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**Factors Affecting Academic Performance Among Part-time Working Students: A Case of Mongolian University**

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doi.org/10.51505/IJEBMR.2026.10601      URL: <https://doi.org/10.51505/IJEBMR.2026.10601>

Received: Apr 27, 2026

Accepted: May 07, 2026

Online Published: Jun 05, 2026

**Abstract**

This study aims to identify the factors influencing the academic performance of students engaged in part-time work. The study was conducted among 355 undergraduate students enrolled in a Business Administration program at a major university in Mongolia. Specifically, the research examines the effects of stress, time management, and learning motivation on students' academic performance.

The data were analyzed using the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach with SmartPLS software. Reliability and validity tests were conducted to evaluate the measurement model, while path analysis was employed to examine the relationships among the variables. The findings reveal that stress has a significant negative effect on academic performance, whereas time management and learning motivation have positive effects. Among these factors, stress was identified as the strongest predictor of reduced academic achievement, while effective time management contributed positively to students' ability to balance work and study responsibilities.

The results suggest that reducing psychological stress and improving time management skills are critical for enhancing the academic performance of students engaged in part-time work. Accordingly, this study provides practical implications for universities and policymakers in designing support programs and educational interventions aimed at improving students' academic outcomes and overall well-being.

**Keywords:** Academic performance, part-time work, stress, time management, learning motivation

**1. Introduction**

One of the major challenges faced by university students is financial difficulty, including tuition fees and living expenses. As a result, it has become increasingly common for students to engage in part-time work while pursuing their studies to meet these needs. According to estimates based on population and housing census data, 41.2% of young people aged 15–29 in Mongolia is

employed, 38.1% are enrolled in educational institutions, and 20.7% are economically inactive (National Statistics Office of Mongolia, 2023). Furthermore, as of 2023, 41.25% of youth are employed, accounting for 22.5% of the total workforce, indicating a growing trend of employment among students.

Engaging in part-time work offers students not only financial support but also opportunities to gain work experience, develop skills, and expand their social networks. For instance, a study conducted by Duke University found that students who worked part-time during their studies were more likely to achieve career advancement, increase their income, and start their own businesses (Duke University, n.d.). However, part-time work can have both positive and negative effects on students' academic performance. On the one hand, it may enhance time management skills and a sense of responsibility. On the other hand, it can reduce the time available for studying and lead to negative consequences such as fatigue and increased stress.

International studies indicate that students engaged in part-time work often face challenges related to time management (Yorke & Longden, n.d.), and that work, and family responsibilities can significantly affect academic performance. In addition, factors such as flexibility in learning, a supportive environment, and social engagement play a crucial role in students' academic success (Hart, 2010; Kuh et al., 2007). Furthermore, financial difficulties directly influence both students' decisions to pursue education and their academic performance (Kinman, 2008), while stress and fatigue arising from balancing work and academic responsibilities can reduce productivity (Grove et al., 2011). Conversely, improvements in supportive environments and social integration have been shown to positively impact the student's achievement (Kuh et al., 2007; Lange, 2014).

However, in the context of Mongolia, there remains a relative lack of research examining the factors that influence the academic performance of students engaged in part-time work. Although promoting youth employment has become a key focus for both the government and international organizations, limited research, data availability, and collaboration in this area continue to hinder effective policy development and implementation. Therefore, there is a clear need for more in-depth research on student employment and its impact on academic performance.

Accordingly, this study was conducted to identify the factors influencing the academic performance of students engaged in part-time work and to analyze the relationships among these factors.

## **2. Theoretical Basis**

The concept of productivity is one of the fundamental principles in economic theory and is believed to have first been introduced in the works of economist François Quesnay (Quesnay, 1766). In modern economic theory, productivity is defined as a measure of efficiency represented by the ratio of output to input (Samuelson & Nordhaus, 2010). On the other hand, productivity is also defined as a socio-economic concept that reflects the interaction between

human resources, knowledge, skills, organizational structure, technology, and environmental factors (Syverson, 2011; OECD, 2001).

If student academic performance is interpreted through the lens of productivity theory, academic achievement (output) can be understood as the result of time, effort, and resources invested in learning (inputs). Therefore, examining the factors that influence student performance can be considered an application of productivity theory within the field of education (Hanushek & Woessmann, 2015).

