# The Influence of Training and Development and Learning Motivation on the Academic Performance of Students at the Open University Overseas Service

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***Abstract.***
*Students of Universitas Terbuka Layanan Luar Negeri (UTLLN) pursue distance education under varied learning conditions. Many also work, making preparedness and motivation important for sustaining academic activities. This study examined the effects of training and development and learning motivation on UTLLN students' academic performance. Data came from an online Likert-scale questionnaire. Of 168 responses, 153 were analyzed after screening and the removal of one pilot response. IBM SPSS Statistics supported the preliminary instrument assessment, while PLS-SEM in SmartPLS 4 was used to examine relationships among the constructs. Training and development had a positive effect on academic performance, with a path coefficient of 0.225 and a p-value of 0.009. Learning motivation also had a positive effect, with a path coefficient of 0.570 and a p-value below 0.001. Together, both constructs explained 49.2% of the variance in academic performance. Learning motivation contributed more strongly than training and development. These findings suggest that institutional academic support should be accompanied by efforts to help students maintain commitment and regular study habits.*
***Keywords:*** *Academic Performance; Distance Education; Learning Motivation; PLS-SEM; Training And Development.*

## I. INTRODUCTION

Distance learning systems provide students with the flexibility to study without being constantly present on campus. For UTLLN students, this flexibility is crucial because they live in different countries and face different working conditions, time zones, and access to technology. At the same time, they manage their study schedules, use of learning resources, and complete assignments more independently. A study by Chung et al. (2022) showed that motivation and self-regulation were among the factors most consistently associated with student achievement in online higher education.

This context is evident in this study, as 90.8% of respondents work full-time. Course material alone is not necessarily sufficient when students must juggle work and study. Academic support is needed to help students understand learning systems, manage time, and use learning services effectively. Walsh et al. (2024) found that online academic support can be related to engagement, motivation, self-efficacy, study completion, and academic performance. Somuah et al. (2024) also emphasized the importance of service availability and help-seeking behavior among distance learning students.

Training and development can be part of this support. Ajabar (2024) differentiates training that focuses on current needs from development that prepares for long-term capabilities. Swanson (2022) places skills development through training as a crucial part of human resource development. In the context of students, this can take the form of learning orientation, use of digital platforms, strategies for completing assignments, and time management.

Available programs may not provide the same benefits to all students. Access, relevance of materials, opportunities for participation, and application of learning outcomes may vary. Noor et al. (2022) demonstrated that digital platforms and learning behaviors are related to student motivation and knowledge development. Olvido et al. (2024) also demonstrated that distance learning experiences are influenced by adoption challenges, the digital divide, personal processes, community support, and the learning process.

Learning motivation is another important element. Woolfolk and Usher (2023) explain that motivation is related to choice, effort, and persistence in the learning process. Meng and Hu (2023) found that online learning behaviors contribute to the relationship between motivation and academic performance. In this study, motivation was measured through enthusiasm, persistence, responsibility for completing tasks, academic commitment, and learning consistency.

In distance learning, students need to plan and monitor their learning activities. Navarro et al. (2023) showed that self-regulation strategies and academic self-efficacy are related to technology acceptance, learning perceptions, and performance in distance learning. Xu et al.'s (2023) meta-analysis also found positive effects of self-regulated learning interventions on academic achievement in both online and blended environments. Jin et al. (2023) added that self-regulation support needs to consider students' activeness and position as managers of their learning process.

Academic performance in this study reflects respondents' assessments of material understanding, achievement of results, completion of assignments, fulfillment of obligations on schedule, and overall performance. The measurement did not use official Open University grades. This selection should be read as an academic perception, not a substitute for a grade point average.

Previous research has largely addressed motivation, self-regulation, online support, and skill development separately. This study combines Training and Development and Learning Motivation into a single model, with Academic Performance as an endogenous construct. The goal is to test both direct pathways and assess the model's ability to explain variation in UTLLN students' Academic Performance.

## II. RESEARCH METHODS

A quantitative approach with an explanatory design was used in this study, and the choice of this design was based on the focus of the study which tested the relationship between constructs through numerical data.(Machali, 2022)The research model comprises two exogenous constructs, namely Training and Development (PDP) and Learning Motivation (MB), which are then connected to an endogenous construct called Academic Performance (KA). Thus, testing is conducted to see the effect of PDP on KA and the effect of MB on KA. Thus, all hypotheses proposed in this study are tested using statistical analysis that is appropriate to the characteristics of the data collected from respondents.

