Tracking Students’ Longitudinal Academic Motivation

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Academic motivation is one of the most important factors which influences the degree of success a student will experience in achieving their academic goals. The current study represents the second phase of a longitudinal study which tracks a group of Japanese university students as they progress through their four-year college education. Following precursor research, 532 participants were given a Japanese version of the Academic Motivation Scale, which measures motivation for academic pursuits in seven scales (three types of both intrinsic and extrinsic motivation, plus amotivation), based on the self-determination theory of motivation. Results indicated that, in line with results from the first phase of the study, students remained largely motivated by intrinsic factors. However, one intrinsic factor was shown to slightly decrease, while one extrinsic factor slightly increased, indicating a slight trend toward extrinsic motivation. Data and motivational profiles for students who dropped out between Phases One and Two are reported, though the sample size \( n = 11 \) was too small to produce sufficient statistical power for analysis.

**Key Words**: academic motivation, Japanese tertiary education, self-determination theory

1. Introduction

Perhaps one of the most important independent variables in the human condition is that of motivation. It is common knowledge that tasks will not only be easier, but the outcomes will be more favorable if the people involved are motivated to do them. Naturally, the same holds true in education. Motivation, in a general sense, is “why people decide to do something, how long they are willing to sustain the activity, and how hard they are going to pursue it” (Dörnyei & Skchan, 2003, p. 614)(1). Specifically, the current study is focused on the field of education and students’ motivation to pursue academic endeavors (i.e., academic motivation) at a tertiary level. Academic motivation researchers have delineated several different types of motivators (e.g., internal vs. external forces; see Section 2) which are thought to combine to form a composite motivational profile which can help elucidate what motivates/demotivates a person. This continuation of a longitudinal study which tracks academic motivation of students through their time in university (Lee, 2020)(2), addresses the following research questions (RQ):

RQ 1: What are the academic motivation profiles of these students in their sophomore year?

RQ 2: How have the students’ academic motivation profiles changed over the course of their freshman year?

RQ 3: Are there any academic motivation profiles which can be viewed as predictors of truancy and withdrawal?

2. Review of the Literature

2.1 Academic Motivation

Two main theories have dominated academic motivation circles over the past few decades: expectancy-value theory and self-determination theory. Starting with Eccles and Wigfield’s expectancy-value theory (e.g., Eccles, 1987)(3); Wigfield & Eccles, 1992(4), 2000(5)), this construct posits that students’ motivation stems from the calculus of two basic questions: **(A)m I
capable of doing this? (i.e., expectancy) and (W)hat can I get out of doing this? (i.e., value). In other words, in order for students to exert the effort needed to succeed at a task, they have to feel that they are not only confident in their ability to complete it, but also feel that it is worthwhile to do so. This calculus is affected by various factors (i.e., task values), such as interest, attainment, utility, and cost, which refer to how enjoyable, influential, useful, or emotionally draining a task is. This theory is often contrasted with Ryan and Deci’s (2000)\(^6\) self-determination theory (SDT), which views motivation as either originating from within (i.e., intrinsic) or without (i.e., extrinsic). Intrinsic traits may be a person’s curiosity for knowledge, or the desire to make a personal achievement. Extrinsic traits encompass all other motivators, such as the desire for accolades or recognition from others. The desire to avoid negative consequences, such as punishment or embarrassment, are also extrinsic. However, extrinsic motivators, which have their origins from without, may become self-determined over time as the person internalizes/integrates them. The degree to which this happens is seen as emanating from feelings of competence and relatedness (similar to the expectancy-value theory), and also autonomy (i.e., the ability for a person to control their own actions). This is the main difference to the expectancy-value theory, which does not consider personal choice (i.e., autonomy) as a factor in the construct.

### 2.2 Previous Research in the Japanese Context

A review of the research on academic motivation in the Japanese context was conducted by searching through major indices of publications in the English language (Scopus, Science Direct, Google Scholar). Unfortunately, such search efforts returned very few results, with the bulk of studies dealing with motivation directed at language learning and not general academic motivation. As these two constructs of motivation are disparate and not necessarily correlated (e.g., Lee, 2020)\(^2\), these studies will not be reviewed at present. It may be possible that more relevant studies have been published in the Japanese language, though these are also not able to be reviewed at this time.

