to avoid failure as reflected in achievement goals. Elliot (1999) offered three goals of achievement behavior called dichotomous goals. It consists of mastery goals that are focused on attaining task-related skill or competence, performance-approach goals focused on achieving normative competence, and performance avoidance-goals focused on avoiding normative incompetence. He said that the first two goals should be owned by those that have high self-efficacy.

On the other hand, the third category should be found among those who have low self-efficacy. This belief is congruent with Higgin's (1998) regulatory focus theory, which states that people can be mainly motivated to achieve positive outcomes (promotion focus), to avoid adverse outcomes (prevention focus). In Elliot's (1999)

concept, mastery goals and performance goals are coherent with a promotion focus, whereas performance-avoidance goals have the same tone with a prevention focus.

In 2001, Elliot and McGregor added the fourth dimension called mastery avoidance goal, a goal by which an individual avoids failure in mastering a skill or competence. The new model is now called 2 (focus: mastery and performance) X 2 (valence: approach and avoidance) model. It consists of a mastery-approach, mastery-avoidance, performance-approach, and performance-avoidance goals.

There are various concepts of achievement goals, but the most widely used is the $2 \times 2$ model (Huang and Zhang, 2011). Many studies confirm this model (Rosas, 2015). However, Pintrich (2000) reminded, it may not be easy to conceptualize a mastery-avoidance goal. Moreover, Hsieh et al., (2007) stated that it is a challenging job to generate hypotheses about the relationship between mastery-avoidance goals and performance. Besides, as Vandewalle et al., (2019) stated, Elliot's (1999) initial three-factor model without the addition of the new mastery-avoid factor is the primary choice in many studies. This study adopts this view.

## 2.4. Decision Confidence

Decision-making is a process of choosing the most preferred alternative from several available alternatives (Pennington and Hastie, 1993). Individuals should be able to justify their decision. As the foundation of decision confidence, justifiability is the ability to justify or defend a choice (Heitmann et al., 2007). It is "the perception that the decision-makers have adequate reasons, evidence, logic or arguments to support the choice they have made or is about to make" (Reb and Connoly, 2007. 5).

Decision confidence is an essential indicator of decision quality made under uncertainty (Lee and Dry, 2010; Phillips et al., 2016). This uncertainty correlates with incomplete and inaccurate information (Lee and Dry, 2010). Decision confidence is the feeling generated by a belief that the decision-maker has made a decision or choice correctly or accurately (Heitmann et al., 2007), experienced as soon as a decision is made (Chernev et al., 2015; Heitman et al., 2007).

Decision confidence is the output of information availability (Jonsson et al., 2005; Phillips et al., 2016), the advice provided by others (Lee and Dry. 2010), emotions (Jonsson et al., 2005), and general self-confidence trait of the decision-maker (Phillips et al., 2016). If information is too much or their availability exceeds capability to process them, people tend to less confidence in their decision (Heitmann et al., 2007). The lack of information causes ambiguity (Di Cagno and Grieco, 2019). However, overconfident occurs when an individual develops a strong belief in perceived accurate but inaccurate evidence (Phillips et al., 2016).

## 2.5. Positive Affection

Because of the limitation of our cognitive capacities or the information we have and the time available to make a decision (Hanoch, 2002), people also use emotions in the decision-making process (Bagozzi et al., 1999; Heitmann et al., 2007;

Zeelenberg et al., 2008). Emotion is a mental state of readiness created by our cognitive appraisals of events or thoughts. It has a phenomenological tone and accompanied by physiological processes and may be expressed physically through gestures, posture, and facial features. It may be followed by specific actions to manifest or cope with the emotion, depending on nature and meaning the emotion for the person who experiences it (Bagozzi et al., 1999).

There many different concepts about the types of emotions, but the most fundamental one is positive (such as happiness, joy, pride, pleasure, and negative emotions (such as sad, disappointed, anxiety). Some emotions, according to Roseman (1991), are generated by a cognitive appraisal of particular circumstances. The direction of emotions depends on motive consistency as to whether a situation is consistent or inconsistent with one's goals. Positive emotions follow a motivationally, consistent situation. Conversely, the inconsistency of a situation with one's goals will generate negative emotions.

