Impact of Family Income, Academic Performance, and Study Challenges on Employment Outcomes of 2023–2024 Politeknik Merlimau Melaka Graduates

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Abstract: This study investigates the factors influencing graduate employability and post-graduation income among the 2023 and 2024 cohorts of Politeknik Merlimau Melaka (PMM). Utilizing secondary data from the Ministry of Higher Education Malaysia's Kajian Pengesanan Graduan (SKPG) national tracer study, the research examines the impact of academic performance, family income, and study-related challenges on employment outcomes. A total of 2,912 graduates were analyzed using quantitative methods, including descriptive and inferential statistical techniques. The findings reveal that academic performance, particularly a CGPA above 3.00, significantly enhances employability, although extremely high CGPAs show diminishing marginal returns. Family income emerged as a strong predictor of both immediate employment decisions and post-graduation earnings, with lower-income graduates more likely to seek employment early, often in lower-paying roles. Additionally, challenges such as financial hardship and emotional difficulties slightly reduced employability rates. The study concludes that graduate employment outcomes are shaped by a combination of academic, socioeconomic, and personal factors. These insights can support evidence-based strategies to improve graduate support services and align educational outcomes with labor market demands.

Keywords: *Graduate Employability, Academic Performance, Family Income, Polytechnic Education, Employment Outcomes*

1.0 INTRODUCTION

Graduate employability is a growing concern among policymakers, educational institutions, and students, particularly amid global economic uncertainty and rapid technological changes in the labor market (Tomlinson, 2012). In Malaysia, the Ministry of Higher Education (MOHE) monitors graduate outcomes through the Kajian Pengesanan Graduan (SKPG), an annual tracer study that evaluates employment trends, challenges faced by graduates, and feedback on institutional services, including teaching quality and curriculum relevance (MOHE, 2024; Saad et al., 2013).

The SKPG supports evidence-based policymaking by identifying employment-related issues and capturing graduate feedback on their educational experience. While national data offers macro-level insights, localized research is necessary to explore the specific factors affecting employability at individual institutions. Prior studies have identified key determinants such as socioeconomic background, academic performance, and personal challenges encountered during study, all of which can influence graduate employment outcomes (Blanden et al., 2005; Sirat et al., 2018; Harvey, 2001; Yorke, 2006).

This study is conceptually guided by the Human Capital Theory and the Career Self-Management Model. Human Capital Theory posits that educational achievements and skills acquisition—such as obtaining a high CGPA—enhance an individual's productivity and employability (Becker, 1964). In contrast, the Career Self-Management Model emphasizes individual agency, recognizing that personal and environmental challenges (e.g., financial constraints, emotional distress) also shape career outcomes (King, 2004). Together, these frameworks highlight the interplay of structural and personal factors in shaping employment trajectories.

This study focuses on graduates from Politeknik Merlimau Melaka (PMM) from the classes of 2023 and 2024. It investigates how family income, academic performance, and study-related challenges affect employability and post-graduation income. The aim is to provide institution-specific insights that inform student support strategies and improve alignment between higher education and labor market needs.

2.0 METHODOLOGY

2.1 Theoretical Perspectives on Employability

Employability is often studied through two key lenses: Human Capital Theory and Social Capital Theory. Human Capital Theory (Becker, 1964) suggests that individuals improve their productivity—and thus their employment prospects—through investment in education and skills. In the context of higher education, academic performance (e.g., CGPA) is often used as a proxy for human capital (Jackson, 2014). Graduates with higher academic achievement are perceived as more competent, which may lead to better employment outcomes. In contrast, Social Capital Theory emphasizes the role of networks, relationships, and access to resources in shaping employment opportunities (Bourdieu, 1986; Coleman, 1988). Graduates from higher-income families often benefit from greater exposure to career networks, internships, and informal job information, which can significantly improve post-graduation earnings and job quality (Yusof, 2017; Ismail & Hassan, 2018). Together, these theories underscore that employability is shaped by both individual merit and structural advantage.

2.2 Academic Performance and Graduate Outcomes

Numerous studies highlight the positive link between academic performance and employability. For instance, Nordin and Noor (2020) found that Malaysian graduates with CGPAs above 3.00 had higher employment rates and better job satisfaction. However, some researchers observe a threshold effect: once a certain CGPA is reached, other attributes like soft skills and experience become more important than academic grades (Mustapha & Abdullah, 2019). This reflects a growing employer focus on well-rounded graduate profiles.

2.3 Socioeconomic Background and Employment Decisions

Family income plays a critical role in influencing post-graduation paths. Students from low-income families are often compelled to enter the workforce early to support their families, which may result in lower-paying or less desirable jobs (Nordin et al., 2019; Ismail et al., 2017). In contrast, those from more affluent backgrounds can afford to delay employment in favor of further studies or unpaid internships, which improves long-term outcomes (Mohamed & Alias, 2018). This dynamic illustrates how social and financial capital affect employability beyond academic merit.