In addition, the “Human–System–Environment” approach to productivity management provides an important theoretical framework for explaining performance. According to this model, performance is shaped by the interaction of individual characteristics (skills and motivation), organizational systems (learning environment and education system), and external environmental factors (social and economic conditions) (Bronfenbrenner, 1979; OECD, 2018). This framework supports the view that student academic performance is the result of multiple interacting factors. Furthermore, according to Goal-Setting Theory, specific and challenging goals enhance human motivation and performance, and this effect directly influences learning outcomes in educational settings (Locke & Latham, 2002). Research findings indicate that students with higher motivation and clearly defined goals tend to engage more actively in their studies and achieve higher academic performance (Zimmerman, 2000).

Therefore, it is considered theoretically appropriate to integrate productivity theory, the human development ecological model, and motivation and goal-setting theories when explaining student academic performance.

### **3. Literature Review**

Students’ academic performance is a widely studied topic across the fields of education, psychology, and economics, and is considered an important indicator of both individual achievement and the effectiveness of educational systems (Hanushek & Woessmann, 2015). Research findings suggest that academic performance is a complex construct influenced by multiple factors, including psychological, social, economic, and individual characteristics.

**Psychological factors:** Psychological factors, particularly stress and learning motivation, have a significant impact on students’ academic performance. Research has shown that high levels of stress can negatively affect academic achievement by reducing concentration, increasing cognitive load, and leading to psychological fatigue (Pascoe et al., 2020). Although a certain level of stress may enhance performance, excessive stress tends to have predominantly negative effects. In contrast, learning motivation is one of the strongest predictors of academic success. According to Self-Determination Theory, students with high intrinsic motivation are more actively engaged in the learning process and tend to achieve higher academic performance (Ryan & Deci, 2000). In addition, highly motivated students demonstrate greater persistence, engagement, and overall performance (Gbollie & Keamu, 2017).

**Social factors:** Social factors, including family, peer, and teacher support as well as the learning environment, play an important role in students' academic performance. Research has shown that students who receive strong social support tend to be more engaged in their studies and achieve higher academic success (Kuh et al., 2007). Conversely, limited opportunities to interact with teachers and peers may lead to feelings of isolation, particularly among students engaged in part-time work, which can negatively affect their academic performance (Yorke & Longden, 2008). In addition, Tinto's (1993) theory suggests that students' integration into the academic environment directly influences their academic success, and those who feel a stronger sense of connection with their institution are more likely to achieve higher performance.

**Economic factors:** Economic factors have a significant impact on students' academic performance. Students facing financial difficulties often experience challenges in maintaining focus on their studies (Dynarski, 2016). As a result, many students engage in part-time work to meet their financial needs. Research indicates that part-time work has both positive and negative effects on students. On the one hand, it provides opportunities to gain work experience, develop skills, and enhance independence (Curtis & Shani, 2002). On the other hand, working excessive hours can reduce study time and lead to fatigue, thereby negatively affecting academic performance (Darolia, 2014). Therefore, the relationship between employment and academic performance is complex and multifaceted.

**Individual factors – Time management:** Time management is one of the most important individual factors influencing students' academic success. For students engaged in part-time work, effective time management is essential to balance work and academic responsibilities. Research has shown that students with strong time management skills tend to achieve higher academic performance and experience lower level of stress (Macan et al., 1990). Similarly, Razali et al. (2018) found that time management is positively and statistically significantly associated with academic performance.

**Research on students engaged in part-time work:** A few empirical studies have examined the academic performance of students who work part-time. Humayon et al. (2018) found that motivation, stress, and time management have a strong influence on the performance of working students. Similarly, Said et al. (2022) found that prior academic achievement and consistency in interest are important predictors of performance. Mushtaq et al. (2012) reported that the learning environment, communication, and proper guidance have a positive effect on academic outcomes, while family-related stress has a negative impact. In addition, Mohamed et al. (2018) confirmed that study habits are strongly and positively correlated with academic performance.

