THE RELATIONSHIP AMONG GOALS, LEARNING STRATEGIES, AND SELF-EFFICACY BELIEFS. STRUCTURAL MODELING APPROACH

Ariani, Dorothea Wahyu*
Mercu Buana Yogyakarta University, Yogyakarta, Indonesia
ariani1338@gmail.com

* corresponding author

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ABSTRACT.
Background - Learning is a necessity for everyone, including employees. Many employees in Indonesia choose to continue their studies for self-development. This is inseparable from the learning strategy chosen. **Aims -** This study aims to investigate the relationship between the three models of achievement goals, learning strategies, and self-efficacy beliefs. **Methods** - Correlation analysis for testing the relationship between variables in accordance with the study hypothesis was carried out after the questionnaire was declared valid and reliable. A SEM with a two-step approach was used to test the relationship model simultaneously. **Sample -** The study was conducted with 506 university working students participating in undergraduate programs in economics and business in Indonesia using a survey questionnaire. **Results** - The model that was found to be the most appropriate was self-efficacy beliefs, which mediated the relationship between achievement goals and learning strategies. The mastery approach was a dimension of achievement goals that consistently and positively influenced each other with deep learning strategies and self-efficacy beliefs. The beliefs also consistently and negatively influenced each other with surface learning strategies. **Conclusions** - The result indicated a consistent relationship and influence between mastery goals, deep learning strategies, as well as self-efficacy beliefs or between performance-avoidance goals, surface learning strategies, and self-efficacy beliefs. **Implications -** This study also strengthened the understanding that individuals with high self-efficacy beliefs have a goal to outperform their peers but are inconsistent in the selection of strategies.

Keywords: mastery approach goals, performance approach goals, performance avoidance goals, deep learning strategies, surface learning strategies, self-efficacy beliefs

JEL Classification*:* example D02, O17, P31

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Introduction

Contemporary studies repeatedly showed that non-cognitive factors such as motivation affect performance (Lee & Stankov, 2013). This is because it plays an important role in predicting attitudes, strategies, and efforts to set goals for achieving high performance (Jiang et al., 2014). Jiang et al. (2014) showed that the motivational construct with the strongest effect on performance was achievement goals. Meanwhile, some studies showed that there was a relationship between achievement goals, self-efficacy, and learning strategies (e.g., Kahraman & Sungur, 2013; Prat-Sala & Redford, 2010). Furthermore, these variables have a mutually influencing relationship and were also discovered to affect academic achievement (Herrmann et al., 2017; Soylu et al., 2017).

Motivation has been considered for a long time as the most important concept in education (Herath, 2015). Research teams still pay a lot of attention to motivation in the learning context, especially in developing student motivation. They also conducted studies with university students as participants to understand their motivation in academic settings (e.g., Kahraman & Sungur, 2013; Linnenbrink-Garcia & Barger, 2014). Several views about the learning process are based on achievement goal theory (AGT), self-determination theory (SDT), and social cognitive theory (SCT) of motivation in various settings, including universities and workplaces (Mesmer-Magnus & Viswesvaran, 2010). AGT has been the most widely used motivation theory for more than three decades. Goal theory places mastery goals orientation (MGO) and performance goals orientation (PGO) in influencing various educational outcomes (e.g., Chen & Wong, 2015; Huang, 2012; Steinmayr et al., 2011). Studies conducted on this subject in Western countries and Asian contexts have provided much and varied empirical support for using the framework (King & Ganotice, 2013).

In addition to achievement goals, self-efficacy beliefs (SEBs) are also motivational variables. It is the main construct in SCT which refers to beliefs and considerations related to their ability to complete tasks (Azar et al., 2010). SEBs are mainly used when individuals find tasks or jobs difficult (Bong et al., 2010), while achievement goals are adopted in certain situations (Jiang et al., 2014). The results showed that there was a relationship between learning strategies, SEBs, and learning outcomes (e.g., Herrmann et al., 2017; Richardson et al., 2012).

Meanwhile, learning strategy is a determining factor in academic performance and knowledge acquisition besides motivation (Cano et al., 2018; Everaert et al., 2017; Garcia et al., 2016). It is also dynamic and used to achieve learning goals that can develop rapidly (Zlatovix et al., 2015). Student Approach to Learning (SAL) has proposed two different learning strategies, namely deep learning strategies (DLS) and surface learning strategies (SLS) (Fryer & Ginns, 2017; Richardson, 2015). The former prioritizes understanding the material, while the latter prioritizes memorizing or repeating material (Cano et al., 2018; Heikkila et al., 2012).

The relationship between motivation, strategies in the learning process, and learning achievement has not been adequately examined since the existing study is limited to the western context (Cano & Berben, 2008). Empirical studies on this matter in the context of non-western culture are expected to provide added value that broadens understanding of the need for motivation and goals in student learning outcomes. This study aims to examine the relationship between achievement goals, learning strategies, and SEBs to understand how students achieve academic performance. The question that arises is whether the students' learning goals and strategies have an effect on estimating their academic performance or whether the strategy is chosen after the students know their academic performance. There are three models tested in this study. First, learning strategies mediate the relationship between achievement goals and SEBs as perceived performance. Second, SEBs mediate the relationship between achievement goals and two learning strategies. Meanwhile, the third model, achievement goals, mediates the relationship between SEBs and learning strategies.