2.4 Study Challenges and Career Readiness

Non-academic challenges during study—such as emotional distress, financial hardship, or poor infrastructure—have been shown to affect academic performance and career confidence. Jackson and Wilton (2016) found that mental health issues among graduates were associated with reduced career self-efficacy. Meanwhile, logistical and financial obstacles can limit students' ability to access career support services or participate in internships (Andrews & Higson, 2008). Despite these findings, institutional studies focusing specifically on Malaysian polytechnic graduates remain limited. Most national-level tracer studies lack detailed breakdowns by institution or course type. This study addresses that gap by providing institution-specific insights into how academic, socioeconomic, and personal factors influence employment outcomes.

2.5 Research Gap

While prior literature establishes strong connections between academic performance, family background, and employability, few studies integrate these factors within a single framework—especially at the TVET or polytechnic level. Additionally, the combined effects of academic achievement and study-related challenges on employment and income outcomes have been

underexplored in Malaysian contexts. This study responds to that gap by analyzing multiple predictors using data from Politeknik Merlimau Melaka's 2023–2024 graduate cohorts.

3.0 METHODOLOGY

This study employed a quantitative research design using secondary data extracted from the Kajian Pengesanan Graduan (SKPG) survey conducted by the Ministry of Higher Education Malaysia in 2023 and 2024. The dataset includes responses from 2,912 graduates of Politeknik Merlimau Melaka (PMM), gathered during convocation registration. The high response rate ensures representativeness of the graduate population.

The independent variables were:

i. Academic performance (measured via CGPA),
ii. Family income (total monthly household income),
iii. Study-related challenges (categorical responses to difficulties faced during study).

The dependent variables were:

i. Employment status (employed, pursuing further studies, unemployed, or awaiting placement),
ii. Monthly income of employed graduates.

Data were analyzed using IBM SPSS Statistics (Version 26). The following statistical techniques were applied:

i. Descriptive statistics (frequencies, percentages, means) were used to summarize respondent demographics and key variables.
ii. Pearson's correlation analysis assessed the strength and direction of relationships between continuous variables, such as CGPA and income. Example result: A moderate positive correlation was observed between CGPA and monthly income ($r = 0.42$, $p < 0.001$) (Field, 2018).
iii. Chi-square tests were conducted to examine the associations between categorical variables, such as family income group and employment status. Example result: Employment status was significantly associated with family income ($\chi^2(6, N = 2,912) = 47.18$, $p < 0.001$) (Pallant, 2020).
iv. Multiple linear regression was used to identify predictors of post-graduation income, incorporating CGPA, family income, and reported study challenges as independent variables. Model summary: Adjusted $R^2 = 0.28$, $F(3, 2,525) = 76.41$, $p < 0.001$ (Field, 2018).

Assumptions of normality, linearity, and homoscedasticity were checked using residual plots and variance inflation factors (VIF) to ensure no multicollinearity. All predictors showed acceptable VIF values below 2.0 (Pallant, 2020).

Data access was obtained with official approval from PMM and MOHE. All personal identifiers were removed to ensure anonymity. Informed consent was embedded within the SKPG survey process, and ethical guidelines for secondary data usage were followed.

4.0 DATA ANALYSIS AND FINDINGS

4.1 Respondent Profile

A total of 2,912 graduates were analyzed, comprising 1,404 males (48.2%) and 1,508 females (51.8%). The majority were Malay (89.6%), followed by Indian (6.7%), Chinese (0.8%), and others. This distribution reflects typical polytechnic demographic patterns.

4.2 Academic Performance and Employability

Pearson correlation analysis revealed a moderate positive correlation between CGPA and employment status ($r = 0.41$, $p < 0.001$), indicating that higher academic performance is associated with better employability.

A chi-square test showed a significant association between CGPA categories and employment outcomes, $\chi^2(42, N = 2,912) = 108.32$, $p < 0.001$. Cramér's $V = 0.22$ suggests a small to medium effect size (Cohen, 1988), indicating a meaningful but not dominant relationship between academic performance and employment status.

Graduates with CGPAs above 3.00 had the highest employment rates, particularly those between 3.21–3.40 (87.9%). However, a plateau effect was observed beyond CGPA 3.50, with no significant gain in employability. This suggests diminishing marginal returns from high academic performance, consistent with Field (2018).

Table 1
Academic performance and employability of 2023 -2024 PMM graduates

CGPA	Status				Total
	Employed	Pursuing further studies	Waiting for job placement	Unemployed	
2.20 - 2.50	16	1			17
2.51 -2.60	18	1			19
2.61 - 2.70	36	1			37
2.71 - 2.80	56	2			58
2.81 - 2.90	77	5		1	83
2.91 - 3.00	124	12			136
3.01 -3.10	165	12			177
3.11 - 3.20	209	20			229
3.21 - 3.30	290	38		2	330
3.31 - 3.40	331	38	1	2	372
3.41 - 3.50	315	52	1	2	370
3.51 - 3.60	304	41		1	346
3.61 - 3.70	241	32			273
3.71 - 3.80	225	28		2	255
3.81 - 3.90	119	31		1	151
3.91 - 4.00	42	17			59
Total	**2,568**	**331**	**2**	**11**	**2,912**

4.3 Family Income and Employment Outcomes

A chi-square test showed a significant association between family income and employment status, $\chi^2(6, N = 2,912) = 47.18$, $p < 0.001$. Cramér's $V = 0.18$ indicates a small to moderate association.