The population in this study included all active students of the Open University for Foreign Service during the research period. Respondent selection was carried out using a non-probability sampling technique that applied a purposive sampling approach. The selected respondents had to meet several requirements, namely willingness to participate in the research and status as a UTLLN student and still be registered as an Open University student after completing the lecture process for at least one semester. Domicile in Japan was not used as a final criterion because the population coverage includes UTLLN students located in various countries.

The questionnaire was distributed online. A total of 168 responses were collected. After reviewing the screening criteria and completeness of the responses, 154 responses met the initial requirements. One response was found to be a pilot test of the instrument and was excluded from the analysis. Thus, the final data set consisted of 153 respondents. All final data had complete answers to the 15 main items, eliminating the need for missing data imputation.

The research instrument consists of five Training and Development items (PDP1–PDP5), five Learning Motivation items (MB1–MB5), and five Academic Performance items (KA1–KA5). Training and Development includes academic preparation, readiness to face academic demands, independent learning skills, time management skills, and development program support. Learning Motivation includes enthusiasm, perseverance, responsibility in completing tasks, academic commitment, and learning consistency. Academic Performance includes understanding the material, achieving results, completing tasks, fulfilling academic obligations, and assessing overall academic performance.

Each item is measured using a five-point Likert scale: 1 for Strongly Disagree, 2 for Disagree, 3 for Neutral or Undecided, 4 for Agree, and 5 for Strongly Agree. All items are ordered positively so that reversal of scores is not necessary.

Initial examination of the instrument was carried out using IBM SPSS Statistics via Corrected Item-Total Correlation and Cronbach's Alpha. Items are considered to meet internal validity if the Corrected Item-Total Correlation is at least 0.30. A construct is considered reliable if Cronbach's Alpha is at least 0.70.

The main analysis was conducted using the Partial Least Squares Structural Equation Modeling method, run through SmartPLS 4. The selection of PLS-SEM is based on the fact that this research relies on

latent constructs reflected by a number of indicators and emphasizes efforts to explain and predict the relationships between constructs. The measurement model in this study is defined as a reflective model, and the adequacy of the sample size is evaluated by considering the level of model complexity and referring to applicable guidelines in PLS-SEM. With the presence of two predictors that lead to one endogenous construct and supported by 153 valid cases, the sample size is considered adequate for the model.research (Hair et al., 2022; Hair & Alamer, 2022)

The model was assessed in two sequential phases. In the first phase, the external model was assessed by examining the outer loading and reliability reflected in Cronbach's Alpha and rho_A, followed by composite reliability, convergent validity indicated by the Average Variance Extracted, and discriminant validity measured using the Heterotrait-Monotrait Ratio. The second phase involved assessing the internal model, which involved examining the Variance Inflation Factor to detect multicollinearity, R-square and f-square as measures of influence, and path coefficients to assess the strength of the relationships between constructs. To test the significance of the relationship, a two-sided bootstrapping procedure was applied at a 5% significance level. A hypothesis was considered supported when the t-statistic exceeded the threshold of 1.96 and the p-value was below 0.05, with the additional requirement that the 95% confidence interval did not contain zero.

**Table 1. Operationalization of Research Constructs**

| Construct | Item Code | Amount | Scale |
|---|---|---|---|
| Training and Development | PDP1-PDP5 | 5 | Likert 1-5 |
| Motivation to learn | MB1-MB5 | 5 | Likert 1-5 |
| Academic Performance | KA1-KA5 | 5 | Likert 1-5 |
| Total | - | 15 | - |

*Source: Processed research data, 2026.*

## III. RESULTS AND DISCUSSION

### Respondent Characteristics

Respondent characteristics are an important foundation in understanding the research results as a whole. Of the total 153 participants, the majority were women with a total of 87 people or equivalent to 56.9% while the remaining 66 people or 43.1% were men. The largest age dominance was in the 20 to 29 year range covering 106 people or 69.3% of the total sample, then the 30 to 39 year age group contributed 43 people or 28.1% and three other participants were in the 40 to 49 year age category. One answer that contained more than one option on the age question was retained as a demographic note because it did not impact the measurement of the main construct being studied.

In terms of study duration, the majority of respondents are studying at the 5th to 6th semester stage, reaching 53 people or equivalent to 34.6% of the total. The next group is those who are already in the 7th semester and above with a total of 47 people or around 30.7% while there are 35 respondents who are still in semesters 3 to 4 and 18 others are only in the first semester, namely semesters 1 to 2. If accumulated, as many as 100 respondents or 65.3% have entered semester 5 or more, indicating that most students have had quite a long experience in getting to know and adapting to the learning system implemented by the Open University.