When people experience positive and negative emotions simultaneously, for the first time, both emotions can co-exist. For Lazarus (1991), negative emotions are a state of disequilibrium that contribute negatively to one's wellbeing. To return to normal conditions, people try to weaken negative emotions (Bagozzi et al., 1999). In this effort, positive emotions function as efficient forces to repel the effects of negative emotions (Frederickson, 2001). The effort to fertilize positive affection to create emotional wellbeing (Frederickson, 2001; Langeland, 2014).

Heitmann et al. (2007) stated that when involved in decision-making, people try to avoid negative emotions, such as regret, anxiety, fear, and disappointment. At the same time, people will pursue positive emotions, such as like, pleasure, happiness, and joy (Mellers, 2000). Before making a decision, people judge their affection, i.e., the goodness or badness or their decision based on the final magnitude of their emotions (Zeelenberg et al., 2008). Only the positive affection has utility (Mellers et al., 1999) that can impel people to action (Frederickson, 2001) or enables people to make a choice (Mellers, 2000). People may express them as cheerful, happy, calm, peaceful, satisfied, and full-of-life (Langeland, 2014), known as positive affect dimension of emotional wellbeing.

## 2.6. Decision Satisfaction

Satisfaction is the fulfillment of one's wishes, expectations, or needs, or the pleasure, generated by the comparison of experienced and expected quality. When experienced quality is the same with expected quality, satisfaction is resumed (Oliver, 1999). In the same way, Zhang and Fitsimons (1999) stated that decision satisfaction is the output of the comparison of features of decision options. The result is more accurate when the compared features are easy to compare. Ambiguity or information overload will create confusion and lowering decision satisfaction (Wang and Sukhla, 2013).

Decision satisfaction consists of process and choice satisfaction (Karimi et al., 2018). Choice satisfaction is the decision maker's

satisfaction derives from making a subjectively successful choice (Fassnacht et al., 2015) or is how satisfied is a decision-maker to the chosen option they made (Zhang and Fitsimmons, 1999). Choice satisfaction is more reliable when the decision is complex, difficult to justify the correct decision, or the situation is uncertain (Saifort and Booske, 2000). Proses satisfaction is how satisfied the decision-makers to the process they made (Zhang and Fitsommons). Decision confidence represents process satisfaction.

## 2.7. Loyalty Intention

Consumer loyalty is a deep commitment held by the consumer to a product or brand and willingness to hold it, although there are reasons to switch (Oliver, 1999). The commitment is indicated by liking to the brand and brand's advocacy and referral (Aaker, 1991). The relationship between a brand and its loyal customers can be seen as a love relationship. Fournier (1998) said that true loyal customers have only one brand they love. She sees loyalty as dedication and devotion to maintain relationships. However, commitment is a transactional matter in which people will give their commitment as long as the relationship is beneficial for them.

In decision-making behavior, the benefits of the relationship appear in the form of value expectation. It is reflected by how satisfied is a decision-maker to the chosen option or the decision-making process generated by the comparison of features of decision options (Zhang and Fitsimmons 1999).

Most researchers hold consumer loyalty as a multidimensional construct. They see it as consists of attitudinal and behavioral loyalty (Dick and Basu, 1994; Oliver, 1999), as well as switching behavior (Oliver, 1999). Attitudinal loyalty characterized by a relative attitude to a brand, corporate, or store. Repeat purchases identify behavioral loyalty to a brand or repeat shopping to a store.

Repeat purchases as an indicator of brand loyalty should be used with caution. Repeat purchase does not describe the commitment to the brand. Repeat purchase can be the reflection of habit (Aaker, 1991) or spurious loyalty (Dick and Basu, 1994). Brand loyalty also contains there deeper psychological reasoning as to why an individual will continuously re-purchase products from one brand. It also involves liking to a brand (Aaker, 1991; Oliver, 1999). Consumers stick to a brand because they personified it as a friend (Aaker, 1991) or acquaintance to be loved (Fournier, 1998). Therefore, attitudinal loyalty is the best indicator of brand loyalty because it influences the commitment to a brand and behavioral loyalty (Evanschitzky et al., 2006).

