**DETERMINANT FACTORS OF LEARNING DIFFICULTIES**

**(A Study at Distance Learning Program Unit-Open University of Makassar)**

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**Abstract**

*When students struggle with learning, they are likely to encounter difficulties in navigating toward the desirable learning outcomes and hence the intended academic achievement. The present study taps into the factors contributing to the academic difficulties among students of Non Basic Education at Distance Learning Program Unit of Open University in Makassar (hereinafter UPBJJ-UT of Makassar).*

*Quantitative method is used to approach the area of interest, which deals with a population of 782 from whom 244 are sampled through random sampling with a margin of error of 5%. Collecting the quantitative data involves a questionnaire previously tested for its validity and reliability. Partial regression fits into data analysis to settle on statistical results.*

*Results indicate that, among the factors interfering with academic learning ranked highest to lowest, 78,3% accounts for tutorial site-related factors, 68,6% for psychological traits, 34,1% for physical aspects, 14,6% for societal and environmental condition, and 7,5% for family background.*

*These results may address important implications that signify specific measures and directions for the policy-making framework regarding the relevant field of interest of the study, which ultimately affects the future prospect of student performance and academic milestone at UPBJJ-UT Makassar. In light of the major findings above, future studies are called upon to take into account additional variables to add another layer of comprehension of learning difficulties.*

***Keywords: determinant factors, learning difficulties***

**Introduction**

Education is a conscious, ongoing effort—the outcome of which is human resources. This is where continuous improvement matters for education. A number of ways are at hand to work toward improving education, i.e., training, curriculum refinement, procurement of books and learning tools, and development of facilities and infrastructure. As part of these efforts, improving education performance calls for numerous support from various parties in the long run. However, Indonesia has yet to succeed in constructing education systems that live up to the ideals of education. Law No. 20 of 2003 on National Education System states that “Education entails a conscious and deliberate effort to empower learning environment and process by which students actively take on the development of their potential for demonstrating spiritual strength, self-control, personality, intelligence, noble traits and foundational skills that benefit themselves, their communities and their country.”

On light of this notion, the conception of education must conform to a pattern of awareness and a plan of learning situations. Education can take place in many forms—one of which is the hierarchically-structured formal education that culminates in a university level. On the basis of Law of 20 of 2003, in order to pull off the general objectives of national education, higher education in Indonesia is held in order to gear students toward the development of academic skills by unlocking their diverse potential and enforcing their intelligence.

Universitas Terbuka (Open University), one of Indonesia’s state universities, is constantly making massive endeavors toward the framework that underpins the development of graduate qualities. Since its inception in 1984, Universitas Terbuka has produced more than one million graduates across wide-ranging fields of knowledge throughout Indonesia. To sustain the characteristics of graduate qualities, Universitas Terbuka formulates a long-term vision, i.e., to pave its way to become a world-class institution of distance higher education that produces high-quality graduates equipped with competitive advantage in developing the theories and practices of distance higher education by 2021. Effort and expenditure on the scheme of education and graduate development in various fields of knowledge is a long-term investment for human resource empowerment in South Sulawesi, which in turn is inclusive of the implementation of sustainable development goals.

Nevertheless, institutions of higher education encounter a seemingly never-ending barrrage of challenges when it comes to executing the ideal standards of learning processes. At UPBJJ-UT Makassar (Distance Learning Program Unit-Open University of Makassar), there is evidence of major learning challenges in registration term 2018.1 among Non Basic Education programs. Data in Table 1 shows the number of students registered in three faculties that struggle with course completion, thus dealing with remedial programs.

**Table 1**

**Data of Course Remediation in 2018.1**

|  |  |
| --- | --- |
| **Faculty** | **Number of Students** |
| Social and Political Sciences | 743 |
| Teacher Training and Education | 10 |
| Economy | 9 |
| Total | 782 |

**Source: data of student remediation in Non Basic Education**

Table 1 identifies some student populations struggling with several difficult courses and are therefore assigned in a remediation plan. Burton (1952) explains that common signs that a student is dealing with learning difficulties include problems that lead to failure in achieving his or her learning goals. Burton breaks down several circumstances that may indicate students struggling with learning:

1. A students is unable to achieve a level of content mastery in a given period of time based on criterion-referenced measurement.
2. When a student is unable to work toward the expected performance (based on his or her level of ability, intelligence and talent), he or she is predicted to fail on tasks or to fulfill the expected performance.
3. A student cannot cope with developmental tasks, including social adaptation, in accordance with his organismistic patttern during a particular developmental phase that is appropriate for his social group and age (norm-referenced measurement).
4. A student cannot attain a level of content mastery prerequisite for moving forward to subsequent learning.

Remediation assignment plan is given to students of Non Basic Education who fail a course more than three times. Repeating a course that failed the students the first three times may help them overcome their difficulties in moving on to later stages of learning. This emerging phenomenon is relevant and worthy of inquiry to enrich the underlying values concerning the factors that underpin learning difficulties.