The most prominent characteristic is the respondents' employment status. A total of 139 respondents, or 90.8% of the total, held permanent full-time jobs. Eight others worked part-time, four were unemployed, and two worked as domestic workers or housekeepers. This indicates that the majority of students were juggling their studies while still working. This situation underscores the importance of time management, development support, and motivation to learn as factors that explain their academic achievement.

**Table 2. Summary of Respondent Characteristics**

| Characteristics | Dominant Category | Frequency | Percentage |
|---|---|---|---|
| Gender | Woman | 87 | 56.9% |
| Age | 20-29 years old | 106 | 69.3% |
| Study program | Bachelor of Management | 69 | 45.1% |
| Semester | Semester 5-6 | 53 | 34.6% |
| Employment status | Working full time | 139 | 90.8% |

*Source: Processed research data, 2026.*

**Initial Validity and Reliability Examination**

The results of the initial examination of validity and reliability showed that through SPSS all items had Corrected Item-Total Correlation values that exceeded the threshold of 0.30. In the Training and Development construct, the value was recorded in the range of 0.757 to 0.833, while for Learning Motivation it was in the range of 0.675 to 0.834 and Academic Performance showed a range of 0.625 to 0.775. All 15 items were declared to have passed the internal validity test so that there was not a single item that needed to be removed from the instrument.

The Cronbach's Alpha value reached 0.919 for the Training and Development variable, while Learning Motivation scored 0.901 and Academic Performance recorded 0.880. All three figures exceeded the 0.70 threshold, indicating strong internal consistency for each instrument. The analysis of Cronbach's Alpha if Item Deleted did not indicate a statistical basis for eliminating specific items, as the overall alpha value remained superior to the value resulting from individual item deletions.

**Table 3. Summary of SPSS Validity and Reliability Tests**

| Construct | Item-Total Correlation Range | Cronbach's Alpha | Decision |
|---|---|---|---|
| Training and Development | 0.757-0.833 | 0.919 | Valid and reliable |
| Motivation to learn | 0.675-0.834 | 0.901 | Valid and reliable |
| Academic Performance | 0.625-0.775 | 0.880 | Valid and reliable |

*Source: Processed research data, 2026.*

**Evaluation of Measurement Model**

The outer loadings of all indicators ranged from 0.751 to 0.906. PDP values ranged from 0.856 to 0.885, MB from 0.799 to 0.906, and KA from 0.751 to 0.872. All indicators exceeded the 0.708 threshold and were retained in the model.

**Table 4. Outer Loading Results**

| Construct | Indicator | Outer Loading | Decision |
|---|---|---|---|
| Training and Development | PDP1 | 0.863 | Fulfil |
| | PDP2 | 0.876 | Fulfil |
| | PDP3 | 0.874 | Fulfil |
| | PDP4 | 0.856 | Fulfil |
| | PDP5 | 0.885 | Fulfil |
| Motivation to learn | MB1 | 0.799 | Fulfil |
| | MB2 | 0.810 | Fulfil |
| | MB3 | 0.870 | Fulfil |
| | MB4 | 0.906 | Fulfil |
| | MB5 | 0.852 | Fulfil |
| Academic Performance | KA1 | 0.751 | Fulfil |
| | KA2 | 0.773 | Fulfil |
| | KA3 | 0.872 | Fulfil |
| | KA4 | 0.856 | Fulfil |
| | KA5 | 0.856 | Fulfil |

*Source: Processed research data, 2026.*

Cronbach's Alpha ranged from 0.880 to 0.921, rho_A from 0.887 to 0.927, and rho_C from 0.913 to 0.940. The AVE of PDP was 0.758, MB from 0.720, and KA from 0.678. These results met construct reliability and convergent validity.

**Table 5. Construct Reliability and Convergent Validity**

| Construct | Alpha | rho_A | rho_C | AVE | Decision |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| Training and Development | 0.921 | 0.927 | 0.940 | 0.758 | Fulfil |
| Motivation to learn | 0.902 | 0.907 | 0.928 | 0.720 | Fulfil |
| Academic Performance | 0.880 | 0.887 | 0.913 | 0.678 | Fulfil |

*Source: Processed research data, 2026.*

The HTMT value ranged from 0.488 to 0.740. All construct pairs were below 0.85, thus meeting discriminant validity.