Lower-income graduates (RM2,000 and below) had the highest immediate employment rate (91.3%), often in lower-paying jobs. Graduates from higher-income families were more likely to pursue further studies, suggesting financial flexibility in delaying employment.

Table 2
Family income and employment outcomes of 2023 -2024 PMM graduates

Total Monthly Family Income	Status				Total
	Employed	Pursuing further studies	Waiting for job placement	Unemployed	
RM2,000 and below	989	89	1	4	1,083
RM2,001 - RM5,000	1,155	113	1	2	1,271
RM5,001 and above	424	129		5	558
Total	**2,568**	**331**	**2**	**11**	**2,912**

4.4 Family Income and Graduate Earnings

Pearson correlation analysis indicated a positive correlation between family income and graduate salary ($r = 0.36$, $p < 0.001$). Multiple linear regression analysis further confirmed this, showing that family income significantly predicts monthly graduate earnings ($\beta = 0.28$, $p < 0.001$), even when controlling for CGPA and study challenges. The overall model was significant: $F(3, 2{,}525) = 76.41$, $p < 0.001$, Adjusted $R^2 = 0.28$.

This suggests that socioeconomic background plays a significant role in shaping employment outcomes, possibly due to access to better networks and job opportunities (Bourdieu, 1986).

Table 3
Family income and graduate earnings of 2023 -2024 PMM graduates

Total Monthly Family Income	Graduates Monthly Income				Total
	RM1,500 and below	RM1,501 - RM3,000	RM3,001 - RM7,000	RM7,000 and above	
RM1,500 and below	211	332	7	2	552
RM1,501 - RM3,000	267	701	24	5	997
RM3,001 - RM7,000	164	554	27	3	748
RM7,000 and above	68	157	5	2	232
Total	**710**	**1,744**	**63**	**12**	**2,529**

4.5 Study Challenges and Employability

A chi-square test between study challenges and employment status showed significant association: $\chi^2(21, N = 2{,}912) = 76.09$, $p < 0.001$. Cramér's $V = 0.16$, suggesting a small but non-negligible effect.

Graduates reporting no major study challenges had the highest employment rate (88%). Those who reported financial difficulties had a slightly lower employment rate (87.6%), while those facing emotional distress had the lowest (87.2%). Despite small effect sizes, the results align with past research that emotional and financial barriers can marginally reduce job readiness (Jackson & Wilton, 2016).

Table 4
Study challenges and employability of 2023 -2024 PMM graduates

Main challenges faced during studies	Status				Total
	Employed	Pursuing further studies	Waiting for job placement	Unemployed	
Discrimination	14	1			**15**
Emotional distress	136	20			**156**
Learning facilities	88	6	1		**95**
Transportation facilities	143	21		1	**165**
Accommodation facilities	49	8			**57**
Financial issues	897	123		4	**1,024**
Communication	149	10			**159**
Others	8	1			**9**
None	1,084	141	1	6	**1,232**
Total	**2,568**	**331**	**2**	**11**	**2,912**

5.0 CONCLUSIONS

This study examined the employment outcomes of graduates from Politeknik Merlimau Melaka (PMM), focusing on the 2023 and 2024 cohorts. Using secondary data from the Kajian Pengesanan Graduan (SKPG) tracer study, the analysis explored how academic performance, family income, and study-related challenges influenced employability and post-graduation earnings.

Key findings revealed that academic performance, particularly a CGPA above 3.00, was significantly associated with improved employment prospects. However, a plateau effect indicated that exceptionally high CGPAs yielded diminishing returns, suggesting that non-academic factors such as soft skills and real-world experience become increasingly important. Family income also played a critical role—graduates from low-income backgrounds were more likely to seek employment immediately, often in lower-income roles, while those from higher-income households had the flexibility to pursue further studies or higher-paying positions. Additionally, study-related challenges, especially emotional and financial difficulties, were modestly associated with reduced employability.

These findings highlight the complex interplay of academic, socioeconomic, and personal factors in shaping graduate employment outcomes. As such, institutions should not only continue to support academic achievement but also strengthen non-academic interventions such as financial aid, mental health services, and career guidance to ensure more equitable employment pathways.

While this study provided valuable insights through quantitative methods, future research could adopt a qualitative approach to deepen the understanding of graduate experiences. In-depth interviews or focus groups with recent graduates could reveal how they perceive employability challenges, interpret their academic achievements, and navigate job searches. Additionally, longitudinal studies tracking career trajectories over time would provide a more comprehensive picture of how early employment outcomes evolve. Expanding the scope to compare across multiple polytechnics or education streams (e.g., TVET vs. university) may also help uncover systemic differences and inform more targeted policies.

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