What studies that were identified may also not be applicable to the current study as the contexts were slightly different. For example, Carrerina (2011)\(^7\) tracked longitudinal changes in academic motivation among 268 Japanese elementary students over a course of four years (from third to sixth grade). Under the SDT construct, she reported that the students’ intrinsic motivation generally declined over this time period, with a multiple-regression analysis indicating that curiosity was a predictor of this type of motivation. This finding was somewhat mirrored by Nishimura and Sakurai (2017)\(^8\), who tracked 410 junior high school students over the course of three years (from seventh to ninth grade). Of interest, they found that the students did not become less motivated overall, but that their motivation profiles generally shifted from intrinsic to extrinsic. They note that while some students showed a decrease in intrinsic motivation with a concurrent increase in extrinsic, other students maintained their intrinsic motivation while experiencing increases in extrinsic factors.

In another study which sought to elucidate predictors of academic motivation among Japanese, Koyanagi et al., (2021)\(^9\) investigated 2247 university students and the interrelations between academic motivation and social connections, both in and outside the classroom. While this study did not look at longitudinal changes in motivation over time, their results suggested that social connections inside the classroom influenced both intrinsic and extrinsic motivation the most, followed by that of familial relations. The authors highlighted the importance of developing social bonds of trust within the classroom in order to foster positive motivation.

Finally, some researchers have examined academic motivation from a cross-cultural perspective. This study’s precursor research (Lee, 2020)\(^2\), compared the motivation profiles of Japanese students versus their classmates who came to study in Japan from overseas, finding that non-resident students generally had higher motivation for garnering achievements, while also having higher extrinsic motivation and signs of amotivation (i.e., feelings of disconnect). This result closely mirrored that of Bui et al., (2015)\(^10\), who similarly found that Japanese students reported less motivation towards achievements and less motivation from external forces. In the reverse pattern, Manalo et al., (2006)\(^11\) compared motivation of Japanese students in Japan versus those who went to study abroad (New Zealand). While this study did not detect significant differences in intrinsic motivation, they similarly reported higher levels of extrinsic motivation among the non-resident condition. In addition, they found that the students in Japan demonstrated greater levels of amotivation, which typically reflects a negative outlook on the future.
3. Study Design

3.1 Participants

As a longitudinal study, this research took place at the same institute as the initial study (Lee, 2020): a small, private university in rural Japan. In the previously published first phase of the study, the entire incoming freshman class of the university was invited to the study, with 606 students agreeing to participate (only 591 responses were valid). For the current study, these same 591 students were invited to participate once more. However, due to factors such as attrition from the university, or attrition from the study, only 532 students agreed to participate for a second time. Participants represented each academic department at the university: electrical engineering ($n = 83$), mechanical engineering ($n = 86$), architecture/civil engineering ($n = 78$), nuclear engineering ($n = 26$), environmental/food sciences ($n = 36$), management & information sciences ($n = 93$), graphic & interior design ($n = 62$), and sports & health sciences ($n = 68$).

3.2 Materials

As in the initial study, the Academic Motivation Scale (AMS) was the primary data collection instrument. Since its creation by Vallerand et al. (1989), the AMS has been one of the most widely adopted and translated instruments in the field of motivation research. Its validity and reliability have been assessed in a number of contexts, both Western and non-Western countries (e.g., Algharaibeh, 2020 for Jordan, Saudi Arabia, United Arab Emirates, & Syria; Akoto, 2014 for Ghana; Alivernini & Lucidi, 2008 for Italy; Bacanli & Sahinkaya, 2011 for Turkey; Burgueño et al., 2017 for Spain). Of particular salience to the current study, it has also been translated into Japanese and validated in the Japanese tertiary education context through the work of Manalo et al. (2006) and Bui et al. (2015), and employed in the first stage of the current research (Lee, 2020) (see Appendices for English and Japanese versions of the AMS). Formal validation and reliability measurements of the AMS will be presented in Section 4.1.