Theoretical background

According to Hulleman et al. (2010), achievement goals orientation (AGO) is defined as future cognitive goals that direct competency-related behaviors in which individuals commit to approaching or avoiding the expected final state. It is also the core construct for motivation studies in achievement settings. The approach is conceptualized as cognitive-dynamic goals that focus on competence. Meanwhile, achievement experts define mastery goal orientation (MGO) as developing individual competencies and performance goal orientation (PGO) as showing individual competencies by outperforming their peers (Senko et al., 2011). Both goals are pursued by students during their

learning process because they are not being mutually exclusive and do not contradict (Martinez-Monteagudo et al., 2018). Therefore, individuals may have two goal orientations and they can be characterized accordingly. They can provide principles that underlie strategies for learning. The multiple goals view states that students can simultaneously use multiple goals in school settings (Wormington & Linnenbrink-Garcia, 2017).

There are two main dimensions of achievement goals, each of which has an approach and an avoidance dimension. AGO is divided into four dimensions, namely mastery-approach goal orientations (MApG), mastery-avoidance goal orientations (MAvG), performance-approach goal orientations (PApG), and performance-avoidance goal orientations (PAvG), they are independent but correlated with each other (e.g., Duchesne et al. 2017; Hackel et al., 2016). Several studies showed that approach and avoidance goals are associated with positive and negative outcomes, respectively (e.g., Linnenbrink-Garcia et al., 2012; Zhou & Wang, 2019). MApG (motivate to master the material and increase knowledge) consistently tends to be associated with positive outcomes (Pantziara & Philippou, 2014; Scherrer et al., 2020). Meanwhile, PAvG (avoid failure in front of others) is consistently associated with less adaptive outcomes (Hall et al., 2016; Turner et al., 2021). PApG studies reported inconsistent results (Senko et al., 2013). Some studies stated that PApG (shows relative competence to others) was associated with positive outcomes (Senko & Dowson, 2017; Zhou & Wang, 2019) while some disagreed Daniels et al., 2009).

Furthermore, MAvG (avoid situations where the individual is unable to learn) is rarely used because it is difficult to conceptualize (Gore, 2014). Until now, it is still poorly understood how students interpret MAvG (Linnenbrink-Garcia & Barger, 2014). Usually, this goal orientation is associated with maladaptive outcomes (Bjornebekk et al., 2013). Senko and Freund (2015) stated that MAvG is not always detrimental. It is chosen when the material to be studied is difficult, not well understood, or students are still in the first semester of college (Turner et al., 2017). Previous studies suggested that adopting MAvG is not as important as adopting MApG (Baranik et al., 2010) or as important as PApG and PAvG (DeShon & Gillespie, 2005). Although it did not get much support from subsequent research teams, VanYperen (2006) discovered that it could improve achievement goals. Therefore, the MAvG dimension was not used in this study. It is not as prominent as the other achievement goals dimension because the construct and predictive validity of this dimension is relatively unknown (Baranik et al., 2010).

In addition to achievement goals which are motivational variables, learning strategy is a key factor influencing academic achievement (Chen et al., 2015). Studies on the relationship between learning strategies and achievement goals still need to be conducted. Achievement goals are sensitive to contextual influences on learning (Dinger & Dickhauser, 2013) and learning strategies (Paulick et al., 2013). The research team stated that the relationship between the two constructs was proven in empirical studies (e.g., Asikainen & Gijbels, 2017; Luftenegger et al., 2016; Martinez-Monteagudo et al., 2018). Each MGO and PGO has consequences. Individuals may pursue different achievement goals because they are driven by specific achievement motivations related to their culture (Abd-El-Fattah & Patrick, 2011). Individuals who adopt MGO generally have adaptive behaviors, such as having a large business and using deep or meaningful learning strategies (King & Ganotice, 2013).

Students' learning strategies or approaches are divided into two general categories, namely low or surface-level strategies (SLS) and high or deep level strategies (DLS) (Kadioglu & Kondakci, 2014). They are both mutually exclusive strategies (Everaert et al., 2017). At DLS, students try to understand what is learned. This is carried out by involving thinking and integration between learning components and assignments. Furthermore, it includes deep motives, such as an interest in ideas or learning, while SLS includes motives for fear of failure and using rote learning strategies without using ideas (De la Fuente et al., 2017). DLS includes a rehearsal strategy, while the alternative includes elaboration and organization (Kadioglu & Kondaksi, 2014). It also requires a higher cognitive level and helps conceptual understanding, while SLS is used for simple tasks, such as remembering and repeating information until students remember (Luftenegger et al., 2016).

Logically, both learning strategies can comprehensively improve attainment grades (Cano et al., 2018; Everaert et al., 2017). Fox et al. (2010) affirmed that successful students will adopt both by combining an understanding of the material and organizing studies or awareness of assessment requirements. Motivation and learning strategies are related to one another, therefore, they can explain academic performance (Garcia et al., 2016). MGO is associated with a set of positive and adaptive affective processes, such as adopting DLS, whereas PGO is considered maladaptive and is associated with negative motivation and cognition like the use of SLS (Martinez-Monteagudo et al., 2018). Several studies indicated that there was a positive relationship between DLS and performance (e.g., Chen et al., 2015; Herrmann et al., 2017; Murayama et al., 2013; Shearer et al., 2015) or a negative relationship between SLS and performance (e.g., Baeten et al., 2010; Garcia et al., 2016;

Yaratan & Kasapoglu, 2012). Meanwhile, Elias (2005) discovered no significant effect of DLS on performance but confirmed the negative relationship between SLS and academic achievement. Students with DLS and those with SLS aim to understand and reproduce the material, respectively (Everaert et al., 2017).