Learning difficulties are subject to a number of factors—some of which are intelligence-related; some of which are not. Though it is possible that intelligence quotient (IQ) is instrumental in boosting cognitive components, having high-level IQ does not guarantee successful learning. In a typical situation, course failure and low GPA are eminent consequences of learning difficulties. Most students ascribe low GPA to both internal and external attributions. Internal attributions of learning difficulties include intellectual ability, motivation, physical well-being, attitude, and interest, while external attributions affect learning in family, school and social environment.

Students run into issues on an ongoing basis, and many of them will be affected by a number of these issues during their learning experiences. One common issue in Universitas Terbuka is that students lack competencies to gain a mastering skill in essential concepts taught by a tutor in a tutoring session and cannot keep up with the pace of learning in order to move on to the next stage of learning, thus failing to meet learning demands and lagging hopelessly behind.

Students’ low performance may be attributable to the notion that students’ diversity of backgrounds is inevitable, and these backgrounds make their learning issues and progress even more diverse. This notion sets the rationale of the study; understanding the issues of an individual student and how these issues inhibit him or her from making significant progress in learning leads to the framework of problem solving that articulates well-defined solution to achieve learning productivity and sustainability, which in turn ensure academic goals are well accomplished.

The study highlights the conception of students’ background diversity to frame the factors affecting learning difficulties among students of UPBJJ-UT Makassar. These factors conceptualize the variables of the study and constitute both internal factors (physical and psychological well-being) and external factors (family influences, tutoring setting and social environment).

**METHODOLOGY**

The present study deals with a quantitative correlational approach in an ex post facto design where the event of interest has already taken place. On the basis of meaningful numerical analysis, ex post facto design has no experimental treatment and control over the subject of study and thus cannot manipulate it. It deals with a collection of information based on an event or experience that has come about regarding the factors that affect learning difficulties at UPBJJ-UT of Makassar and describes it numerically.

Primary data is undertaken, which is directly collected from the subject of interest. Data collection employs questionnaires that consist of a set of statement items concerning students’ physical well-being, psychological state, family, tutoring site and social environment that give insight into learning difficulties. These items are scaled on a 4-point Likert scale without including a mid point to avoid a neutral option (Mulyatiningsih, 2014).

A population of 782 students of Non Basic Education 2018.1 registered in assignment remediation program becomes the main focus of the study. Within the large unit of population, a sample of 244 respondents is acquired using a random sampling. The calculation of the sample size conforms to Harry King’s nomogram set at a margin of error of 5% with 95% multiple factor, i.e., 1.195 (Sugiyono, 2014).

Partial and simultaneous regression model performs the statistical operation of data to figure out the factors affecting learning difficulties in the data set. Prior to this, a set of classical assumptions is tested in terms of normality, linearity, homoscedasticity, and multicollinearity (Ghozali, 2011) in IBM SPSS Statistics 20.

**RESULT AND DISCUSSION**

**Result**

The calculation of Mean (M), Standard Deviation (SD), Median (Mi) and Mode (Mo) for each variable provides the data characteristics of the study. The calculation of descriptive analysis of physical factors, psychological factors, family-related factors, tutoring-site factors, social environment factors, and learning difficulties is presented below.

1. **Physical Factors**

Data of physical factors is obtained from 244 respondents using 6 questionnaire items with a minimum score of 1 and a maximum score of 4 (4-point scale). The lowest and the highest possible score made of a respondent for a given attribute are 6 and 24, respectively, with a mean (X) of 15 and standard deviation of 3. Empirical findings show that physical factors range between 15 and 23. In SPSS 20, the data generates a mean of 18,01, a standard deviation of 1,694, a median of 18,00 and a mode of 17 as Table 2 shows below.

**Table 2. Means of Physical Factor Scores**

|  |  |
| --- | --- |
| Parameter | Score |
| N | Valid | 244 |
| Missing | 0 |
| Mean | 18,01 |
| Median | 18,00 |
| Mode | 17 |
| Std. Deviation | 1,694 |
| Variance | 2,868 |
| Range | 8 |
| Minimum | 15 |
| Maximum | 23 |
| Sum | 4395 |

The mean, standard deviation, median and mode in Table 2 represent the basis for classifying physical factors among respondents. The classification of these factors is organized in accordance with Azwar’s classification (2014).

**Table 3. Classification of Physical Factor Scores**

|  |  |  |  |
| --- | --- | --- | --- |
| Interval | Category | Frequency | Percentage |
| 6 - 11 | Extremely low | 0 | 0% |
| 12 - 15 | Low | 22 | 9% |
| 16 - 20 | High | 200 | 82% |
| 21 - 24 | Extremely high | 22 | 9% |
| Total | 244 | 100% |

Based on this classification, 22 or 9% of respondents represent low-category physical factors; 200 or 82% represent high-category physical factors; and the remaining 22 or 9% represent extremely high-category physical factors.

1. **Psychological Factors**

Psychological factors are measured in 9 questionnaire items on a 4-point scale with a minimum score of 1 and a maximum score of 4 for each item. The lowest score of a respondent is 9 with a maximum of 36, set at a mean (X) of 22,5 and standard deviation of 4,5. Empirical findings show that physical factors range between 23 and 36 with a mean of 30,11, a standard deviation of 3,379, a median of 29,00 and a mode of 28.