**Research Gap:** Student academic performance and its influencing factors have been widely studied at the international level, most of these studies have been conducted in developed countries. Therefore, the direct applicability of these findings to developing countries, including Mongolia, is limited. Furthermore, although the relationship between part-time work and academic performance has been studied, research that examines psychological, social, economic, and individual factors within an integrated framework remains limited.

Therefore, this study aims to address the existing research gap by examining the impact of these factors in a comprehensive manner within the Mongolian context and identifying their influence on students' academic performance.

#### **4. Methodology**

**Research Design:** This study employed a quantitative research approach to examine the factors influencing the academic performance of students engaged in part-time work. Specifically, the study investigated the effects of stress, time management, and learning motivation on academic performance. A cross-sectional survey design was adopted because it is appropriate for examining relationships among variables within a specific population at a single point in time (Creswell & Creswell, 2018). The research framework was developed based on previous studies related to working students and academic performance.

**Research Sample:** The study was conducted among undergraduate students majoring in Business Administration at a major university in Mongolia. A convenience sampling method was used to collect data from students who were currently engaged in part-time work or had previous work experience (Etikan et al., 2016). A total of 355 valid responses were included in the final analysis. The selected participants were considered suitable for the study because they had direct experience balancing academic responsibilities with employment, allowing the research to capture practical insights into the factors affecting academic performance among working students.

**Research Hypotheses:** Based on the objectives of the study and prior theoretical and empirical findings, the following hypotheses were proposed:

- **H1:** Stress has a negative effect on students' academic performance.
- **H2:** Time management has a positive effect on students' academic performance.
- **H3:** Learning motivation has a positive effect on students' academic performance.

These hypotheses served as the foundation for examining the relationships among the study variables.

**Measurement Instruments:** The questionnaire used in this study was adapted from previously validated scales in the existing literature. The survey consisted of four main constructs: stress, time management, learning motivation, and academic performance. Stress was measured using five items adapted from Pascoe et al. (2020) and Grove et al. (2011), focusing on psychological pressure and academic stress experienced by students. Time management was measured using five items adapted from Macan et al. (1990), which assessed students' ability to organize schedules and prioritize tasks effectively. Learning motivation was measured using five items based on the Self-Determination Theory framework developed by Ryan and Deci (2000). Academic performance was measured using five items related to self-reported academic achievement and GPA indicators.

In total, the questionnaire included 20 measurement items. All items were assessed using a five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree (Likert, 1932). The constructs were treated as reflective latent variables in the PLS-SEM model.

**Scale Adaptation Process:** The original measurement scales were reviewed and slightly modified to fit the context of Mongolian university students engaged in part-time work. To improve contextual relevance and respondent understanding, the questionnaire was translated into Mongolian. To ensure content validity, the survey instrument was reviewed by academic experts prior to data collection (Hair et al., 2022). In addition, a pilot test was conducted with a small group of students to evaluate the clarity and readability of the questionnaire. Based on participant feedback, minor wording revisions were made before administering the final survey.

**Data Collection and Analysis:** Data were collected using a structured questionnaire distributed to undergraduate students. The collected data were analyzed using the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach with SmartPLS software. PLS-SEM was considered appropriate because it is widely used for examining complex relationships among latent variables and prediction-oriented research models (Hair et al., 2022). The analysis was conducted in two stages. First, the measurement model was evaluated by assessing reliability and validity using Cronbach's alpha, Composite Reliability (CR), Average Variance Extracted (AVE), and discriminant validity measures. Second, the structural model was assessed to examine the relationships among stress, time management, learning motivation, and academic performance.

Finally, a bootstrapping procedure with 5,000 resamples was conducted to test the significance of the path coefficients and evaluate the proposed hypotheses (Hair et al., 2022).

## **5. Results**

**General Characteristics of Respondents:** Among the respondents, 84.9% were engaged in part-time work, showing that working while studying is highly common among the students included in this research. Most participants were enrolled in 12–18 credits per semester, indicating that they were managing a regular full-time academic workload in addition to their employment responsibilities. In terms of academic performance, most students reported GPAs between 2.0 and 3.0, reflecting a moderate level of academic achievement. This finding suggests that balancing academic requirements with part-time work may affect students' overall performance and learning outcomes.