Furthermore, a relationship between achievement goals, learning strategies, and SEBs was also discovered (e.g., Mason et al., 2013; Pantziara & Philippou, 2014; Turner et al., 2021). SEBs are beliefs that they can do well in an academic setting, feel comfortable, never give up, and perform better (Bandura, 1997). It refers to individuals' thoughts that they can successfully achieve a certain performance level (Pantziara & Philippou, 2014). It was also stated that high and low SEBs were related to approach and avoidance goals, respectively (Lee & Mao, 2016). Meanwhile, some studies showed that the beliefs were antecedent achievement goals (Azar et al., 2010) however, some indicated that they were consequences of achievement goals Mentis-Koksoy & Aydiner-Uygun, 2018). SEBs are also influenced by DLS and SLS (Aydiner-Uygun, 2020; Cano et al., 2018).

Some studies concentrated on the relationship between AGO and learning strategies or grades in the class (e.g., Geitz et al., 2015; Koopman et al., 2014). As motivation variables, AGO also arouses individuals to choose learning strategies or approaches (Chai et al., 2016; Rashid & Rana, 2019). Furthermore, culture influences the learning strategies used (McLaughin & Durrant, 2017). There is evidence that educational outcomes are related to learning strategies (e.g., Everaert et al., 2017; Senko et al., 2013; Wyn-Williams et al., 2016). In an educational concept, DLS relates to MGO, SLS to PGO (Aydiner-Uygun, 2020; Chen et al., 2015; Chotitham et al., 2014; Herrmann et al., 2017; Geitz et al., 2015; Ohrstedt & Lindfors, 2019), while PApGO and PAvGO relate to SLS (Abd-El-Fatta, 2018; Ferla et al., 2010). High SEBs are associated with MGO and PApG, but usually, only individuals with MGO use DLS, while SLS is associated with low SEBs and PavG (Azar et al., 2010; Prat-Sala & Redfort, 2010).

Based on previous studies, there are three models of the relationship that can be developed between these variables. The first model is learning strategies mediating the relationship between achievement goals and self-efficacy as perceived performance. In other words, achievement goals affect the selection of learning strategies used, while learning strategies affect SEBs.

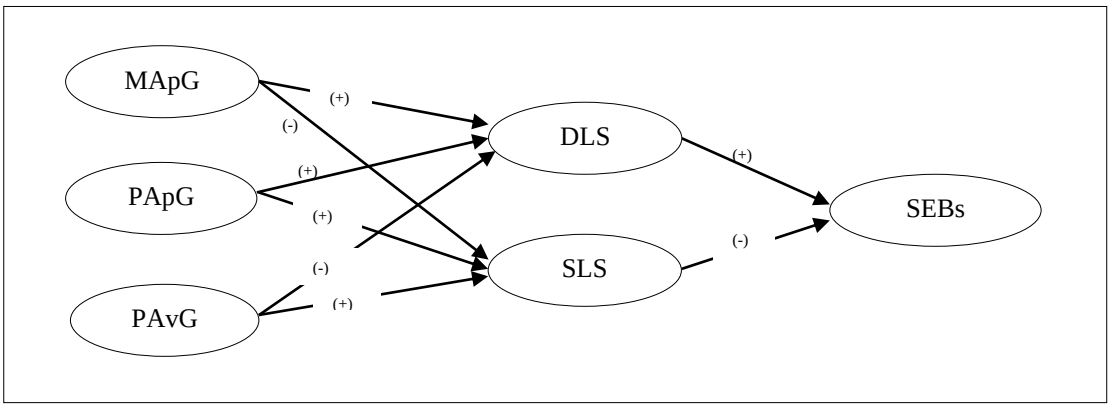

Figure 1. First Model: Learning Strategies Mediate the Effect of Achievement Goals on Self-Efficacy Beliefs

Zubkovic and Kolic-Vehovec (2014) stated that achievement goals are predictors of strategies used in learning. Students adopt learning strategies after setting achievement goals, hence, the right learning strategies can produce achievements. Empirical evidence showed that the goals pursued by students are related to the learning strategies used (e.g., Abd-El-Fatta, 2018; Everaert et al., 2017). Broadbent and Poon (2015) showed a relationship between motivation, strategy, and learning achievement. Learning strategies play a mediator role in the relationship between motivation and learning performance (Lin et al., 2017; Zhou & Wang, 2019). Lin et al. (2017) and Wang et al. (2013) explicitly stated that goal orientation affects performance through learning strategies.

The second model, SEBs mediates the relationship between achievement goals and two learning strategies. Achievement goals have different effects on SEBs (Hiver & Al-Hoorie, 2016; Turner et al., 2021). Furthermore, learning strategies selection is carried out after the students can perceive their academic abilities. Individuals who perceive high abilities will choose a DLS, while those who perceive low abilities will adopt an SLS (Ohrstedt & Lindfors, 2016).