**Table 4. Mean Scores of Psychological Factors**

|  |  |
| --- | --- |
| Parameter | Value |
| N | Valid | 244 |
| Missing | 0 |
| Mean | 30,11 |
| Median | 29,00 |
| Mode | 28 |
| Std. Deviation | 3,379 |
| Variance | 11,421 |
| Range | 13 |
| Minimum | 23 |
| Maximum | 36 |
| Sum | 7346 |

The result of mean, standard deviation, median and mode calculation serves as the basis to measure the extent to which psychological factors affect learning difficulties in a classification adopted from Azwar (2014).

**Table 5. Classification of Scores of Psychological Factors**

|  |  |  |  |
| --- | --- | --- | --- |
| Interval | Category | Frequency | Percentage |
| 9 - 16 | Extremely low | 0 | 0% |
| 17 - 23 | Low | 1 | 0,4% |
| 24 - 29 | High | 129 | 52,9% |
| 30 - 36 | Extremely high | 114 | 46,7% |
| Total | 244 | 100% |

Based on this classification, 1 or 0,4% respondent represents low-category physical factors; 129 or 52,9% represent high-category physical factors; and 144 or 46,7% represent extremely high-category physical factors.

1. **Family-Related Factors**

Family-related factors are represented in 8 questionnaire items, with scores ranging from 1 to 4. The lowest and the highest scores for each respondent is 8 and 32, respectively, set at a mean (X) of 20 and a standard deviation of 4. Empirical findings show that family-related factors range between 21 and 32 at a mean of 26,17, a standard deviation of 2,438, a median of 26,00 and a mode of 25.

**Table 6. Means of Family-Related Factors**

|  |  |
| --- | --- |
| Parameter | Value |
| N | Valid | 244 |
| Missing | 0 |
| Mean | 26,17 |
| Median | 26,00 |
| Mode | 25 |
| Std. Deviation | 2,438 |
| Variance | 5,943 |
| Range | 11 |
| Minimum | 21 |
| Maximum | 32 |
| Sum | 6385 |

The observed outcomes of mean, standard deviation, media and mode are used to base the categories of family-related factors among respondents on Azwar’s (2014) classification below.

**Table 7. Classification of Scores of Family-Related Factors**

|  |  |  |  |
| --- | --- | --- | --- |
| Interval | Category | Frequency | Percentage |
| 8 - 14 | Extremely low | 0 | 0% |
| 15 – 20 | Low | 0 | 0% |
| 21 - 26 | High | 140 | 57,4% |
| 27 - 32 | Extremely high | 104 | 42,6% |
| Total | 244 | 100% |

Table 7 shows that 140 or 57,4 of respondents represent a high category of family-related factors, with the remaining 104 or 42,6% of respondents representing an extremely high category.

1. **Factors of Tutoring Sites**

Tutoring-site factors are represented in 12 questionnaire item, with 1 and 4 being the minimum and maximum scores, respectively. Respondent scores range between 8 and 48 with a mean (X) of 30 and a standard deviation of 6. Empirical findings show that tutoring-site factors score from 34 to 48 at a mean of 40,50, a standard deviation of 5,438, a median of 37,00 and a mode of 36.

**Table 8. Means of Tutoring-Site Factors**

|  |  |
| --- | --- |
| Parameter | Value |
| N | Valid | 244 |
| Missing | 0 |
| Mean | 40,50 |
| Median | 37,00 |
| Mode | 36 |
| Std. Deviation | 5,438 |
| Variance | 29,568 |
| Range | 14 |
| Minimum | 34 |
| Maximum | 48 |
| Sum | 9883 |

The observed outcomes of mean, standard deviation, median and mode are applicable for classifying the scores of tutoring-site factors among the respondents using Azwar’s (2014) classification.

**Table 9. Classification of Scores of Tutoring-Site Factors**

|  |  |  |  |
| --- | --- | --- | --- |
| Interval | Category | Frequency | Percentage |
| 12 - 21 | Extremely Low | 0 | 0% |
| 22 – 30 | Low | 0 | 0% |
| 31 – 39 | High | 150 | 61,5% |
| 40 – 48 | Extremely high | 94 | 38,5% |
| Total | 244 | 100% |

In Table 9, 150 respondents (61,5%) are classified in high-category tutoring-site factors, with the remaining 94 (38,5%) giving extremely-high category responses.

1. **Social Factors**

Social factors manifest in 6 questionnaire items on a 4-point scale, with scores ranging from 6 to 24. The mean (X) is set at 15 within an acceptable standard deviation of 3. Empirical findings show that 244 respondents score between 12 and 24 at a mean of 16,78, a standard deviation of 2,431, a median of 16,50 and a mode of 18.