## 2.8. The Effect of Self-efficacy on Achievement Goals

The primary impact of self-efficacy is achievement motivation (Bandura, 1977; Domenech-Betoret et al., 2017). People with strong self-efficacy are more confident in performing tasks, set up higher goals, and show a willingness to "mastering a task" (Hsieh et al., 2007). They are more receptive to challenging tasks, for they perceive it as a challenge to be mastered instead of a threat to be avoided (Bandura, 1977). They also show greater motivation (Bandura, 1977; Domenech-Betoret et al., 2017; Schunk, 1991). On the other hand, people with low self-efficacy view difficult tasks as threats. They have low motivation and a weak commitment

to their goals. When facing difficult tasks, they tend to focus on their deficiencies and look for reasons to get out instead of finding a way to perform successfully (Bandura, 1977).

In the education field, achievement goals orientation represents achievement motivation (Rosas, 2015). In general, self-efficacy found to have a positive impact on mastery goals (Hsieh et al., 2007). However, there are inconsistencies regarding the influence of self-efficacy on performance-approach and performance-avoidance goals. Some researchers found a positive relation between performance-approach goals and self-efficacy (Middleton and Midgley, 1997; Pajares et al., 2000). The other researchers have found that self-efficacy does not influence performance-approach goals (Middleton and Midgley, 1997).

Previous studies found a negative correlation between self-efficacy and performance-avoidance goals (Elliot, 1999; Middleton and Midgley, 1997; Pajares et al., 2000). Conversely, Hsieh et al., (2007) found that self-efficacy correlate positively with performance-avoidance goals. Surprisingly, students with low self-efficacy tend to set up high performance-approach goals.

In this study, the author believes that self-efficacy has a positive influence on mastery goals and performance-approach goals. However, following of inconsistent results of previous studies, the author has no strong theoretical reasons to formulate the influence of self-efficacy on performance-avoidance goals. Therefore, in this study, the author proposes the following hypothesis:

$H_1$: Self-efficacy influences mastery goals positively
$H_2$: Self-efficacy influences performance-approach goals positively.

## 2.9. The Effect of Achievement Goals on Positive Affection and Decision Confidence

Several researchers (e.g., Dweck and Elliott, 1983; Nicholls, 1984) suggested that each category of achievement goals associate with different patterns of coping and emotion. Elliott and Dweck (1988) reported two general types of coping patterns made by young children in achievement situations. Children characterized by challenge avoidance demonstrated low persistence, express negative affect, and negative self-cognition when facing difficulties or obstacles.

Kaplan and Maehr (1999) outlined the same arguments. They specify that task and ego goals trigger different behavioral, coping, and emotive behavior. Students with ego goals view success in social comparison terms. Concerning self-esteem, this point of view is vulnerable to negative emotions because success is a limited commodity. In this situation, being the loser has a higher possibility than being a winner. Only a few students can achieve as the winners, and most are end up as losers. In contrast, when faced with difficult situations, students who pursue task goals view a problematic situation as a challenge, hold more optimistic orientation, maintain positive affect, and implement problem-solving strategies.

Most recent studies confirmed Kaplan and Maehr's (1999) 's work. Tuominen-Soini et al., (2008) found that mastery approach

goals were positively associated with various indices of wellbeing. In contrast, goals that reflect avoidance tendencies (mastery avoidance) and concerns with validating or demonstrating one's competence (performance-approach and performance-avoidance) correlate with different types of adjustment problems. Tian et al. (2017) performance-avoidance goal orientations showed a statistically significant and negative correlation with wellbeing. These arguments are formulated in the following hypothesis:

$H_3$: Mastery goals influence anticipated positive affection positively
$H_4$: Performance-approach goals influence positive affection negatively
$H_5$: Performance-avoidance goals influence positive affection negatively.