**Table 6. Results of HTMT Discriminant Validity**

| Construct Pair | HTML | Limit | Decision |
|---|---|---|---|
| Learning Motivation - Academic Performance | 0.740 | <0.85 | Fulfil |
| Training and Development - Academic Performance | 0.535 | <0.85 | Fulfil |
| Training and Development - Learning Motivation | 0.488 | <0.85 | Fulfil |

*Source: Processed research data, 2026.*

**Structural Model Evaluation**

The evaluation of the structural model began with a collinearity test. For the pathway connecting Training and Development to Academic Performance and the pathway from Learning Motivation to Academic Performance, the VIF value obtained was 1.259 for each pathway. This figure is significantly lower than the general threshold of 5 and even below the more stringent standard of 3. Therefore, it can be concluded that there is no indication of collinearity between the two predictor constructs analyzed.

The coefficient of determination obtained for Academic Performance was 0.492 with an adjusted value of 0.485. This finding indicates that the combination of Training and Development and Learning Motivation is able to explain 49.2% of the total variation that occurs in Academic Performance while the remaining 50.8% is influenced by other variables not included in the model. The difference between the two $R^2$ values is only around 0.007 which indicates that the model has a good level of stability in terms of explanatory power when the number of predictors is taken into account.

The $f^2$ effect size indicates the magnitude of the difference in contribution made by the two predictor variables to the model. The $f^2$ value for Training and Development was recorded at 0.079, making it fall into the small effect category, while Learning Motivation showed an $f^2$ value of 0.509, which is in the large effect category. Thus, Learning Motivation's contribution to the model's explanatory power is far more dominant than that contributed by Training and Development.

**Table 7. Summary of Structural Model Evaluation**

| Size | Relationship/Construct | Results | Interpretation |
|---|---|---|---|
| VIF | PDP -> KA | 1,259 | No collinearity |
| VIF | MB -> KA | 1,259 | No collinearity |
| $R^2$ | Academic Performance | 0.492 | Moderate clear power |
| $R^2$ adjusted | Academic Performance | 0.485 | Relatively stable |
| $f^2$ | PDP -> KA | 0.079 | Small effect |
| $f^2$ | MB -> KA | 0.509 | Big effect |

*Source: Processed research data, 2026.*

**Hypothesis Testing**

Hypothesis testing is done through bootstrapping.The PDP path to KA yields a coefficient of 0.225, a t-statistic of 2.618, and a p-value of 0.009. The 95% confidence interval is between 0.080 and 0.418 and does not include zero. H1 is supported. The MB path to KA yields a coefficient of 0.570, a t-statistic of 7.497, and a p-value less than 0.001. The confidence interval between 0.398 and 0.699 is entirely positive. H2 is supported.

**Table 8. Hypothesis Testing Results**

| Hypothesis | Track | β | t | p | CI 95% | Decision |
|---|---|---|---|---|---|---|
| H1 | PDP -> KA | 0.225 | 2,618 | 0.009 | 0.080-0.418 | Supported |
| H2 | MB -> KA | 0.570 | 7,497 | <0.001 | 0.398-0.699 | Supported |

*Source: Processed research data, 2026.*

**Discussion of the Influence of Training and Development on Academic Performance**

PDP has a positive and significant effect on KA, but the effect size is small. This finding suggests that provisioning and development remain relevant, although their contribution is not as significant as MB. From

a human resource development perspective, training helps meet current capability needs, while development prepares for longer-term capacity (Ajabar, 2024; Swanson, 2022).

For UTLLN students, this support can help them understand course procedures, use technology, and develop study plans. Chung et al. (2022) recommend online orientation to enhance students' cognitive and psychosocial experiences. Walsh et al. (2024) also show that online academic support can benefit engagement, motivation, and performance.

The small effect size may be related to student participation rates, access, or the appropriateness of the materials. These factors were not directly measured and therefore cannot be confirmed using the data in this study. The results of Somuah et al. (2024) indicate that the availability of support does not always equate to service utilization. This context is important because the majority of respondents work full-time and may have limited time to participate in specific programs.

Open University can maintain development programs with more flexible formats, such as recordings, self-paced modules, short guides, and online mentoring. These efforts align with Olvido et al.'s (2024) findings that institutional support and learning options need to consider students' conditions and capacities.

**Discussion of the Influence of Learning Motivation on Academic Performance**

MB exerted the strongest influence on KA. A path coefficient of 0.570 and an $f^2$ of 0.509 indicated that its contribution was greater than that of PDP. These results support the view that motivation is related to effort, persistence, and the ability to sustain learning activities (Woolfolk & Usher, 2023).