**Table 10. Means of Social Factors**

|  |  |
| --- | --- |
| Parameter | Value |
| N | Valid | 244 |
| Missing | 0 |
| Mean | 16,78 |
| Median | 16,50 |
| Mode | 18 |
| Std. Deviation | 2,431 |
| Variance | 5,907 |
| Range | 12 |
| Minimum | 12 |
| Maximum | 24 |
| Sum | 4095 |

The measurement of mean, standard deviation, median and mode of social factors serves the basis for identifying the scores of social factors using the classification adopted from Azwar (2014).

**Table 11. Classification of Social Factor Scores**

|  |  |  |  |
| --- | --- | --- | --- |
| Interval | Category | Frequency | Percentage |
| 6 - 11 | Extremely Low | 0 | 0% |
| 12 – 15 | Low | 84 | 34,4% |
| 15 - 20 | High | 136 | 55,7% |
| 21 - 24 | Extremely high | 24 | 9,8% |
| Total | 244 | 100% |

In table 11, social factors tend to fit into a low category among 84 (34,4%) respondents. Among 136 respondents (55,7%), these factors fit into a high category. The remaining 24 respondents (9,8%) are classified into an extremely high-category factors.

1. **Learning Difficulties**

Learning difficulties are presented in 10 questionnaire item on a 4-point scale with a minimum score of 10 and a maximum score of 40, which is measured within a mean (X) of 25 and a standard deviation of 5. Based on the computation in SPSS, the respondent scores range between 27 and 40 at a mean of 33,27, a standard deviation of 3,266, a median of 32,50 and a mode of 31.

**Table 12. Means of Learning Difficulties**

|  |  |
| --- | --- |
| Parameter | Value |
| N | Valid | 244 |
| Missing | 0 |
| Mean | 33,27 |
| Median | 32,50 |
| Mode | 31 |
| Std. Deviation | 3,266 |
| Variance | 10,665 |
| Range | 13 |
| Minimum | 27 |
| Maximum | 40 |
| Sum | 8117 |

The resulting calculation of mean, standard deviation, median and mode is subsequently used to frame the scores of respondents for learning difficulties based on Azwar’s classification (2014).

**Table 13. Classification of Scores of Learning Difficulties**

|  |  |  |  |
| --- | --- | --- | --- |
| Interval | Category | Frequency | Percentage |
| 10 - 18 | Extremely low | 0 | 0% |
| 19 – 25 | Low | 0 | 0% |
| 26 - 33 | High | 142 | 58,2% |
| 34 - 40 | Extremely high | 102 | 41,8% |
| Total | 244 | 100% |

In Table 13, 142 respondents (58,2%) fit learning difficulties into a high category, with the remaining 102 respondents (41,8%) classifying them in an extremely high category.

1. **Hypothesis Testing**

The procedure of testing hypotheses conforms to the parameter values used for statistical data analysis. These values reflect the strength of unfalsifiable hypotheses to cover basic assumptions of statistical analysis through classical assumption test prior to regression model (Ghozali, 2011).

1. **Assumption Test**

The principal assumptions of statistical analysis are tested on normality, linearity and multicollinearity in SPSS 20.

1. **Normality Test**

Normality test is commonly used to evaluate data distribution and to test data for normality. This test is significant to meet the assumption of normality in hypothesis testing. Kolmogorov-Smirnof test is used measure the normal distribution of the measured data. In this test, the result of normally-distributed data is confirmed within ≥ 0,05 with a probability of < 0,05. The result of data normality is shown in Table 14.

**Table 14. One-Sample Kolmogorov-Smirnov Test**

|  |  |
| --- | --- |
|  | Unstandardized Residual |
| N | 244 |
| Normal Parametersa,b | Mean | 0E-7 |
| Std. Deviation | 1,45017958 |
| Most Extreme Differences | Absolute | ,052 |
| Positive | ,052 |
| Negative | -,042 |
| Kolmogorov-Smirnov Z | ,808 |
| Asymp. Sig. (2-tailed) | ,531 |
| a. Test distribution is Normal. |
| b. Calculated from data. |

Table 14 evaluates data for normality in physical factors (X1), psychological factors (X2), family-related factors (X3), tutoring-site factors (X4), social factors (X5) and learning difficulties (Y). At a sig. of 0,531 (0.531> 0.05), the data conforms to normal distribution.

1. **Linearity Test**

In a linear situation, the data sampled from a population relates free variable (X) and bound variable (Y) in a linear fashion. In this situation, linearity test can also measure the degree of deviation in a linear relation. When no deviation exists, the two sets of variable of interest accomplish a linear relation. The result of linear relation between the respective X variables (physical factors, psychological factors, family-related factors, tutoring-site factors and social factors) and Y variable (learning difficulties) is based on Durbin Watson’s test as Table 15 shows below.

**Table 15. Linear Relation between Independent Variable and Dependent Variable**

|  |  |  |
| --- | --- | --- |
| Variable Relation | Deviation from linearity (P > 0,05) | Conclusion  |
| X1\*Y | 0,142 | Linear relation |
| X2\*Y | 0,100 | Linear relation |
| X3\*Y | 0,357 | Linear relation |
| X4\*Y | 0,112 | Linear relation |
| X5\*Y | 0,200 | Linear relation |

Description: physical factors (X1), psychological factors (X2), family-related factors (X3), tutoring-site factors (X4), social factors (X5) and learning difficulties (Y)

In Table 15, data pairs of X1-Y, X2-Y, X3-Y, X4-Y andX5-Y are tested for linearity with the observed outcomes greater than 0,05 (p>0,05), thus indicating a linear relation between Xs (independent variables) and Y (dependent variable).