Elliot and McGregor (1999) found that mastery goals have the lowest correlation with test anxiety traits than the other two categories. More specifically, they found that test anxiety has a correlation coefficient of $r = 0.08$ for a mastery-approach goal, of $r = 0.29$ for a performance-approach goal, and of $r = 0.56$ for a performance-avoidance goal. They also found no evidence to reject null hypotheses for the relationship of fear of failure with a mastery-approach achievement goal. On the other hand, positive relationships fear of failure with performance-approach and performance-avoidance goals are confirmed. Vandewalle (1997) also found that fear of negative evaluation correlates negatively with a learning goal orientation and positively with performance-proven as well as performance-avoidance goal orientations. In sum, confidence correlates positively with mastery goals, and negatively performance-approach and performance-avoidance goals, as stated as follows:

$H_6$: Mastery goals influence decision confidence positively
$H_7$: Performance-approach goals influence decision confidence negatively
$H_8$: Performance-avoidance goals influence decision confidence negatively

## 2.10. The Effect of Positive Affection on Decision Satisfaction

So far, the theory of decision-making is colored heavily by a cognitive view (Bell, 2011). In fact, besides by cognition, decision-making can also be influenced by emotions (Bagozzi et al., 1999; Connolly and Zeelenberg, 2002). As mentioned before, a decision or choice can be made intentionally to minimize negative emotions (Heitmann et al., 2007; Connolly and Zeelenberg, 2002) or as a whole to maximize relative pleasure (Mellers, 2000). With minimum negative emotions, decision-makers will feel higher decision satisfaction, as stated as follows:

$H_9$: Positive affect influences decision satisfaction positively

## 2.11. The Effect of Decision Confidence on Decision Satisfaction

As mentioned before, decision confidence is a feeling caused by a belief that decision-maker has made a decision or choice correctly or accurately (Heitmann et al., 2007). It can also be described as how closely is the individual's choice or a selection from a group of alternatives with the ideal outcome or selection indicates the perceived quality of the decision (Connolly and Zeelenberg,

2002). A poor decision creates regret or self-blame feeling (Connolly and Zeelenberg, 2002), and a good decision generates positive emotions or feelings (Heitmann et al., 2007). Individuals should feel better when they have a logical decision (Pieters and Zeelenberg, 2005). Wise reasoning is associated with higher life satisfaction, less negative affect, better social relationships, less depressive rumination, positive vs. negative words used in speech, and greater longevity (Grossman et al., 2013).

Two factors influence decision making; they are the number of alternatives and the number of attributes. Decision confidence that leads to decision satisfaction is more viable when the attributes are easy to compare, and the number of alternatives is still can be covered by memory and knowledge (Zhang and Fitsimmons, 1999).

On the other hand, when the features are difficult to compare (Wang and Sukhla, 2013), or the information or the number of alternatives is overloaded (Heitmann et al., 2007; Wang and Sukhla, 2013), the decision-makers will feel confused, and decision satisfaction decreases. Moreover, the feeling of uncertainty or less confidence makes decision-makers feel less-satisfied with their decision (Politi et al., 2011). Therefore, to be satisfied with their decision, the decision-makers need to feel confident about their decision, as stated in the following hypothesis:

$H_{10}$: Decision confidence influences decision satisfaction positively.

### 2.12. The Effect of Decision Satisfaction on Attitudinal Loyalty Intention
The classic theory of satisfaction states that consumers who are satisfied with their choice will like the chosen brand (Aaker, 1991; Oliver, 1999). They also develop a commitment to the brand, advocate the brand, and recommended the brand to others (Aaker, 1991), including developing a personal relationship with the brand (Aaker, 1991; Fournier, 1998). People who are satisfied with their decision are expected to develop loyalty intention to their choice (Heitmann et al., 2007). Conversely, people that less satisfied will tend to escape their choice, as stated in the following hypothesis:

$H_{11}$: Decision satisfaction influences loyalty intention positively
$H_{12}$: Decision satisfaction influences switching likelihood negatively.

## 3. METHODOLOGY

### 3.1. Research Site, Sample and Data Collection Method
The research site was a business college located in North Jakarta, the capital city of Indonesia, in the final week of Augustus 2019. There were two considerations for the choice of this business school as a research site. First, the new students face a relatively soft selection process to get into that college. There were many alternatives available to them for the same category of educational service. Therefore, new students should have made deep considerations before choosing it. Second, as a brand, the name of this college gave no halo effect on new students' perceptions. Consequently, the choice of this educational institution should be based on rational considerations of its educational service attributes, features, and anticipated future outcomes.

The data were collected using an online questionnaire sent to each new student via Whats app. The respondents could fill the questionnaires at anytime from anywhere during the waiting period to start the first semester. To reduce position bias, the order of the questions was randomized. In the introduction part of the questionnaire, the author informed that their participation was voluntary. There was no reward given for their participation. However, their participation should not affect their fate during their study on their new campus. The respondents were listed unanimously to make them feel free to fill the questionnaires.