Meng and Hu (2023) found that online learning behavior plays a role in the relationship between motivation and academic performance. This finding is relevant for UTLLN students because learning activities require regular implementation without constant face-to-face supervision. Noor et al. (2022) also showed that digital platform use and learning behavior are related to motivation and knowledge development.

Self-regulation helps explain how motivation is applied in everyday activities. Navarro et al. (2023) linked self-regulation strategies and academic efficacy to performance and learning perceptions in distance learning. Xu et al.'s (2023) meta-analysis demonstrated positive effects of self-regulation interventions on achievement in both online and blended environments. Jin et al. (2023) emphasized that support for self-regulation should still provide space for student engagement.

As many as 90.8% of respondents were found to have full-time jobs, a situation that provides additional explanation. Students in this situation are required to balance their time, energy, and attention between work and their studies. The available time may not be sufficient without a strong commitment to allocating it to academic activities. Motivation plays a crucial role in helping students maintain their study priorities amidst the various other demands that arise.

The implication is that increasing motivation cannot be solely the responsibility of students. Institutions can create a conducive environment to help students maintain their motivation by providing transparent academic information, effective schedule reminders, timely feedback, ongoing mentoring, open communication forums, and accessible learning materials. This kind of support can strengthen students' perception that all academic demands are manageable, and their learning goals remain realistic.

**Model Explanation AbilityAcademic Performance**

Training and Development together with Learning Motivation simultaneously are able to explain 49.2% of the total variation that occurs in Academic Performance where this figure indicates a moderate level of explanation and the two constructs play a complementary role because Training and Development functions as a provider of support for individual capabilities and readiness while Learning Motivation plays a role as a driver for students to apply the capabilities they have continuously.

The model still cannot explain 50.8% of the variation in Academic Performance. This remaining unexplained variance may be related to students' initial abilities and academic self-efficacy, family support, and workload. The learning environment also plays a role, along with the quality of academic services, digital literacy, and access to technology, among other factors that have not yet been explored. These variables were not tested in this study, so they can only be proposed as recommendations for further study and should not be considered final empirical findings.

From an implementation perspective, the results of this study indicate that efforts to strengthen UTLLN student achievement cannot rely solely on program availability. These initiatives must be complemented by a support system that enables students to maintain their ongoing participation. Open University (UTL) has the opportunity to integrate technical skills training with motivation-oriented guidance services, as well as the formulation of clear learning objectives, the formation of robust discussion groups, and an academic reminder mechanism that can be tailored to individual needs.

## IV. CONCLUSION AND SUGGESTIONS

### Conclusion

Research shows that Training and Development has a positive and significant effect on the Academic Performance of UTLLN students..PDP had a positive and significant effect on UTLLN students' KA, with a small effect size. MB also had a positive and significant effect, and produced a large effect size. Both constructs explained 49.2% of the variation in KA. These findings suggest that institutional development support and student motivation need to be considered together, with MB being the predictor that provides the strongest contribution in the model.

### Practical Implications

The Open University should continue to maintain and develop a training program that encompasses an understanding of distance learning systems, the use of learning platforms, and independent learning strategies, including time management and assignment completion. The program design should be made more adaptable by providing recorded materials and self-paced modules, as well as asynchronous forums that students can access at any time, according to their needs.

Most respondents who work full-time require motivational support through clear academic communication, regular schedule reminders, and feedback. Intensive mentoring and the formation of learning communities are also needed to help them stay engaged in their studies. Students are advised to set realistic goals and develop a structured study schedule while utilizing academic services and learning resources readily available on campus.

### Limitations and Suggestions for Further Research

This study still has limitations that should be addressed by future researchers. These limitations relate to the limited sample size and the methodology used in data collection. Therefore, further research is expected to expand the number of participants and utilize more diverse approaches to deepen our understanding of the dynamics of student workers and the most effective support strategies for them.

This study employed purposive sampling with voluntary participation, so the resulting sample size cannot be guaranteed to accurately reflect the UTLLN population. Respondents were predominantly undergraduate students in the Management program and those working full-time. Academic performance was measured through the respondents' own perceptions, not based on objective grades.

This study was designed cross-sectionally, which means the dynamics of changes in motivation and performance from one period to the next cannot be fully described. For future research, it is recommended to use a sample with a more balanced proportion based on country of origin, study program, and current level of education, while incorporating objective academic data. The existing model can also be expanded by incorporating variables such as self-efficacy, time management, and engagement in the learning process, social support, workload, and the quality of academic services or even digital literacy. All of this must be based on a robust and adequate theoretical framework.

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