The AMS is based on the self-determination theory of motivation and is composed of 28 items which seek to measure seven variables (i.e., four items for each variable) on a seven-point Likert scale. Intrinsic motivation is broken down into three types (intrinsic motivation to experience stimulation, intrinsic motivation towards accomplishments, intrinsic motivation to acquire knowledge), as is extrinsic motivation (external regulation, introjected regulation, and identified regulation). External regulation refers to motivation that originates and resides entirely outside the individual (e.g., doing a loathsome task merely for monetary reward). Introjected regulation refers to motivation for an act that has been partially internalized. This is more commonly understood as acting out of guilt or a sense of responsibility (e.g., spending time with one’s in-laws over a long vacation instead of doing what one truly wants to). Identified motivation, on the other hand, is the closest to intrinsic motivation in that the person recognizes (i.e., identifies) the potential benefits of an act. Their motivation is therefore linked to the result of the act, and not the act itself. The final variable that the AMS measures is amotivation, which is akin to apathy. Amotivated students view potential outcomes as predetermined, regardless of their actions. They therefore see little reason to act or otherwise engage as their participation is inconsequential to the outcome.

The translated AMS was prepared in electronic format through the university’s learning management software (LMS), Manaba. Students could access and complete the AMS by computer or smartphone. Issues of access were not problematic as students at this university are required to either possess or purchase laptop computers upon matriculation, and past research has found smartphone ownership among the student body as being 99.56% (Lee, 2019).

3.3 Methods

As in the initial study, the AMS was administered to the participants during Orientation Week of the first semester (i.e., Spring) of their sophomore year. This was done to ascertain the students’ initial states of mind (i.e., before the start of their first class). However, due to the COVID-19 pandemic, this was conducted online through the university’s LMS instead of the in-person, paper-based surveys of the initial study. As the electronic format allowed for the specification that all items must be answered before submission was allowed, all 532 responses were valid, with no instances of missing data. The responses
were thus directly entered into a dataset using IBM’s Statistical Package for the Social Sciences (SPSS), version 23. As the study aimed to investigate how students’ academic motivation changes over time, the dataset from the initial study was compared to the current dataset and instances of missing data between administrations of the AMS were deleted listwise to eliminate data from members who dropped out of the study. The following data analyses therefore only compare data from participants who submitted the AMS at both instances.

4. Results

4.1 Validation and Reliability of the AMS

In order to confirm the suitability of the AMS as an instrument to measure academic motivation in the current Japanese context, the factor structure was first tested through a series of confirmatory factors analyses (CFA) using IBM’s SPSS Amos (version 20) add-on program. In line with previous AMS researchers (e.g., Bui et al., 2015; Cokley et al., 2001; Fairchild et al., 2005), four CFA models were tested: one, three, five, and seven factors. The three-factor model was composed of amotivation, intrinsic, and extrinsic indices. The five-factor model grouped the three intrinsic indices into a single factor as it has been suggested that these items tend to show high correlation. The four CFA models are shown below in Figure 1.

Figure 1
Path Diagrams for the Four Competing CFA Models

Due to the subjective nature of CFAs and the large number of participants in the study, $\chi^2/df$ ratios were calculated to reduce the sensitivity of $\chi^2$ to sample size (Cokley et al., 2001). In addition, goodness-of-fit statistics (GFI), Tucker-Lewis indices (TLI), comparative fit indices (CFI), root mean square error of approximation (RMSEA) and standard root mean square residuals (SRMR) were considered, as reported below in Table 1. GFI, CFI, and TLI values which are closer to 1.00 are indicators of better fit (TLI > .90 indicate acceptable fit), while RMSEA and SRMR values lower than .08 are considered to be reasonable/adequate fit. The lower the $\chi^2/df$ ratios are to 0, the better the hypothesized model fits the data. As can be seen in Table 1, the seven-factor model showed the best fit overall. The three-factor model showed the same GFI and RMSEA as the seven-factor model, and a higher TLI by .01, but the $\chi^2/df$, CFI, and SRMR values for the seven-factor model indicated a much better fit to the data (particularly SRMR, which failed to cross the .08 threshold in the three-factor model). On this basis, the original seven-factor model of the AMS was determined to be the best fit. The results of the current study were also compared to the two known existing studies which used the AMS in the Japanese tertiary context (Bui et al., 2015; Manalo et al., 2006), which also determined that the seven-factor model was the most valid structure.
Table 1