**Measurement Model Assessment:** The measurement model was evaluated using the PLS-SEM approach to ensure the reliability and validity of the constructs used in the study. Internal consistency reliability was assessed through Cronbach's alpha and Composite Reliability (CR). All constructs achieved values above the recommended threshold of 0.70, indicating that the measurement scales were reliable and internally consistent. Convergent validity was examined using factor loadings and Average Variance Extracted (AVE). All indicator loadings exceeded the acceptable level of 0.70, while AVE values were above 0.50, confirming that the indicators adequately represented their respective constructs. To further assess the quality of the

measurement model, discriminant validity was evaluated using the Fornell–Larcker criterion and the Heterotrait–Monotrait Ratio (HTMT). The results showed that each construct was sufficiently distinct from the others, as all HTMT values remained below the recommended threshold of 0.85. Overall, these findings indicate that the measurement model demonstrated satisfactory reliability and validity.

**Structural Model Assessment:** The structural model was analyzed using the PLS algorithm, and the significance of the relationships was tested through a bootstrapping procedure with 5,000 resamples. The model produced an  $R^2$  value of 0.36 for academic performance, indicating that stress, time management, and learning motivation jointly explained 36% of the variance in students' academic performance.

The findings revealed that stress had a significant negative effect on academic performance ( $\beta = -0.422$ ,  $t = 6.214$ ,  $p < 0.001$ ). This suggests that students experiencing higher levels of stress tend to achieve lower academic results. Among all variables, stress showed the strongest influence on academic performance.

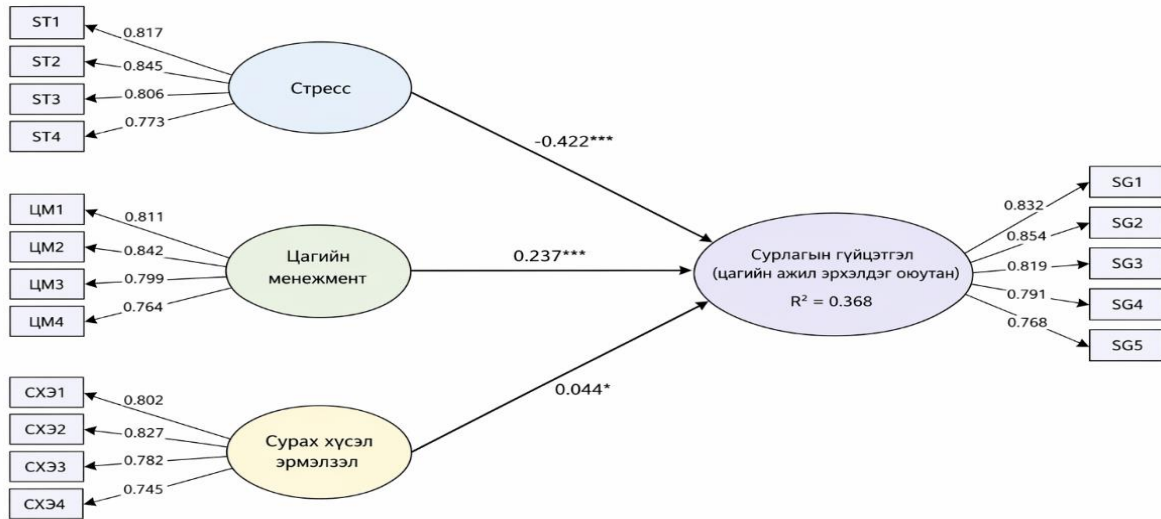
Time management, on the other hand, had a significant positive effect on academic performance ( $\beta = 0.237$ ,  $t = 3.487$ ,  $p < 0.01$ ). The results indicate that students who are better able to organize and manage their time are more likely to perform well academically while balancing work and study responsibilities.

Learning motivation also showed a positive relationship with academic performance ( $\beta = 0.044$ ); however, the effect was relatively weak and not statistically significant ( $t = 1.121$ ,  $p > 0.05$ ). This finding suggests that motivation alone may not strongly influence academic achievement unless it is supported by effective time management and lower stress levels.

Overall, the bootstrapping results support the proposed hypotheses and highlight stress and time management as the most influential factors affecting the academic performance of students engaged in part-time work.

The structural model illustrating the relationships among stress, time management, learning motivation, and academic performance is presented in Figure 1.