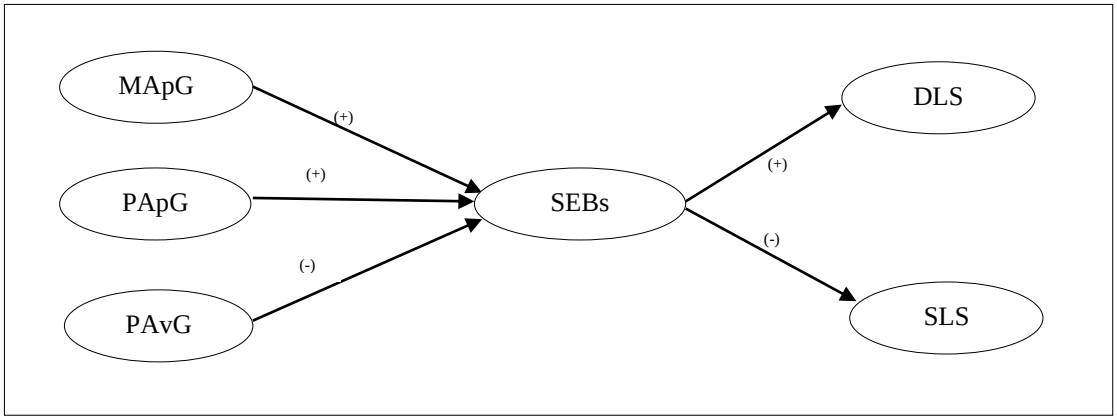

Figure 2. Second Model: Self-Efficacy Beliefs Mediate the Effect of Achievement Goals on Learning Strategies

The effect of goal orientation on academic achievement has been studied extensively (e.g., Huang, 2012; Zhou & Wang, 2019). Academic achievement is not only a grade point average (GPA) but can be a student's ability perception (self-efficacy) which involves the perception of personal abilities to achieve the expected results (Bong & Skaalvik, 2003). Goal orientation uniquely affects perceived performance or SEBs (Bipp & van Dam, 2014; Bjornehekk et al., 2013; Diseth & Kolbeltvedt, 2010; Scherrer et al., 2020). Generally, MApG and PAvG have positive and negative effects on SEBs, respectively (e.g., Mason et al., 2013; Mentis-Koksoy & Aydiner-Uygun, 2018; Senko et al., 2013). The effect of PApG on SEBs is inconsistent. Several studies showed that it had a positive effect (e.g., Chen & Wong, 2015; Honicke & Broadbent, 2016; Senko & Dowson, 2017). Students with MApG and PAvG usually use DLS and SLS, respectively (Shyr et al., 2017). In addition, individuals with high SEBs prefer DLS to SLS (Gargallo et al., 2015).

The third model, achievement goals, mediates the relationship between SEBs and learning strategies. It shows that the achievement goals are based on students' perceptions of the goals to be achieved. Students will set goals to increase and deepen their knowledge or show ability beyond their peers when they believe in their abilities. Meanwhile, they will set goals to avoid appearing incapable when indeed, they feel that they are not capable.

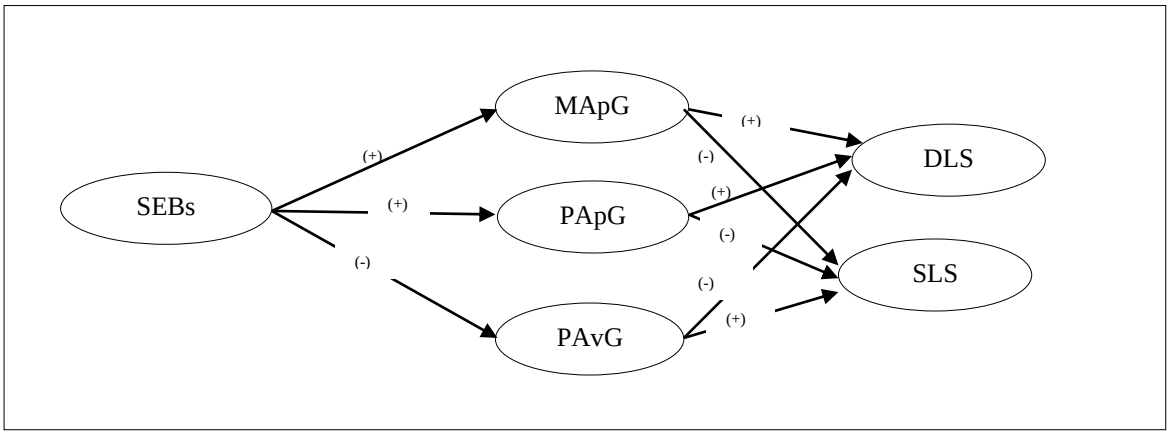

Figure 3. Third Model: Achievement Goals Mediate the Effect of Self-Efficacy Beliefs on Learning Strategies