1. **Multicollinearity Test**

Testing for multicollinearity identifies correlation between two sets of variables. The result of this test is observed in collinearity statistics in SPSS 20 and detected from the tolerance value and Variance Inflation Factor (VIF). Multicollinearity does not exist at an VIF < 10, while a tolerance of > 1,0 indicates multicollinearity problems.

**Table 16. Multicollinearity Outputs**

|  |  |  |
| --- | --- | --- |
| Mode | Collinearity Statistics | Conclusion |
| Tolerance(> 0.1) | VIF(< 10) |
| X1 | 0,661 | 1,512 | No multicollinearity |
| X2 | 0,199 | 5,030 | No multicollinearity |
| X3 | 0,926 | 1,080 | No multicollinearity |
| X4 | 0,171 | 5,849 | No multicollinearity |
| X5 | 0,809 | 1,236 | No multicollinearity |

The overall relations between Xs and Y shows tolerance values of > 0.1 and VIFs < 10, thus indicating that multicollinearity is not present in the model. The bound variables are therefore completely independent of each other. Based on this assumption, parametric analysis can be applicable for confirmatory hypothesis testing procedures.

1. **Hypothesis Testing**

**H1: There is an influence between physical factors and learning difficulties among students of UPBJJ-UT of Makassar.**

The first hypothesis focuses on the relationship between physical factors and learning difficulties among students of UPBJJ-UT of Makassar. To test this, statistical hypotheses are established and plugged into partial regression test.

1. H0 = There is no influence between physical factors and learning difficulties among students of UPBJJ-UT of Makassar.
2. Ha = There is an influence between physical factors and learning difficulties among students of UPBJJ-UT of Makassar.

H0 is proposed in statistics that proposes no statistical significance exists between the two sets of variables. Ha proposes the otherwise. These statistical hypotheses are tested for individual partial regression coefficients.

**Table 17. Partial Regression between Physical Factors and Learning Difficulties**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1 | ,584a | ,341 | ,339 | 2,656 |
| Predictors: (Constant), Score of Physical Factors |

In Table 17, R squared or the coefficient of determination stands at 0,341, indicating that physical factors account for 34,1 of the variation in learning difficulties. The remaining 65,9% is accounted for by other variables. To see the regression equation, the partial regression coefficient is computed in statistical modeling as Table 18 presents below.

**Table 18. Partial Regression Coefficient between Physical Factors and Learning Difficulties**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Model | Unstandardized Coefficients | Standardized Coefficients | t | Sig. |
| B | Std. Error | Beta |
| 1 | (Constant) | 12,974 | 1,820 |  | 7,128 | ,000 |
| X1 | 1,127 | ,101 | ,584 | 11,198 | ,000 |
| Dependent Variable: learning difficulties |

In Table 18, the observed outcome of regression coefficient (bX) is 1,127 at a constant (a) of 12,974. This outcome leads to the formulation of Y=a+bx, i.e., Y=12,974+1,127. With a regression coefficient (bX) of 1,127, the changes (i.e., increase and decrease) in physical factors cause the changes in learning difficulties, provided all other variables remains constant (ceteris paribus). The positive value of regression coefficient suggests that a one-unit increase in physical factors expects a 1,127 increase in learning difficulties.

The significance of partial effect is measured using significance test and t value. In Table 18, tcal > ttable (11,198 > 1,969) at a significance 0.000 ≤ 0.05. The output demonstrates a positive and significant effect of physical factors on learning difficulties. Accordingly, H0 is rejected in favor of H1 that there is an influence between physical factors and learning difficulties.

**H2: There is an influence between psychological factors and learning difficulties among students of UPBJJ-UT of Makassar.**

The second hypothesis highlights the relationship between psychological factors and learning difficulties among students of UPBJJ-UT of Makassar. Statistical hypotheses are set up and examined in partial regression test using SPSS 20.

H0 = There is no influence between psychological factors and learning difficulties among students of UPBJJ-UT of Makassar.

Ha = There is an influence between psychological factors and learning difficulties among students of UPBJJ-UT of Makassar.

In this scenario, H0 represents the decision to believe that psychological factors affects learning difficulties, while Ha represents the opposite. The fundamental idea of H0 is tested in partial regression test as seen in Table 19.

**Table 19. Partial Regression between Psychological Factors and Learning Difficulties**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1 | ,829a | ,686 | ,685 | 1,832 |
| Predictors: (Constant), Psychological Factors |

In Table 19, R squared or the coefficient of determinant is 0,686, suggesting that psychological factors account for 68,6% in the variation of learning difficulties. The remaining 31,49% is accounted for by other variables. Table 20 presents the partial regression coefficient to settle on regression equation.