Figure 1. Structural Equation Model (SEM) of Factors Influencing Academic Performance of Part-Time Working Students



Source: Analysis results

**Note:** The figure presents standardized path coefficients. \*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001. The results of the PLS-SEM analysis demonstrate that stress, time management, and learning motivation all contribute to academic performance, although their effects vary in strength. Stress emerged as the strongest negative factor, while effective time management positively supported academic achievement. In contrast, learning motivation showed only a limited effect, suggesting that further research may be needed to better understand its role in the academic performance of students engaged in part-time work.

**Discussion**

The findings of this study show that stress is the strongest factor negatively affecting the academic performance of students engaged in part-time work ( $\beta = -0.422$ ). This suggests that increasing psychological pressure reduces students’ concentration, learning ability, and academic engagement, leading to lower academic achievement. This result is consistent with previous studies (Pascoe et al., 2020; Grove et al., 2011), which found that excessive stress negatively affects students’ productivity and learning outcomes. For part-time working students, balancing academic responsibilities with employment may increase stress and create additional pressure in daily life. The study also found that time management has a positive effect on academic performance ( $\beta = 0.237$ ). Students who are able to organize their schedules effectively are more capable of balancing work and study responsibilities. This finding supports earlier studies by Macan et al. (1990) and Razali et al. (2018), which emphasized the importance of time management in improving academic achievement and reducing stress.

An interesting finding is that learning motivation showed only a weak positive effect on academic performance. Although previous studies suggest that motivation is an important predictor of academic success, the current study indicates that external pressures such as financial difficulties, workload, and stress may limit the influence of motivation among working students. In other words, students may remain motivated, but limited time and psychological exhaustion can prevent them from fully achieving their academic potential. From a theoretical perspective, the findings support the Human–System–Environment framework, suggesting that academic performance is influenced not only by individual factors, but also by environmental and institutional conditions. The results also highlight the importance of considering academic achievement as a multidimensional issue among students engaged in part-time work.

In the Mongolian context, many university students work part-time due to increasing living expenses and financial pressures. However, support systems for working students, such as flexible learning environments and psychological counseling services, remain limited. This may explain why stress emerged as the strongest factor affecting academic performance. Therefore, the study highlights the need for universities and policymakers in Mongolia to create more flexible and supportive educational environments for students engaged in part-time employment.

### **Conclusion**

This study examined the factors influencing the academic performance of students engaged in part-time work using the PLS-SEM approach. The findings showed that stress has the strongest negative effect on academic performance, while time management positively influences students' ability to balance work and study responsibilities. Learning motivation also showed a positive relationship with academic performance; however, its effect was relatively weak compared to stress and time management.

The study contributes to the existing literature by providing empirical evidence from the Mongolian higher education context, where research on part-time working students remains limited. The findings suggest that academic performance is shaped not only by students' personal motivation, but also by external conditions such as stress, workload, and institutional support. Despite its contributions, the study has several limitations. The research was conducted using data from a single university and relied on self-reported responses, which may limit the generalizability of the findings. In addition, the cross-sectional design of the study does not fully explain long-term changes in academic performance.

Future research should include students from different universities and academic fields, and further examine additional factors such as financial pressure, family support, and mental health. Longitudinal studies may also provide a deeper understanding of how part-time work affects academic achievement over time.

Based on the findings, universities should provide more flexible learning environments, psychological support services, and training programs focused on time management and stress reduction. Policymakers and educational institutions should also work together to create

supportive conditions that help students successfully balance employment and academic responsibilities.

### **Recommendations**

Based on the findings of this study, several recommendations can be made to better support students engaged in part-time work. Since stress was found to have the strongest negative effect on academic performance, universities should provide stronger psychological support services and stress-management programs to help students maintain their well-being.

Universities should also create more flexible learning environments, such as hybrid classes, online learning opportunities, and flexible schedules, so that students can better balance work and study responsibilities.

In addition, the results show that time management plays an important role in academic success. Therefore, workshops and training programs that help students improve their time management and study planning skills could positively contribute to their academic performance.

Finally, policymakers and university administrators should pay greater attention to the challenges faced by working students and develop more supportive policies and services that help students successfully manage both employment and education.

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