<table>
<thead>
<tr>
<th>Results of Model Competition</th>
<th>χ2</th>
<th>df</th>
<th>χ2/df</th>
<th>GFI</th>
<th>TLI</th>
<th>CFI</th>
<th>RMSEA</th>
<th>SRMR</th>
</tr>
</thead>
<tbody>
<tr>
<td>One-factor model</td>
<td>3441.62</td>
<td>350</td>
<td>9.83</td>
<td>.57</td>
<td>.55</td>
<td>.58</td>
<td>.13</td>
<td>.12</td>
</tr>
<tr>
<td>Three-factor model</td>
<td>2377.70</td>
<td>347</td>
<td>6.85</td>
<td>.86</td>
<td>.88</td>
<td>.72</td>
<td>.070</td>
<td>.105</td>
</tr>
<tr>
<td>Five-factor model</td>
<td>1579.19</td>
<td>340</td>
<td>4.64</td>
<td>.80</td>
<td>.81</td>
<td>.83</td>
<td>.083</td>
<td>.081</td>
</tr>
<tr>
<td>Seven-factor model</td>
<td>1178.54</td>
<td>329</td>
<td>3.58</td>
<td>.86</td>
<td>.87</td>
<td>.88</td>
<td>.070</td>
<td>.07</td>
</tr>
<tr>
<td>Manalo et al. (2006)[13] *</td>
<td>950.96</td>
<td>337</td>
<td>2.82</td>
<td>-</td>
<td>-</td>
<td>87</td>
<td>0.078</td>
<td>-</td>
</tr>
<tr>
<td>Bui et al. (2015)[14] *</td>
<td>626.82</td>
<td>323</td>
<td>1.94</td>
<td>.80</td>
<td>.84</td>
<td>.87</td>
<td>.071</td>
<td>.093</td>
</tr>
</tbody>
</table>

Note. Data from Manalo et al., (2006)[13] and Bui et al., (2015)[14] are from their seven-factor models.

Having determined that the seven-factor model was the best fit to the collected data, internal consistency was assessed by obtaining both Cronbach’s alpha (α) and McDonald’s omega (ω) values, reported below in Table 2. Generally, both measures of reliability are interpreted as: > .70 (good); > .80 (better); > .9 (best), the difference between α and ω being that ω is considered to be more accurate when factor loadings are not assumed to be equal. Based on the evidence from these two measures, the reliabilities of the seven sub-scales were determined to be within acceptable ranges.

Table 2

<table>
<thead>
<tr>
<th>Reliability Statistics of AMS Sub-Scales (Cronbach’s α)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Items</td>
</tr>
<tr>
<td>α</td>
</tr>
</tbody>
</table>

Note. IMse = intrinsic motivation (for stimulating experiences)
IMa = intrinsic motivation (for achievement)
IMk = intrinsic motivation (for knowledge)
EMidr = extrinsic motivation (from identified regulation)
EMintr = extrinsic motivation (from introjected regulation)
EMer = extrinsic motivation (from external regulation)
A = Amotivation

4.2 Overall Results

The data was first analyzed globally for means (M) and standard deviations (SD) for each matrix of motivation, the results of which are outlined below in Table 3 (see Appendix A for a breakdown of the composition of each matrix). Note that as the AMS utilizes a 7-point Likert scale, a score of 4.00 indicates a neutral response. Scores greater than 4.00 indicate a positive influence of that matrix, while a score less than 4.00 indicates a negative influence. Also note that the calculations for Year One are slightly different from those reported in Lee (2020)[2], as these figures were recalculated with the new N (i.e., 532), and should therefore be considered as original data of the current study.