As many 350 respondents, out of 521 new students (response rate is 67.18%), were involved voluntarily in the study. They consisted of 198 males (56.6%) and 152 (43.4%) females. The age average was 18.29 years, and the median was 18 years.

### 3.2. Measurement
Self-efficacy measurement was from Pintrich et al. (1991). Mastery, performance-approach, and performance-avoidance goals were from Elliot and Murayama (2008). Decision confidence measurements were from Heitmann et al. (2007). The 5-item World Health Organization Well-Being Index (WHO-5) Version 1988 was the source of the measurement of positive affection. The work of Holmes-Rovner et al. (1996) was used to develop questions about decision satisfaction. Kumari and Patyal (2017) inspired the development of attitudinal loyalty, including switching likelihood. Table 1 displays the measurement items.

Three research specialist from Kwik Kian Gie Research Center evaluated the first version of measures. They suggested modifying two items of questions to make them more workable. Those two items are as follows. In the decision confidence measurement, "*My decision to choose this university was the best decision possible for me personally*" replaces the original version, "*It was impossible to be certain which product fits my preferences best.*" In the decision justifiability measurement, "*My decision to choose this university was a wise one*" replaces the original version, "*In order to choose this university, it was not necessary to make any difficult trade-offs.*"

The original questions were translated into the Indonesian language to make them more fit with the research contexts and then re-translated to the English version. Two English teachers evaluated the original measurements and re-translated version. The Indonesian version finally used after the English teachers ensured that original measurements and translated versions were the same. The author recorded the responses using five levels of Likert-type scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

### 3.3. Construct Validity and Reliability
The study uses Confirmatory factor analysis (CFA) with LISREL to test the validity of each measurement. All of the measurements satisfying construct validity (loading factor >0.5, average variance extracted [AVE] ≥0.5, and composite reliability [CR] >0.6) and

**Table 1: Validity and reliability analysis**

| Constructs and Items | FL |
|---|---|
| Self-Efficacy (Pintrich et al. 1991) (AVE=0.51, CR=0.81, CA=0.90) | |
| I believe I will receive an excellent grade from this university | 0.73 |
| I'm certain I can understand the most difficult material presented in this university | 0.64 |
| I'm confident I can understand the basic concepts taught in this university | 0.81 |
| I'm confident I can understand the most complex material presented by the instructor in this university | 0.70 |
| I'm confident that I can do an excellent job on the assignments and tests during my study in this university | 0.68 |
| I expect to do well in this university | 0.78 |
| I'm certain I can master the skills being taught in this university | 0.68 |
| Considering the difficulty of materials offered in this university, the teacher, and my skills, I think I will do well in this class | 0.66 |
| Mstery Goal (Elliot and Murayama, 2008) (AVE=0.50, CR=0.60, CA=.74) | |
| My aim is to master the material presented in this class completely | 0.76 |
| I am striving to understand the content of this course as thoroughly as possible | 0.82 |
| My goal is to learn as much as possible | 0.50 |
| Performance-approach Goal (Elliot and Murayama, 2008) (AVE=0.69, CR=0.82, CA=0.87) | |
| I am striving to do well compared to other students | 0.81 |
| My aim is to perform relatively well relative to other students | 0.82 |
| My goal is to perform better than the other students | 0.86 |
| Performance-avoidance Goals (Elliot and Murayama, 2008) (AVE=0.56, CR=0.69, CA=0.79) | |
| My goal is to avoid performing poorly compared to other students | 0.77 |
| I am striving to avoid performing worse than other students | 0.83 |
| My aim is to avoid doing worse than other students | 0.64 |
| My decision to choose this university was the best decision possible for me personally | 0.80 |
| I felt confident that this university matches best with my preferences | 0.77 |
| I was convinced to find this university best fulfills my needs | 0.71 |
| Positive Affection (WHO, 1988) (AVE=0.61, CR=0.83, CA=0.89) | |
| After choosing this university, I have felt cheerful and in good spirits | 0.82 |
| After choosing this university, I have felt calm and relaxed | 0.71 |
| After choosing this university, I have felt active and vigorous | 0.84 |
| After choosing this university, I woke up feeling fresh and rested | 0.81 |
| After choosing this university, my daily life has been filled with things that interest me | 0.71 |
| Decision Satisfaction (Holmes-Rovner et al., 1996) (AVE=0.51, CR=0.68, CA=0.80) | |
| I am satisfied that I am well informed about this university before I chose it | 0.71 |
| The quality of care of this college is good | 0.68 |
| I am satisfied that my decision to choose this university was consistent with my personal values | 0.67 |
| I am satisfied with my decision to choose this university | 0.79 |
| Attitudinal Loyalty Intention (loy) (Kumari and Patyal, 2017) (AVE=0.54, CR=0.66, CA=0.78) | |