When students believe that they can achieve high performance, they will choose higher goal achievement or set goals for mastery of the material (Honick & Broadbent, 2016; Jiang et al., 2014). Also, students with high SEBs will adopt MApG and PApG, while those with low SEBs will adopt PAvG (Liem et al., 2008; Kizilgunes et al., 2009). Meanwhile, MApG positively influences DLS (Azar et al., 2010), and in an educational context, MGO is associated with DLS and PGO with SLS (Shyr et al., 2017). MGOs can predict learning strategies, while PGOs do not because they are negatively correlated with achievement (Pantziara & Philippou, 2014). Mastery-oriented students process learning

information at a deep level (e.g., Aydiner-Uygun, 2020; Koopman et al., 2014; Mason et al., 2013; Shyr et al., 2017; Soyer & Kirikkanat, 2018; Zubkovic & Kolic-Vehovec, 2014). Meanwhile, the PGO relationship is diverse and controversial (De la Fuente et al., 2017; Zhou &Wang, 2017). PApG relates to the use of SLS (e.g., Abd-El-Fatta, 2018; Hoffman et al., 2019; Koopman et al., 2014; Senko et al., 2013, Shearer et al., 2015) and DLS (e.g., Abd-El-Fatta, 2018; Geitz et al., 2015). However, according to other research teams, there was no relationship between PApG and the two levels of learning strategies (Elliot, 1999).

Methodology

Participants

This study was conducted on working students who were actively studying at a private university in Yogyakarta, Indonesia. The sample selection was carried out using a purposive sampling technique for six months. Moreover, the respondents were students who had been studying for at least two years and had worked for at least one year. This was because they are evaluated in the first two years for eligibility to be able to continue lecturing or not and also choose the field of specialization, and has status as a permanent employee. The specialization reflects the students' motivation and the strategies they choose to complete college. In this study, 506 students participated as respondents from 1000 students who were given questionnaires (response rate = 50.6%). The number was determined based on multivariate criteria, which required a minimum number of respondents equal to five times the number of question items used in this study. The questionnaires contained 30 items, therefore, the minimum sample was 150 people. In addition, confirmatory factor analysis was used as a tool to test the validity of the questionnaire. According to Hair et al. (2014), factor analysis requires a minimum of 300 respondents. Based on these considerations, 506 respondents were deemed sufficient to meet the requirements.

Measurement Scale

This study used a questionnaire adopted from Elliot and McGregor (2001) to measure the AGO dimensions and from Biggs et al. (2001) to measure two learning strategies. Meanwhile, a six-item questionnaire used in measuring SEBs was adopted from Kaplan and Maehr (1999). 5 items of MApG questions (for example, *It is important for me to understand this course material as completely as possible*, $\alpha = 0.866$), 5 items of PApG questions (for example, *It is important for me to perform better than other students,* $\alpha = 0.839$), and 4 items of PAvG questions out of 5 items used (for example, *I just want to avoid poor performance in class,* $\alpha = 0.722$) were valid and reliable. Meanwhile, for the learning strategy, 5 items of DLS questions (for example, *I spent a lot of free time discovering more about interesting topics that have been discussed in class,* $\alpha = 0.806$), and 5 items of SLS questions (for example, *I learned some things by repeatedly memorizing until I know it even though I don't understand it*, $\alpha = 0.702$) were valid and reliable. Finally, 6 SEBs items (for example, *even though the coursework is difficult, I can do it,* $\alpha = 0.838$).

Procedures

This study used primary data through a questionnaire distributed to students who were still active for at least two college years. The questionnaire utilized a five Likert Scale ranging from very disagree to strongly agree. A content validity test was conducted by asking an organizational behavior expert to evaluate the question items. Some students were also asked to read the questionnaires before distributing them to the respondents.

Furthermore, the construct validity was tested with confirmatory factor analysis (CFA) and reliability with the internal consistency of the questionnaire after obtaining the questions. The validity test was carried out using CFA with a loading factor of more than 0.5 or practically significant (Hair et al., 2014). Meanwhile, reliability testing using Cronbach Alpha was at least 0.7, as suggested by Hair et al. (2014). Correlation analysis was conducted to test the relationship between the two variables used in this study. A two-step approach in Structural equation modeling (SEM) using AMOS was used to test the four dimensions effect of AGO on two dimensions of learning strategies.

Results

Validity and Reliability Analysis

After testing the construct validity by factor analysis with a loading factor of more than 0.5 and reliability testing with a Cronbach Alpha of at least 0.7, subsequently, 14 of 16 question items used for AGO testing were declared valid and reliable. The loading factor ranged between 0.529 and 0.859. The five-question items in MApG had a loading factor from 0.624 to 0.856 and a Cronbach Alpha of 0.866. The five-question items in PApG gave a loading factor from 0.569 to 0.845 and Cronbach Alpha 0.839. The four-question items in PAvG had a loading factor from 0.529 to 0.807 and Cronbach Alpha 0.722. Meanwhile, the 10 question items used to test the learning strategies showed that all the items were declared valid and reliable. The loading factor for the ten items in question ranged from 0.601 to 0.805. The five-question items in DLS showed a loading factor from 0.615 to 0.805 and a Cronbach Alpha of 0.806. The five-question items in SLS gave a loading factor between 0.601 and 0.706 and Cronbach Alpha 0.702. Moreover, the six question items in self-efficacy beliefs showed a loading factor from 0.582 to 0.830 and a Cronbach Alpha of 0.818.