Table 3

<table>
<thead>
<tr>
<th>Descriptive Statistics of Reported Motivation Types Over Time (N = 532)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMse</td>
</tr>
<tr>
<td>Year One</td>
</tr>
<tr>
<td>5.11 (1.10)</td>
</tr>
<tr>
<td>Year Two</td>
</tr>
<tr>
<td>5.03 (1.11)</td>
</tr>
</tbody>
</table>
4.3 Research Question 1

A brief overview of the results displayed in Table 3 shows that in Year Two, all matrices of intrinsic motivation were above 4.00. This indicates that the participants were influenced by motivation for stimulating experiences (IMse: $M = 5.03; \ SD = 1.11$), personal or academic achievements (IMa: $M = 4.77; \ SD = 1.16$), and knowledge (IMk: $M = 4.99; \ SD = .99$). By contrast, all three indices of extrinsic motivation were below 4.00, indicating that factors of identified regulation (EMidr: $M = 3.63; \ SD = 1.19$), introjected regulation (EMintr: $M = 2.71; \ SD = 1.19$), and external regulation (EMer: $M = 3.89; \ SD = 1.19$) were not significant motivators for them. In addition, the amotivation value ($M = 3.68; \ SD = 1.30$) suggests that the participants did not feel strongly amotivated. These results form the basis of the answer to RQ1, which asked, *(W)hat is the academic motivation profile of these students in their sophomore year?* It appears that the students were generally intrinsically motivated, not extrinsically motivated, and not amotivated.

4.4 Research Question 2

The second research question of this longitudinal study sought to investigate, *(H)ow have the students’ academic motivation profiles changed over the course their freshman year?* In order to answer this question, a paired-samples t-test was performed to determine if there were any significant differences in the motivation profiles of the students between Year One and Year Two. The output of the t-test is reported below, in Table 4. Note that with large sample sizes (e.g., $N > 50$), assumptions of normality which are normally associated with the t-test have been shown to be unnecessary as even substantial deviations from normality are not statistically significant (e.g., Glass et al., 1972; Harwell et al., 1992; Lix et al., 1996).

<table>
<thead>
<tr>
<th>Comparison</th>
<th>$t$</th>
<th>$df$</th>
<th>$p$</th>
<th>$d$</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMse</td>
<td>-1.18</td>
<td>1062</td>
<td>.24</td>
<td>.07</td>
<td>-.24-.10</td>
</tr>
<tr>
<td>IMa</td>
<td>-2.72*</td>
<td>1062</td>
<td>.007</td>
<td>-.17*</td>
<td>-0.34-.004</td>
</tr>
<tr>
<td>IMk</td>
<td>-1.92</td>
<td>1062</td>
<td>.06</td>
<td>-.13</td>
<td>-0.30-.04</td>
</tr>
<tr>
<td>EMidr</td>
<td>-1.53</td>
<td>1062</td>
<td>.13</td>
<td>-.09</td>
<td>-0.26-.08</td>
</tr>
<tr>
<td>EMintr</td>
<td>6.61**</td>
<td>1062</td>
<td>&lt;.001</td>
<td>.40**</td>
<td>.23-.57</td>
</tr>
<tr>
<td>EMer</td>
<td>-9.96</td>
<td>1062</td>
<td>.07</td>
<td>-.06</td>
<td>-0.23-.11</td>
</tr>
<tr>
<td>A</td>
<td>-1.64</td>
<td>1062</td>
<td>.10</td>
<td>-.10</td>
<td>-0.27-.07</td>
</tr>
</tbody>
</table>

* * denotes significance at the $p < .05$ level
** * denotes significance at the $p < .001$ level

As can be seen in Table 4, only differences in the motivation types of IMa and EMintr reached levels of statistical significance ($p = .007$ and $p < .001$, respectively). When examining the degree to which these motivation types changed after one year, Cohen’s $d$ effect sizes of -.17 and .40 were obtained, respectively. As a Cohen’s $d$ effect size of .2 is considered to be the cutoff for a small effect (Cohen, 1988), the IMa result of $d = -.17$ is therefore considered to be negligible, while the EMintr result of $d = .40$ is considered to be small. However, it is worth noting that as IMa is a measure of intrinsic motivation, while EMintr is a measure of extrinsic motivation, their movement in opposite directions essentially compounds the effect. In other words, the participants became slightly less intrinsically motivated, and slightly more extrinsically motivated. The other matrices of IMse, IMk, EMidr, EMer, and A, which decreased overall, did not reach levels statistical significance. In fact, the only motivation type to show an increase was that of EMintr ($t = 6.61$). The answer to RQ2 is therefore: the participants became less motivated towards gaining achievements, and more motivated from introjected regulation (i.e., motivated by guilt or a sense of responsibility).
4.5 Research Question 3