*(Contd...)*

**Table 1: (Continued)**

| Constructs and Items | FL |
|---|---|
| I will have special attachment or emotional feelings towards this institution. | 0.77 |
| I will trust the learning services provided by this university | 0.78 |
| I will recommend this university | 0.61 |
| I have a positive attitude towards this university | 0.67 |
| Switching Likelihood (switch) (Kumari and Patyal, 2017) | |
| In the future, I may switch to another university | - |

FL=factor loading, AVE=average variance extracted, CR=composite reliability, CA=Cronbach alpha

reliability requirements (Alpha >0.7), as suggested by Hair et al. (2016). Also, all of the measurements are reliable, as indicated by Cronbach Alpha value that surpasses the minimum threshold of 0.60.

The measurement model is good fit as shown by root mean square error of approximation (RMSEA) = 0.071, normed fit index (NFI) = 0.96, Non-NFI (NNFI) = 0.97, comparative fit index (CFI) = 0.98, incremental fit index (IFI) = 0.98, relative fit index (RFI) = 0.96, root mean square residual (RMR) = 0.030 and standardized RMR = 0.051.

### 3.4. Structural Model
The prominent criteria used by LISREL indicate that structural models are good-fit as shown by NFI = 0.96, CFI = 0.97, IFI = 0.97, RFI = 0.95, and RMR = 0.034. Root mean square error of approximation (RMSEA) = 0.082 indicates the structural model is fair fit.

All of the hypothesized paths are supported (Table 2). As expected, self-efficacy has a positive and significant influence on mastery goals (t = 15.62, $\alpha < 0.001$), performance-approach goals (t = 15.78, $\alpha < 0.001$), therefore H1 and H2 are confirmed. The path from self-efficacy to performance-avoidance is also positive and significant (t = 12.95, $\alpha < 0.001$).

Decision confidence is positively and significantly influenced by mastery goals (t = 7.51, $\alpha < 0.001$), and negatively significantly influenced by performance-approach (t = −3.65, $\alpha < 0.01$) and performance-avoidance (t = −2.65, $\alpha < 0.05$) (H6, H7, and H8 are confirmed). As expected, decision satisfaction is influenced positively and significantly by decision confidence (t = 10.22, $\alpha < 0.001$) and positive affect (t = 8.00, $\alpha < 0.001$) (H9 and H10 are confirmed). The two variables can explain 99% of the decision satisfaction variance ($R^2 = 0.99$).

Decision satisfaction influences loyalty intention positively and significantly (t = 12.98, $\alpha < 0.05$) with a determinant coefficient ($R^2$) of 83%. The influence of decision satisfaction on switching likelihood, specified in H14, is negative and significant (t = −2.81, $\alpha < 0.05$) with a low determinant coefficient ($R^2 = 2.4\%$) (Table 2).

### 3.5. SDQ Dimensions
This section is purposed to verify whether SDQ is a latent variable of decision confidence, positive affection, decision satisfaction, and loyalty intention. Table 3 exhibits the model of second-