**Table 20. Partial Regression Coefficient of Psychological Factors in Learning Difficulties**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Model | Unstandardized Coefficients | Standardized Coefficients | t | Sig. |
| B | Std. Error | Beta |
| 1 | (Constant) | 9,161 | 1,054 |  | 8,694 | ,000 |
| X2 | ,801 | ,035 | ,829 | 23,020 | ,000 |
| Dependent Variable: Skor Learning Difficulties |

In Table 20, the regression coefficient (bX) stands at 0,801 at a constant (a) of 9,161, which leads to the formulation of Y=a+bx, i.e., Y=9,161+0,801. With a regression coefficient of 0,801, changes in psychological factors will cause changes in learning difficulties while holding all other variables constant (ceteris paribus). That is, if psychological factors increase in value, so do learning difficulties; if psychological factors decrease in value, so do learning difficulties. The positive value of regression coefficient suggests that one-unit increase in psychological factors expects a 0,801 increase in learning difficulties.

The significance of partial effect is measured in a significance test and t value. In Table 20, tcal is greater than ttable (23,020 > 1,969) at a significance of 0.000 ≤ 0.05, thus indicating that psychological factors positively and significantly affects learning difficulties. Accordingly, H0 is rejected in favor of H2 that there is an influence between psychological factors and learning difficulties among students of UPBJJ-UT of Makassar.

**H3: There is an influence between family-related factors and learning difficulties among students of UPBJJ-UT of Makassar.**

The third hypothesis focuses on the relationship between family-related factors and learning difficulties. To test this, statistical hypotheses are set up and plugged into partial regression analysis in SPSS 20. The statistical hypotheses are:

1. H0 = There is no influence between family-related factors and learning difficulties among students of UPBJJ-UT of Makassar.
2. Ha = There is an influence between family-related factors and learning difficulties among students of UPBJJ-UT of Makassar.

The fundamental idea of H0 is examined in a partial regression test as Table 21 presents below.

**Table 21. Partial Regression between Family-Related Factors and Learning Difficulties**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1 | ,273a | ,075 | ,071 | 3,148 |
| Predictors: (Constant), Family-Related Factors |

Table 21 shows the value of R squared at 0,075, indicating that family-related factors account for 7,5% in the variation of learning difficulties. The remaining 92,5% is accounted for by other variables. To formulate the regression equation, regression coefficient of family-related factors is measured as Table 22 shows below.

**Table 22. Partial Regression Coefficient of Family-Related Factors in Learning Difficulties**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Model | Unstandardized Coefficients | Standardized Coefficients | t | Sig. |
| B | Std. Error | Beta |
| 1 | (Constant) | 23,679 | 2,177 |  | 10,877 | ,000 |
| X3 | ,366 | ,083 | ,273 | 4,423 | ,000 |
| Dependent Variable: Learning Difficulties |

In Table 22, the regression coefficient (bX) stands at 0,366 with a constant of 23,679, which formulates the equation of Y=a+bx, i.e., Y=23,679+0,366. With a regression coefficient of 0,366, changes in family-related factors will lead to those in learning difficulties provided that all other variables remain constant (ceteris paribus). The values of both variables increase or decrease together. The positive value of regression coefficient suggests that one-unit change in family-related factors will cause a 0,366 increase in learning difficulties.

The significance of partial effect is measured in a significance test and t value. In Table 22, tcal is shown to be greater than ttable (4,423 > 1,969) at a significance of 0.000 ≤ 0.05, indicating that family-related factors have positive and significant effect on learning difficulties. Accordingly, H0 is rejected in favor of H3 that there is an influence between family-related factors and learning difficulties.

**H4: There is an influence between the factors of tutoring sites and learning difficulties among students of UPBJJ-UT of Makassar.**

The fourth hypothesis associates the factors that refer to all identifiable elements in tutoring sites and the extent to which they affect learning difficulties among students of UPBJJ-UT of Makassar. To test this proposition, statistical hypotheses are developed and plugged into a partial regression test in SPSS 20. The statistical hypotheses are:

1. H0 = There is no influence between the factors of tutoring sites and learning difficulties among students of UPBJJ-UT of Makassar.
2. Ha = There is an influence between the factors of tutoring sites and learning difficulties among students of UPBJJ-UT of Makassar.

The fundamental proposition of H0 is examined in a partial regression test as shown in Table 23.

**Table 23. Partial Regression between Factors of Tutoring Sites and Learning Difficulties**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1 | ,885a | ,783 | ,782 | 1,525 |
| Predictors: (Constant), Factors of Tutoring Sites |

In Table 23, the resulting value of R squared is 0,783, indicating the factors of tutoring sites account for 78,3% in the variation of learning difficulties. The remaining 21,7% is accounted for by other variables. To look at the regression equation, regression coefficients are measured on the factors of tutoring site as Table 24 shows below.