The final research question asked, (A)re there any academic motivation profiles which can be viewed as predictors of truancy and withdrawal? Unfortunately for this study (but fortunately for the university), only 11 participants from the initial study were found to have withdrawn from the university over the span of the study. The results will nonetheless be presented in Table 5, but any statistical analyses should be interpreted as lacking in robustness as the statistical power of only 11 participants is insufficient to make any generalizable claims.

Table 5

Descriptive Statistics of Reported Motivation Types Among Students Who Withdrew (n = 11)

<table>
<thead>
<tr>
<th></th>
<th>IMse</th>
<th>IMa</th>
<th>IMk</th>
<th>EMidr</th>
<th>EMintr</th>
<th>EMer</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>M (SD)</td>
<td>5.02 (1.06)</td>
<td>4.18 (1.18)</td>
<td>4.22 (1.15)</td>
<td>3.52 (.97)</td>
<td>3.02 (1.26)</td>
<td>3.83 (.99)</td>
<td>3.67 (.94)</td>
</tr>
</tbody>
</table>

Statistical analyses are not possible due to both the low number of members in this subgroup and the disparity in samples sizes between this and the main group. However, impressionistically, there is some indication that while this subgroup similarly showed intrinsic motivation (i.e., all intrinsic matrices were above 4.00), the values for IMa and IMk were lower than that of the main group. As these two indices represent the desire of the participants to make achievements and gain knowledge, they might be considered as more salient to a college education than IMse, which simply expresses a person’s desire for stimulating experiences. Stimulating experiences may be found in any number of ventures, not limiting itself to a college education. However, as the available data is insufficient to make any valid conclusions, this research question must be considered to be unanswerable at present. As this study is longitudinal, the number of dropouts will undoubtedly increase over time, possibly allowing for more robust statistical evidence as time progresses.

5. Discussion

The current longitudinal study sought to investigate how a group of Japanese university students’ academic motivation changed over time (i.e., their first year of university). Beginning with their academic motivation upon matriculation to the university (see Table 3), the finding that the students scored greater than 4.00 for all intrinsic motivation indices is encouraging. Intrinsically motivated students are more likely to be academically successful as they tend to have higher grit (e.g., Giordano, 2019)\(^{25}\), engagement (e.g., Putra et al., 2017)\(^{26}\), and learner autonomy (Kusurkar et al., 2011)\(^{27}\), all of which have been posited as being key factors for realizing learning outcomes (see also Discussion from Lee, 2020)\(^{28}\). However, over the course of their first year at the university, it appears that the motivational profiles of the students shifted slightly in several ways. First, all three measures of intrinsic motivation, and two measures of extrinsic motivation decreased slightly (see Table 3). However, there was a concurrent increase in one form of extrinsic motivation (introjected regulation), and a decrease in amotivation. These results indicate that students did not become more demotivated/apathetic over their first year, though their motivators appeared to change significantly.

The result reported in Table 4 that intrinsic motivation for achievement (IMa) decreased slightly, and introjected regulation (EMIntr) increased slightly (i.e., RQ2) was a key finding. While “achievements” can refer to any number of things, it should be noted that the AMS refer specifically to academic achievements (i.e., Items #6, 13, 20, 17; see Appendix A). For example, a decrease in IMa might indicate a student’s decreased interest in scoring perfectly on every test or maintaining a perfect 4.0 GPA. While this decrease in IMa was below the threshold of what could be considered to be a small effect despite being statistically significant, it can be seen as opposing the matrix of EMintr, which moved in the opposite direction. EMintr (introjected regulation) refers to one’s internalized, pressuring voice. In other words, this represents motivation due to guilt or a sense of responsibility. It is logical that as a student progresses through a four-year Bachelor of Arts program, EMintr would gradually increase, as the personal investment in both time and money accumulates. In addition, if the student’s parents are
the ones paying the tuition, awareness of the growing financial burden on the family might also contribute to an increase in EMintr.