**Table 2: Path analysis and determinant coefficients**

| Paths | | Hypothesis | Coefficient | T-value | $R^2$ (%) | Decision |
|---|---|---|---|---|---|---|
| **From** | **To** | | | | | |
| Self-Efficacy | Mastery goals | $H_1$ | 0.99 | 15.62* | 99 | Confirmed |
| | Performance-approach goals | $H_2$ | 0.89 | 15.78* | 80 | Confirmed |
| | Performance-avoidance goals | NH | 0.80 | 12.95* | 64 | Significant |
| Mastery goals | Positive affect | $H_3$ | 1.21 | 7.08* | 60 | Confirmed |
| Performance-approach goals | | $H_4$ | −0.29 | −2.16+ | | Confirmed |
| Performance-avoidance goals | | $H_5$ | −0.25 | −2.65+ | | Confirmed |
| Mastery goals | Decision confidence | $H_6$ | 1.44 | 7.51* | 53 | Confirmed |
| Performance-approach goals | | $H_7$ | −0.54 | −3.65# | | Confirmed |
| Performance-avoidance goals | | $H_8$ | −0.22 | −2.65+ | | Confirmed |
| Decision confidence | Decision satisfaction | $H_9$ | 0.67 | 10.22* | 99 | Confirmed |
| Positive affect | | $H_{10}$ | 0.42 | 8.00* | | Confirmed |
| Decision satisfaction | Loyalty intention | $H_{11}$ | 0.91 | 12.37* | 83 | Confirmed |
| | Switching likelihood | $H_{12}$ | −0.16 | −2.73# | 2.4 | Confirmed |

Source: LISREL 8.8 Outputs. Notes: $^+\alpha<0.05$, $^\#\alpha<0.01$, $^*\alpha<0.001$, NH=Not hyphotesized

order CFA. The model shows that decision satisfaction, decision confidence, loyalty intention, and positive affection have high factor loadings, i.e., 0.98, 0.94, 0.92, and 0.82, respectively. It means that as Hair et al. (2016) specified, each variable has a high contribution to describe their underlying construct.

The AVE and CR used to detect the cohesiveness of the four dimensions. With the factor loadings exhibited in Table 3, the AVE is 0.84, and this value is much higher above its cut-off point (AVE = 0.5). The CR = 0.95, also much higher than its minimal threshold (CR = 0.7). With these results, there is enough evidence to conclude that the four dimensions are part of the same construct called SDQ.

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### 3.6. The Influence of Achievement Goals on SDQ Dimensions

As suggested by Hair et al. (2016), the author used total influence represented by t-value to verify the influence of achievement goals on the student quality dimensions, specified in Table 4. It is evident that mastery goals contribute significantly and positively to the decision satisfaction, positive affect, decision satisfaction, and loyalty intention, and negatively to switching likelihood. Conversely, performance-approach, together with performance-avoidance goals, are contra-productive to all of those dimensions but contribute positively to switching likelihood.

## 4. DISCUSSION

The model of goal-directed student choice quality has an excellent nomological network, as shown by its success in confirming all the hypothesized relationships. The influence of self-efficacy on mastery and performance-approach goals, although it follows the expectation, shows the intriguing results. The influence of

**Table 3: Student decision quality dimensions confirmatory factor analysis**

| Dimension | Factor loading | AVE | CR |
|---|---|---|---|
| Decision satisfaction | 0.98 | 0.84 | 0.95 |
| Decision confidence | 0.94 | | |
| Positive affection | 0.92 | | |
| Attitudinal loyalty intention | 0.82 | | |

self-efficacy on performance-approach goals should be more evident than that of mastery-goals because, as stated by Dweck (1999), people with performance-approach goals view self-efficacy as the key to success, whereas for people with mastery goals, the effort is more critical for success. Contrary to this expectation, this study reveals that the influence of self-efficacy on mastery goals is more potent than that of performance goals. This result may correlate with the nature of the research site. This place is may not the right place for the students to show off their capability. The site also did not attract highly talented students for the high prestige state universities are their most priority. In other words, the students who come to this college tend to have a higher motivation to master their skills instead of satisfying their ego-goals.

The influence of self-efficacy on performance-avoidance goals also has its own story. The positive influence of self-efficacy on performance-avoidance goals reiterates Hsieh et al., (2007) finding on this path. More details, contrary to Bandura (1977), students with high self-efficacy set up high performance-avoidance goals. In this study, this tendency may be evident in the previous system in senior high schools, in which GPA ranking influences strongly students' social status and students' opportunity to enter prestigious state universities through a free-test path. A student with a high GPA ranking will get a better opportunity. Conversely, a student with the lowest GPA ranking will get lower priority in the allocation of the opportunities to get into a more prestigious state university and may enroll in less prestigious state universities. This previous experience makes them being sensitive to performance-avoidance goals.