Descriptive Statistics

After the questionnaire was declared valid and reliable, correlation testing was conducted to examine the relationship between variables used and to test multi-collinearity between independent variables when the correlation between independent variables was more than 0.8. In addition, the mean was required to analyze the goals being pursued, the students' learning strategies, and the self-efficacy beliefs. Standard deviation was also needed to analyze deviations that may arise when the calculation is repeated. Descriptive statistics and correlation results are presented in Table 1.

Table 1. Mean, Standard Deviation, Reliability, Correlations between Variables

	1	2	3	4	5	6
PAvG (1)	1.000	0.312**	0.091*	0.053	0.426**	0.001
PApG (2)		1.000	0.495**	0.346**	0.156**	0.347**
MApG (3)			1.000	0.562**	- 0.044	0.423**
DLS (4)				1.000	- 0.067	0.503**
SLS (5)					1.000	- 0.154**
SEBs (6)						1.000
Mean	3.4570	3.6379	4.0040	3.5621	3.3004	3.7289
Std. Dev.	0.6638	0.6530	0.5960	0.5729	0.6021	0.6015
Cronbach's α	0.722	0.839	0.866	0.806	0.702	0.838

Notes: **p < 0.01 level (2-tailed)
*p < 0.05 level (2-tailed)

Table 1 showed that there was no correlation between the two learning strategies used by students. DLS was significantly and positively related to MApG as well as PApG and was not significantly related to PAvG. Meanwhile, SLS was significantly and positively related to PAvG and PApG. There was no correlation between SLS and MApG. The three dimensions of AGO were positively correlated, except between MApG and PavG. Furthermore, SEBs were positively correlated with PApG, MApG, as well as DLS, and were negatively correlated with SLS. Meanwhile, PavG was not significantly correlated with SEBs. The average DLS and SEBs were high (more than 3.67), while the other four variables were moderate (between 2.34 to 3.66). Moreover, all the variables in this study had a high standard deviation (more than 0.50), which indicated that the respondents independently filled out the questionnaire.

Simultaneous Model Testing Results

Based on the testing results, the three relationship models proposed in this study are shown in Figures 4, 5, and 6. The first model was not modified, but not all effects were significant. Meanwhile, the second and third models were modified according to the existing theory or data, and there were some insignificant effects.

Figure 4 shows the testing results of the first model, which indicated that DLS was positively affected by MApG and PApG, while SLS was positively affected by PAvG. This is consistent with previous studies (e.g., Diseth, 2011; Koopman et al., 2014; Zubkovic & Kolic-Vehovec, 2014).

Furthermore, DLS can increase SEBs, while SLS can reduce SEBs. This is consistent with previous studies (e.g., Garcia et al., 2016; McInerney et al., 2012; Ohrstedt & Lindfors, 2016). DLS that emphasizes understanding and experience, with an emphasis on critical thinking and knowledge, needs to be supported by the goals pursued by students, both the goal of mastering knowledge and demonstrating more abilities than others. Meanwhile, SLS is supported by the goal of students who do not want to appear less capable or less successful. This fear encourages students to use memorization strategies without understanding the material being studied. The first model test results were consistent with the previous studies that learning strategies mediate the relationship between motivation and perceived performance (e.g., Lin et al., 2017; Zhou & Wang, 2019). The positive effect of DLS and the negative effect of SLS on perceived performance also confirmed previous results (e.g., Chen et al., 2015; Everaert et al., 2017; Garcia et al., 2016; Murayama et al., 2013; Shearer et al., 2015; Zheng et al., 2018).

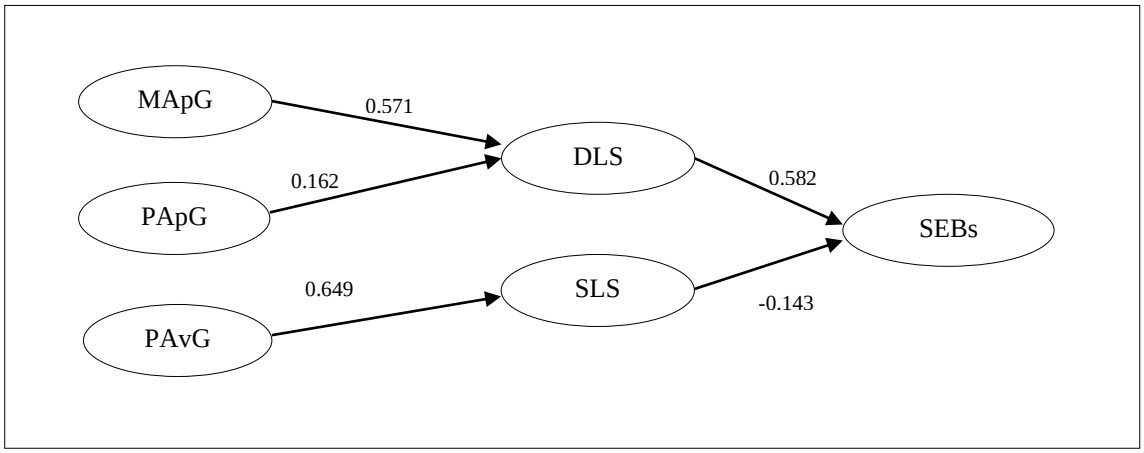

Figure 4. The First Model Testing Results: Learning Strategies Mediate the Effect of Achievement Goals on Academic Self-Efficacy Beliefs

According to the second model testing, some modifications were supported by theory and matched the existing data. The second model discovered a direct effect of MApG on DLS and PAvG on SLS. The modification results are presented in Figure 5.