6. Limitations and Future Directions

One major limitation of any longitudinal study is that the longer the study endures, the more chances there are for complications to arise. As mentioned in Section 3.1, data collection in this second phase of the study suffered from absenteeism, study attrition, and university attrition, reducing the sample size from \( N = 591 \) (Lee, 2020)\(^2\) to \( N = 532 \). Much more salient for the study was the onset of the global COVID-19 pandemic, which forced all classes at the university to suddenly transition into online learning mode in Spring 2020. It is unknown how this might have affected the results of the current study, as data collection was conducted in Orientation Week before online classes had ever begun. This was hoped to reduce the impact that online learning might have had on the students’ academic motivation, as at the time of data collection, they had yet to experience it. However, the knowledge that classes had moved online for an entire academic year, and the disruption to societal norms that COVID-19 brought about, might have influenced their attitudes towards school, nonetheless.

Unfortunately, the introduction of this massive confounding variable all but precludes the continuation of this study in the future. It does, however, open new avenues of exploration. It would be interesting to research whether academic motivational profiles could be correlated as predictors of success/failure in remote learning. The physical absence of both an instructor and peers (i.e., classmates, study partners, friends) places a higher emphasis on a student’s intrinsic motivation, as there is no structure to offer either moral support or external motivation such as threats, guilt, or reminders to get/stay on task. In the case of COVID-19, the isolation of remote learning is compounded by the social isolation of quarantining, maintaining social distance, and avoiding public places in general. Unfortunately, the impact of this isolation on students and their academic motivation is beyond the scope of the current study.

Lastly, the results of the current study hinted at a potential relationship between the two factors of IMa and EMintr. As stated in Section 5, it is feasible that IMa waned as students’ lofty goals upon matriculation slowly gave way to the realities and daily grind of college life. Likewise, EMintr was seen to wax, as students may have begun to feel the weight of investing a full year of their time, effort, and money towards their education. This may have increased the feeling among students that they “owed” it to their family, and indeed themselves, to see their education through to the end. However, it would be interesting to investigate whether this pattern of IMa waning and EMintr waxing holds true through all four years of the students’ progress, or whether it reverses towards the end of their programs. It may be found that as students approach the realization of their degrees, their desire for this achievement will grow, and thus be reflected in scores of IMa. Similarly, as the remaining time, requisite effort, and outstanding tuition decrease, EMintr will hold less power to motivate the students. Future longitudinal studies of this nature are thus highly encouraged to provide educators and institutional stakeholders more insight into college students’ motivating factors.

7. Conclusion

The current study represented the second phase of a longitudinal study investigating Japanese university students’ academic motivation and how it changed over time. A total of \( N = 532 \) participants were given the AMS to measure their motivational profiles based on 7 factors: IMse, IMa, IMk, EMidr, EMintr, EMer, and A. First, it was found that students entered their second year of university motivated primarily by the three intrinsic factors of IMse, IMa, and IMk, a pattern which followed from their first year (Table 3; see also Lee, 2020\(^2\)). However, the motivational patterns showed small, but significant differences from their first year, with IMa slightly decreasing, and EMintr slightly increasing. This indicates a decrease in the students’ desire for academic achievements and an increase in their motivation based on feelings of guilt or responsibility to either themselves or others. Unfortunately, the third research question that the study sought to answer regarding motivation profiles of students who withdrew from college, was unable to be answered definitively. Due to the small sample size available (\( n = 11 \), Table 5), while it appears that dropouts showed lower scores for IMa and IMk, the
statistical power of this sample is too low to be considered valid in the current context. Future research is therefore needed to explore this, and other factors such as the potential relationship between IMa and EMintr that was hinted at in answer to RQ2.