**Table 24. Partial Regression Coefficient of Factors of Tutoring Site in Learning Difficulties**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Model | Unstandardized Coefficients | Standardized Coefficients | t | Sig. |
| B | Std. Error | Beta |
| 1 | (Constant) | 11,742 | ,735 |  | 15,973 | ,000 |
| X4 | ,531 | ,018 | ,885 | 29,543 | ,000 |
| Dependent Variable: Learning Difficulties |

Table 24 shows a constant (a) of 11,742 that corresponds to a regression coefficient (bX) of 0,531, which makes up a formulation of Y=a+bx, i.e., Y=11,742+0,531. With a regression coefficient of 0,531, increases and decreases in factors of tutoring sites will bring about those in learning difficulties while holding the effect of other independent variables in the model constant (ceteris paribus). The positive value of regression coefficient denotes the number of units that learning difficulties change when factors of tutoring site change; when factors of tutoring sites increase one unit, learning difficulties increase 0,531 units.

Significance test and t value are the formal basis for testing the significance of partial effect. In Table 24, tcal is greater than ttable (29,543 > 1,969) at a significance of 0.000 ≤ 0.05, thus suggesting that factors of tutoring sites have positive and significant effect on learning difficulties. This becomes a sufficient statistical evidence to reject the null hypothesis in favor of H4 that there is an influence between factors of tutoring sites and learning difficulties in the population.

**H5: There is an influence between social factors and learning difficulties among students of UPBJJ-UT of Makassar.**

The fifth hypothesis proposes the association between social factors and learning difficulties in the population of interest. To test this proposition, statistical hypotheses are developed and plugged into a partial regression test in SPSS 20. The statistical hypotheses are:

1. H0 = There is no influence between social factors and learning difficulties among students of UPBJJ-UT of Makassar.
2. Ha = There is an influence between society factors and learning difficulties among students of UPBJJ-UT of Makassar.

The fundamental proposition H0 is examined in a partial regression test as Table 25 displays below.

**Table 25. Partial Regression between Society Factors and Learning Difficulties**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1 | ,383a | ,146 | ,143 | 3,023 |
| Predictors: (Constant), Social Factors |

In Table 25, the observable output of R squared is 0,146, denoting the value social factors account for (14,6%) in explaining the variation of learning difficulties. The remaining 25,4% is accounted for by other variables. Table 26 shows data regarding regression coefficient of social factors to frame the formulation of regression equation.

**Table 26. Partial Regression Coefficient of Social Factors in Learning Difficulties**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Model | Unstandardized Coefficients | Standardized Coefficients | t | Sig. |
| B | Std. Error | Beta |
| 1 | (Constant) | 24,637 | 1,353 |  | 18,207 | ,000 |
| X5 | ,514 | ,080 | ,383 | 6,444 | ,000 |
| Dependent Variable: Learning Difficulties |

In Table 26, the observed constant (a) is 24,637 that corresponds to its regression coefficient (bX) of 0,514, which makes up the formulation of Y=a+bx, i.e., Y=24,637+0,514. In the formula, the positive value of regression coefficient suggests that a unit increase in social factors causes a 0,514 increase in learning difficulties when all other variables are held constant.

Significance value and t value are tested to measure the significance of a partial effect. With tcal > ttable (6,444> 1,969) at a significance of 0.000 ≤ 0.05, social factors are statistically significant in learning difficulties. As such, H0, which proposes assumption to the contrary, is rejected in favor of H5. The influence between social factors and learning difficulties among students of UPBJJ-UT of Makassar is therefore statistically confirmed.

**Relationships between Variables**

The outputs of classical assumption tests that run normality test, linearity test and multicollinearity test show normally-distributed data and linear relations without a sign of severe multicollinearity, thus indicating that they key assumptions of parametric test are met (Gozali, 2013).

The statistical outputs regarding the factors affecting learning difficulties are presented in terms of physical factors, psychological factors, family-related factors, factors of tutoring sites, and social factors as Table 27 displays below.

Table 27. Partial Relations between Variables

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Model | R Square | T | F | bX | Sig. |
| X1 | 34,1% | 11,198 | - | 1,127 | .000 |
| X2 | 68,6% | 23,020 | - | 0,801 | .000 |
| X3 | 7,5% | 4,423 | - | 0, 366 | .000b |
| X4 | 78,3% | 29,543 | - | 0,531 | 000 |
| X5 | 14,6% | 6,444 | - | 0,514 | 000 |

1. Dependent Variable: Learning Difficulties (Y)
2. Predictors: (Constant), Physical Factors (X1), Psychological Factors (X2), Family-Related Factors (X3), Factors of Tutoring Sites (X4) and Social Factors (X5)

In Table 27, partial analysis shows that tcal of Xs (physical factors, psychological factors, family-related factors, factors of tutoring sites and social factors) is greater than 1,969 (tcal > 1,969) at a significance less than 0,05 (p value < 0,05) with a positive value of regression coefficient (bX). This output represents statistical evidence that physical factors, psychological factors, family-related factors, factors of tutoring sites and social factors have positive and significant on learning difficulties among students of UPBJJ-UT of Makassar. Coefficient of determination is calculated to measure the magnitude of the effect; that is, physical factors account for 34,1% to explain learning difficulties, psychological factors for 68,8%, family-related factors for 7,5%, factors of tutoring sites for 78,3%, and social factors for 14,6%.