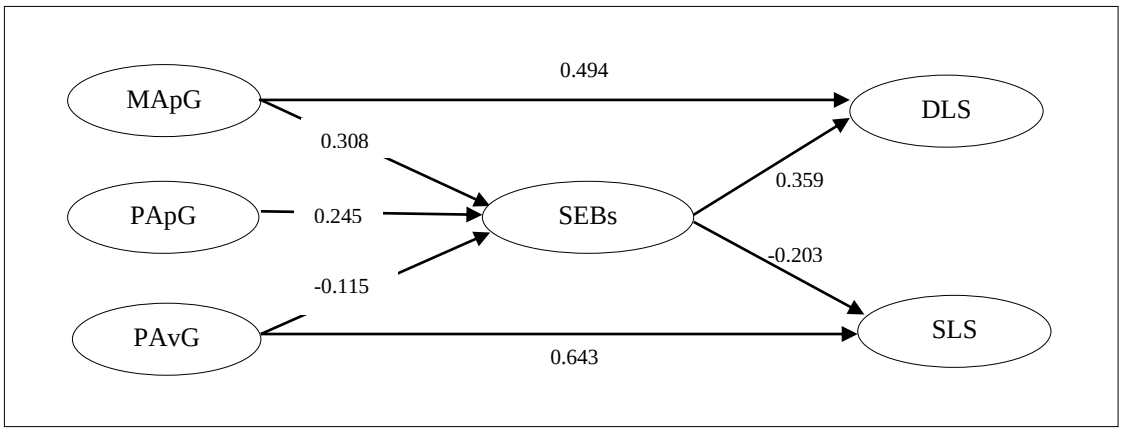

Figure 5. The Second Model Testing Results: Self-Efficacy Beliefs Mediate the Effect of Achievement Goals on Learning Strategies

Figure 5 shows that approach goals positively influenced SEBs, while avoidance goals had a negative effect. The testing results of this model were consistent with previous studies (e.g., Mason et al., 2013; Soylu et al., 2017; Turner et al., 2021; Zafarmand et al., 2014). High or low SEBs were influenced by the goals to be achieved. Generally, approach goals can increase confidence that is capable of obtaining certain achievements. Meanwhile, avoidance goals will reduce SEBs. SEBs positively influenced DLS and had a negative effect on SLS. High SEBs encourage individuals to choose learning strategies that prioritize material deepening, while individuals with low SEBs tend to memorize material without

understanding it properly (Geitz et al., 2016; Shen et al., 2016; Kulakow, 2020). Furthermore, MApG and PAvG affected DLS and SLS, respectively. The direct influence of achievement goals on this learning strategy was consistent with previous studies (e.g., Diseth, 2011; Koopman et al., 2014; Shyr et al., 2017; Zubkovic & Kolic-Vehovec, 2014).

The third model required the most modifications because there was no match between the theory and existing data. This can be seen in the modified index and the difference between the goodness-of-fit index (GFI) and the adjusted goodness-of-fit index (AGFI). The third model modification results are presented in Figure 6.

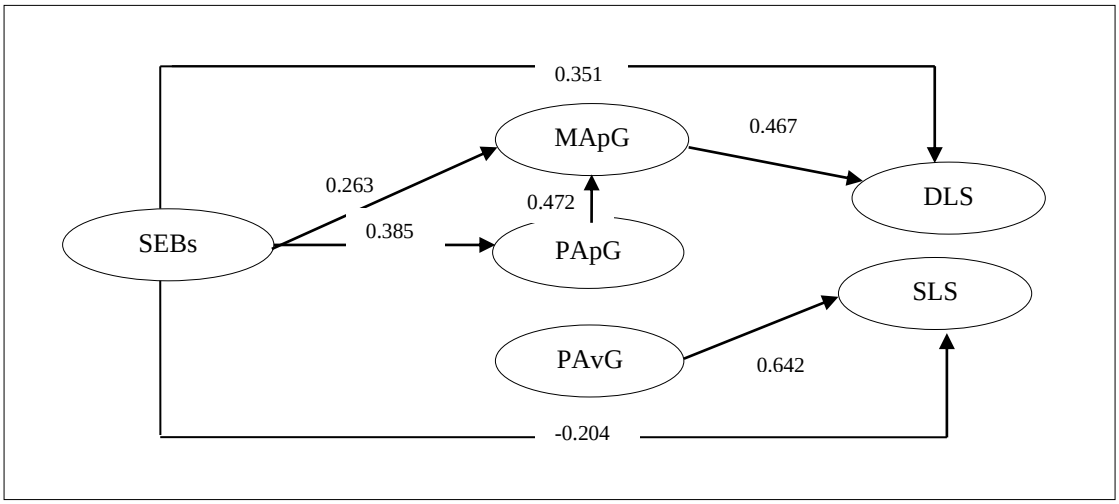

Figure 6. Third Model Testing Results: Achievement Goals Mediate the Effect of Academic self-Efficacy Beliefs on Learning Strategies