8. References


Appendix A - English version of the Academic Motivation Scale

9. Appendices

Appendix A - English version of the Academic Motivation Scale

Why do you go to college?
1) Because with only a high-school degree I would not find a high-paying job later on.
2) Because I experience pleasure and satisfaction while learning new things.
3) Because I think that a college education will help me better prepare for the career I have chosen.
4) For the intense feelings I experience when I am communicating my own ideas to others.
5) Honestly, I don’t know; I really feel that I am wasting my time in school.
6) For the pleasure I experience while surpassing myself in my studies.
7) To prove to myself that I am capable of completing my college degree.
8) In order to obtain a more prestigious job later on.
9) For the pleasure I experience when I discover new things never seen before.
10) Because eventually it will enable me to enter the job market in a field that I like.
11) For the pleasure that I experience when I read interesting authors.
12) I once had good reasons for going to college; however, now I wonder whether I should continue.
13) For the pleasure that I experience while I am surpassing myself in one of my personal accomplishments.
14) Because of the fact that when I succeed in college, I feel important.
15) Because I want to have “the good life” later on.
16) For the pleasure that I experience in broadening my knowledge about subjects which appeal to me.
17) Because this will help me make a better choice regarding my career orientation.
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18) For the pleasure that I experience when I feel completely absorbed by what certain authors have written.
19) I can’t see why I go to college and frankly, I couldn’t care less.
20) For the satisfaction I feel when I am in the process of accomplishing difficult academic activities.
21) To show myself that I am an intelligent person.
22) In order to have a better salary later on.
23) Because my studies allow me to continue to learn about many things that interest me.
24) Because I believe that a few additional years of education will improve my competence as a worker.
25) For the “high” feeling that I experience while reading about various interesting subjects.
26) I don’t know; I can’t understand what I am doing in school.
27) Because college allows me to experience a personal satisfaction in my quest for excellence in my studies.
28) Because I want to show myself that I can succeed in my studies.

Scoring key:
IMse: #4, 11, 18, 25
IMa: #6, 13, 20, 27
IMk: #2, 9, 16, 23
EMidr: #3, 10, 17, 24
EMinr: #7, 14, 21, 28
EMer: #1, 8, 15, 22
A: #5, 12, 19, 26

Appendix B - Japanese translation of the Academic Motivation Scale

どうしてあなたは大学に行くのですか？
1) 高校卒業の資格だけでは、そのあと高給の職業をみつけることができないのである。
2) 新しいことを学ぶ時、喜びと満足感を得ることができるから。
3) 大学教育は、私が選んだキャリアに備える助けとなるだろうと考えているから。
4) 自分の考えを他の人と意思疎通する時に感じる強い満足感のため。
5) 正直に言ってわからない。私は実際大学で自分の時間を無駄にしている感じがする。
6) 学業で自分の限界に挑戦することに喜びを感じるから。
7) 大学の学位を得るだけの能力があることを自分自身に証明するため。
8) 卒業後、より社会的認識の高い職業につくため。
9) 以前は知らなかった新しい事柄を発見することに楽しさを感じるから。
10) 最終的に自分の好きな職業分野につくことを可能にしてくれるから。
11) 面白い著作を読むのに喜びを感じるから。
12) 以前は私は大学に行くきもとした理由があったが、今では続けるべきかどうか迷っている。
13) 自分の能力の限界を超えるような経験をすることに喜びを感じるから。
14) もし良い成績で卒業できれば、自分は価値のある人間だと思えるから。
15) 卒業後「いい生活」がしたいから。
16) 興味のある科目の知識が広がることに喜びを感じるから。
17) 職業の方向けに定めやすい選択をする助けになるだろうから。
18) ある著者の書いたもの（作品、論文）に完全にのめりこむことに喜びを感じるから。
19) どうして大学に行くのかわからない。正直に言ってあまり気にしていない。
20) 困難な事を成し遂げる過程で満足感が得られるため。
21) 自分が知的であることを自分自身に示すため。
22) 卒業後高給をもらうため。
23) 自分が興味のあることを学び続けることができるから。
24) 余裕に数年教育を受けることが社会人としての能力を向上させると信じているから。
25) 車々しい面白い分野について読んでいる時に感じる気持ちの高揚のため。
26) わからない。自分が大学でなにをやっているか理解できない。
27) 大学で優秀な成績を修めることによって個人的満足感が得られるから。
28) 勉強で成功することが可能であることを自分自身に示したいから。

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