SDQ consists of decision confidence, positive affection, decision satisfaction, and loyalty intention. These dimensions represent the cognitive, affective, and behavioral dimensions of behavior

**Table 4: Total influence of achievement goals on student decision making components**

| Paths | Decision confidence | Positive affect | Decision satisfaction | Loyalty intention | Switching likelihood |
|---|---|---|---|---|---|
| Mastery goals | | | | | |
|   Coefficient | 1.44 | 1.21 | 1.09 | 1.34 | −0.24 |
|   t-value | 7.51*** | 7.08*** | 7.76*** | 8.21*** | −2.65* |
| Performance-approach goals | | | | | |
|   Coefficient | −0.54 | −0.29 | −0.48 | −0.44 | 0.08 |
|   t-value | −3.65** | −2.16* | −3.79** | −3.79** | 2.25* |
| Performance-avoidance goals | | | | | |
|   Coefficient | −0.24 | −0.25 | −0.25 | −0.23 | 0.04 |
|   t-value | −2.23* | −2.65* | −3.07** | −3.06** | 2.06* |

Source: LISREL 8.8 Outputs, Notes: *$\alpha<0.05$, **$\alpha<0.01$, ***$\alpha<0.001$

(Ajzen and Madden, 1986; Kraft et al., 2005; Kumari and Patyal, 2017). Switching likelihood is out of consideration because of its inner model small determinant coefficient ($R_2 = 2.4\%$, Table 2).

The low efficacy of switching likelihood to indicate SDQ may correlate with Bansal et al., (2005) push, pull, and mooring factors (PPM) theory. This theory states that switching behavior in service depends on push, pull, and mooring factors. Push factors are negative factors in the existing service provider that push customers away, pull factors are positive factors at other service providers that pull people to come. Mooring effect acts as moderating variables that can encourage the migration to a new service provider or deter the potential switchers from leaving their existing service provider. Logically, push, pull, and mooring factors are shaped by experience, not by immediate responses to the decision.

Mastery goals contribute positively, and on the other hand, performance-approach and performance-avoidance goals contribute negatively to all of the SDQ dimensions. The adaptive nature of mastery-approach goals and maladaptive nature of performance-approach and performance-avoidance goals, as explained before, are the reasons for these findings. Previous studies revealed that mastery goals correlate positively with intrinsic motivation (Spinath and Steinmayr, 2012), positive emotions (Maehr and Zusho, 2009; Huang and Zhang, 2011), help-seeking behavior, as well as academic achievement (Greene and Miller, 1996).

Students with mastery-approach goals also demonstrated higher retention and graduation rates than those with performance-approach and performance-avoidance goals orientation. Mastery-approach goals are associated with task persistence within a task (Ames and Archer, 1988). Moreover, people with mastery goals view failure as the effect of insufficient effort or because of inappropriate strategies, while people with performance-approach and performance-avoidance goals see the success or failure as consequences of capability or talent (Dweck, 1999). As a result, mastery goals correlate higher with course grades and satisfaction than the other two goals orientations (Gehlbach, 2006). These arguments support that the mastery goals are positive determinant, and the other two-goal orientations are negative determinants of the SDQ.

## 5. CONCLUSION

The SDQ construct developed in this study is a multidimensional construct. It consists of positive affect, decision confidence,

decision satisfaction, and loyalty intention as positive indicators. The model of goal-directed SDQ is robust and can be used to make early detection of students' loyalty to their university by using achievement goals. Mastery goals contribute positively, but performance-approach and performance-avoidance goals contribute negatively and significantly to all of the dimensions of SDQ.

## 6. LIMITATIONS AND FUTURE STUDIES

This study cannot avoid the difficulty of determining the achievement goals orientation of each respondent. Therefore, the author suggests that other researchers to look for or formulate a method that can specify whether a student is a mastery, performance-approach, or performance-avoidance goals orientation.

This research still relies on a single cross-sectional design. A longitudinal research design is a better choice when researchers aim to detect the change of achievement goals, SDQ dimensions, and their influences on students' achievement at different points in time, as long as the time interval is substantial.

## 7. AKNOWLEDGMENT

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