**DISCUSSION**

In a partial regression setting, the result of this study associates physical factors, psychological factors, family-related factors, factors of tutoring sites and social factors with the scenario of learning difficulties, which lead to a significant correlation. Learning difficulties is a noticeable phenomenon through the framework within which the factors that affect learning process and outcome are incorporated. Internal factors of learning difficulties are heavily related to inadequate physiological and psychological settings of an individual student while external factors characterize a particular learning situation that mostly lacks essential facilities, thus inhibiting appropriate learning behavior and academic success.

This result is consistent with a study by Megawati, F. (2016) who aims at effective English-language learning by measuring the factors of learning difficulties in terms of teaching-learning process, student condition, environment and physical well-being. In a similar sense, Dian Puspita Anggraini (2016) adopts a descriptive design and questionnaires to shed light upon learning difficulties among 40 biology students at UNISBA and concludes that the major inhibitory aspect of biology learning is the lack of mastery skills in content. The percentage of learning difficulties is drawn from (1) process of implementing practicum (66,2%), (2) learning process (8,69%) and (3) practicum implementation (66,26%) with social environment exerting a tremendous amount of effect (66,15%). Jirana et al. (2015) also deal with a population of biology students at the University of South Sulawesi and extend the conception of learning difficulties with factors underlying student motivation. The result attributes internal factors, family-related factors, campus-related factors, and social factors to student difficulties in navigating toward biology learning.

A profound understanding of internal and external factors that shape learning is developed by Ross (1974):

1. Internal factors result from self-inflicting attributes, e.g., (1) physical weakness (lack of sensory perceptions, nervous system disorders and disabilities), (2) mental disorders that relate to intelligence and talent factors measurable in psychological tests, (3) emotional behavioral disorders, (4) bad study habits, and (5) lack of base or prerequisite knowledge and skills to move on to later stages of learning.
2. External factors stem from a particular setting or circumstance an individual deals with, e.g., (1) passive learning approach that hinders active engagement, (2) lack of curriculum flexibility, (3) heavy student workloads, (4) unattractive learning methods, (5) insufficient learning tools and resources, and (6) unconducive home environment.

In line with the previous notion of learning factors, Slameto (2013) classifies internal and external factors of learning into a number of subcomponents.

1. Internal factors represent the attributes inherent in one’s self, which manifest in:
2. Physical factors (health and disabilities)
3. Psychological factors (intelligence, attention, interest, talent, motivation, maturity and readiness)
4. Fatigue-associated factors
5. External factors encompass components that exist outside students or situations they affect, which include:
6. Family factors (parenting styles, relations between family members, house-associated situations, economical background, parental understanding and cultural background)
7. School factors (learning method, curriculum, student-teacher relation, peer relation, school discipline, learning tools, school time, learning standard, building condition and homework)
8. Social factors (student activities and participation in society, mass media and social circles)

Dimyanti & Mudjiono (2015) highlight five major factors that contribute to students’ difficulties across their academic path:

1. Students’ characteristics associated with their personality traits, both physical and mental, can be attributed to common issues concerning motivation, competencies and experiences before they start learning.
2. Attitudes toward learning is one’s disposition to approach learning activities. Attitudes, particularly before learning starts, determine students’ abilities, mental and emotional preparedness, and willingness to learn. If negative attitudes persist, a student is unlikely to engage and continue learning beyond what is required.
3. Learning concentration has to do with the immediate psychological experience of an individual student in what he/ she is learning. A lack of concentration constitutes a major symptom in learning difficulties which affects student performance and learning outcome.
4. Social environment refers to the social setting where a student interact with others. Poor social environment leads students to disruptive behavior toward learning and less ability to develop academic life.
5. Infrastructure is a key factor in effective teaching and learning, providing vital facilities for communal use and convenience for learning experiences. When the benefits of infrastructure are not well perceived, student achievement and learning outcomes are severely hampered.

The emphasis on these emerging views lies on internal and external factors that have contributory and facilitative effects on students’ difficulties in learning. The constructs of physical, psychological, family and social framework are an indispensable part of the emphasis.

**CONCLUSION AND RECOMMENDATION**

1. A wide array of aspects that branches out from the constructs of physical well-being, psychological conditions, family, tutoring sites and social contexts has revealed pervasive and strong links between a range of learning difficulties and poor academic outcomes.
2. Aspects that make up the setting of tutoring sites reveal the dominance in the variation of learning difficulties among students of UPBJJ-UT of Makassar (78,3%), with family-related factors being the least dominant (7,5%).
3. This study draws out the implications for learning practices which lead to the framework of problem-solving policies that articulate well-defined solutions to learning difficulties at UPBJJ-UT of Makassar.
4. Future work that develops the same variables of interest is recommended to add new constructs to the conceptual framework of learning difficulties and extend the scope of analysis into simultaneous regression modeling and Structural Equation Modeling (SEM).

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Undang Undang Republik Indonesia No. 20 Tahun 2003 Tentang Sistem Pendidikan Nasional