Figure 6 showed that SEBs only positively influenced approach goals and showed no effect on PAvG. Individuals with high SEBs will set higher goals, both to increase knowledge and to outperform their friends. This is consistent with previous studies by researchers (e.g., Azar, 2010; Bruning et al., 2013; Lee & Mao, 2016). MApG and SEBs consistently influence DLS. Meanwhile, PAvG consistently had a positive effect on SLS. The existence of a relationship or influence between SEBs, motivation, and learning strategies was consistent with previous studies. Besides being influenced by PAvG, SLS was also influenced by SEBs. SEBs decreased the use of learning strategies by memorizing. In this third model, PApG influenced MApG. In other words, the superior desire compared to others encourages individuals to increase their knowledge. This is in line with previous studies which reported that the combination of mastery and performance goals could motivate individuals more (e.g., Pantziara & Philippou, 2014; Senko et al., 2011; Wormington & Linnenbrink-Garcia, 2017).

Among the three relationship models based on the theory and previous studies, the model that most aligned with the theory and previous results or was most appropriate to the existing data was selected. As a comparison, various criteria were chosen. The comparison of the model's test results is presented in Table 2.

Table 2. Model Fit Index

	Chi-Square/DF	GFI	AGFI	CFI	RMR	RMSEA	NFI	IFI	TLI
Model 1	3.801	0.990	0.948	0.982	0.009	0.074	0.977	0.983	0.934
Model 2	0.342	0.999	0.999	0.999	0.021	0.001	0.997	0.999	0.999
Model 3	17.938	0.977	0.818	0.950	0.015	0.102	0.942	0.951	0.875

CFI = Comparative Fit Index
RMR = Root Mean-square Residual
RMSEA = Root Mean Square Error of Approximation
NFI = Normed Fit Index
IFI = Incremental Fit Index
TLI = Tucker-Lewis Index

The model testing results showed that the three models were in accordance with the theory and data based on absolute fit indices criteria (GFI > 0.95, AGFI > 0.95, RMR < 0.08, according to Hooper et al., 2008 suggestion). However, based on Chi-square/DF criteria as proposed by Hooper et al. (2008), the second model which had the smallest Chi-square/DF value, was the best. Likewise, with the criteria for RMSEA < 0.07, only the second model met the absolute suitability requirement (Steiger, 2007). However, based on the criteria for NFI > 0.95, comparative fit index or CFI > 0.95, and TLI > 0.95, as suggested by Hooper et al. (2008), the third model did not meet the NFI requirements. Therefore, the second model was the best as it met the requirements of conformity in SEM.

Strategy is almost always associated with culture and structure. Learning strategies are influenced by learning culture, which is also related to how learning is done (learning structures). In the context of Hofstede's cultural dimensions, learning culture is related to future uncertainty avoidance and long term orientation (Hofstede, 2011). This is often seen in the presence of stress, fatigue, anxiety, health and subjective well-being. Therefore, it is necessary to develop learning objectives that can generate self-confidence that individuals are able to achieve goals through appropriate learning strategies. Related to the focus on the long term, learning strategies must be adapted to the environment. Success is due to the right strategy and failure is caused by mistakes in formulating strategies.

Conclusion

Although MGO and PGO are mutually exclusive dimensions, this study indicated that they were correlated, although not all of them. Some students can be high in one dimension and low in another, while there are students who are high in both. According to the results, MApG positively influenced DLS but consistently had a negative effect on SLS. Competency development combination, mastery of new material, demonstrating competence, and obtaining positive assessments from others influence students' efforts to understand what is learned, understand or work with learning concepts and ideas without memorizing learning material. MApG is an achievement goal orientation dimension that directly or indirectly influences DLS through SEBs. Likewise, PAvG consistently increased the use of SLS as it was chosen by individuals with low self-efficacy beliefs.

Achievement goals, learning strategies, and self-efficacy are indeed three variables that influence each other. Each of them can be an antecedent and a consequence. However, the most appropriate relationship model with existing theory and data is that achievement goals affect the determination of learning strategies mediated by SEBs. Learning strategies which are performance predictors, were proven to be influenced by self-efficacy and achievement goals. Students' goals, SEBs, and learning strategies are three important factors that influence each other in improving performance.

This study provided several contributions. By paying attention to MGO learning strategies, teachers can provide challenging assignments, help students discover new skills, control the learning process or make decisions about it. Moreover, they help students to develop MApG, support the use of higher-order strategies, and enhance their learning. Goals are most effective when consistent or in context. PGO becomes adaptive when applied to educational contexts. The influence of MGO and PGO varies depending on the context. Therefore, future studies need to include social relations factors as independent or moderating variables.

This study had some limitations. Firstly, the data were obtained through self-report measurement at a time from several universities and grade levels, hence, there was a social desirability bias and a common method variance that can increase beta values. Furthermore, future studies need to separate the appraisers of independent and dependent variables from overcoming these problems. Secondly, this study could not make a causal explanation because it only looks at one moment for the variables. Therefore, a longitudinal study is needed to observe the causal relationship between the variables.

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