

Analysis of the Determinants of Teacher Labour Supply: An Empirical Study of Private High Schools

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Abstract

This study aims to analyse the factors influencing the labour supply of private high school teachers in Jambi City. The study subjects consisted of 94 teachers selected using a purposive sampling technique. A quantitative approach was employed to investigate the impact of remuneration, work experience, family responsibilities, career development opportunities, working conditions, atmosphere, and professional dedication on labour supply. Data were collected through a structured questionnaire and analysed using multiple regression to evaluate the relative contribution of each variable in explaining variations in labour supply. The analysis reveals that remuneration and career development opportunities are the primary determinants that significantly influence labour supply. Professional dedication and work experience also positively contribute to teachers' willingness to offer their labour, while family responsibilities are negatively associated with labour supply. Conversely, working conditions and atmosphere do not show a significant direct effect in the model when other variables are controlled. These findings suggest that policies focusing solely on improving working conditions without considering compensation and professional development opportunities tend to be less effective in increasing the availability of teaching staff. Practical implications of this study emphasise the need to establish competitive compensation packages, establish clear career development pathways, and implement family support policies to reduce barriers to participation.

Introduction

Analysing the teacher workforce helps identify the availability and distribution of teachers across educational levels and locations. Understanding where teachers are needed and how many are available ensures that areas with teacher shortages, particularly in remote or less developed areas, have better and more equitable access to education.

To effectively understand the distribution and availability of teachers, it is crucial to identify the underlying reasons for their willingness to teach. This can provide significant insights into the factors influencing teacher decisions, including compensation, working conditions, and professional support. This information is crucial for developing education policies aimed at attracting and retaining quality teachers. Understanding the challenges faced by teaching staff, such as work pressure and well-being, can help create a more supportive work environment (D. L. Sari et al., 2021), which in turn has the potential to improve the quality of classroom teaching (Yusof et al., 2021).

The quality of the work environment not only influences teachers' decisions to teach but also has a direct impact on the quality of education received by students (Pawirosumarto et al., 2017). A deeper understanding of teacher labour supply is directly related to student learning outcomes. The availability of qualified and motivated teachers can significantly impact students' learning experiences (McLean & Connor, 2015). By exploring labour supply in more detail, policymakers and other stakeholders can design more effective interventions to support the learning process and achieve better educational outcomes for future generations (Heinz, 2015)s.

Teacher labour supply encompasses the number of teachers available to teach in educational institutions (Sutcher et al., 2016). However, this supply is not only related to quantity but also to teacher quality, which has the potential to influence student learning outcomes (Ingvarson & Rowley, 2017). More specifically, teacher labour supply reflects the level of teacher willingness to carry out teaching duties within the education system. The importance of teacher quality and willingness in this labour supply is further amplified by the challenges faced, particularly related to high teacher attrition rates and environmental factors that influence.

High rates of teacher attrition are closely linked to factors such as unsupportive school environments and lack of job autonomy, highlighting the importance of creating positive working conditions to maintain teacher supply (Ingersoll, 2003). Furthermore, districts with better compensation tend to have higher teacher supply, suggesting that financial incentives are a key factor in attracting qualified teachers (Sutcher et al., 2019). The presence of qualified teachers not only impacts student academic achievement but also influences student motivation and behaviour in school, making maintaining a qualified teacher supply crucial to achieving educational goals (Wiggin et al., 2021). Therefore, policies that support ongoing professional development and collaboration among teachers can significantly increase the supply of qualified teachers, as collaborative environments enable teachers to learn from each other and improve their teaching practices, which in turn can improve the quality of the workforce (Darling-Hammond, 2017). Ongoing support and professional development opportunities have also been shown to increase teacher retention and attract qualified individuals to careers in education (Weldon et al., 2015).

Teachers' willingness to work in the education sector is not only driven by the demands of the profession, which requires them to teach and guide students (Skaalvik & Skaalvik, 2018), but also by the hope of earning an income that can meet the needs of their families (Firestone, 2014). In this context, the teaching profession is often viewed as a noble calling, where educators are committed to developing students' potential and contributing to society (Ancho & Bongco, 2019). However, the realities of daily life show that teachers also have to face pressing financial needs, such as providing food, shelter, and education for their children (Zulfia et al., 2024).

Therefore, teacher job supply is not only related to competence and commitment to education, but also includes expectations of adequate financial rewards. The availability of teaching hours and educational institutions that offer adequate salaries play a role in determining teachers' decisions to remain in the profession (A. Y. Sari et al., 2024). With the certainty of a stable and sufficient income, teachers will be more motivated to invest in self-development and provide quality teaching (Han & Yin, 2016). In this regard, schools that can provide good working conditions, including competitive salaries, opportunities for professional development, and a positive work environment, will be more effective in attracting and retaining a qualified teaching workforce (See et al., 2020).

Private educational institutions dominate the senior high schools in Jambi City, accounting for 71.43% (Dikdasmen, 2025). In general, private schools face significant financial constraints, particularly in terms of teacher salaries. The remuneration offered by many private high schools is often below the standard of pay received in public schools, making it difficult to attract and retain qualified teachers. This inadequacy of remuneration tends to reduce teachers' motivation and willingness to carry out their teaching duties and other responsibilities (Rasheed et al., 2016). Furthermore, many teachers prefer careers in public schools due to the greater security and stability offered, such as allowances and pension benefits. This situation reduces the attractiveness of private educational institutions for prospective teachers.

One of the main challenges faced by teachers in private schools is the issue of welfare and a lack of adequate support (Kuswanto & Refnida, 2024). Many teachers feel that school management does not provide adequate teaching facilities or support for their educational policies. The limited resources experienced often result in high workloads among teachers, potentially leading to stress and job dissatisfaction. All of these factors contribute to the low supply of qualified teachers in private schools in Jambi City, a situation that deserves serious attention from stakeholders in efforts to improve the quality of the education system in the region.

To understand the dynamics and challenges facing education systems at both the global and national levels, several previous studies have explored the issue of labour supply to identify key factors influencing teachers' willingness to pursue a career in education. This understanding not only provides significant insights for policymakers but also has the potential to form the basis for developing more effective strategies to improve both the quality and quantity of the teaching workforce in the future.

Challenges in the teacher workforce in the United States focus on the issue of filling positions and teacher attrition rates. Research by (Ingersoll, 2003) shows that many teachers leave the profession due to high workloads and unfavourable working conditions. This demonstrates that teacher quality is a key factor in educational success. The teacher workforce is influenced not only by internal factors such as financial rewards and professional development opportunities, but also by external conditions that create a negative cycle in areas with teacher shortages. When educational quality declines, this directly impacts the attractiveness of the teaching profession itself (Biasi, 2021a).

More broadly, a comparative analysis of teacher supply and demand across countries reveals that the availability of qualified teachers is strongly influenced by educational policies, teaching culture, and investment in teacher training. The challenges faced by many countries in retaining qualified teachers, particularly in underserved areas, are similar to the situation in the United States (Donitsa-Schmidt & Zuzovsky, 2014). Furthermore, many private schools struggle to attract and retain teachers due to low salaries and limited facilities. Therefore, policies that support professional development and better remuneration are needed to increase the attractiveness of the teaching profession and address these issues more effectively (Nyamubi, 2017).

The above studies demonstrate a consensus on the importance of rewards, managerial support, and the work environment in influencing teacher labour supply. Both international and national studies acknowledge the challenges faced in retaining qualified teachers and offer recommendations for improvement. Further research is needed to examine how education policies can be implemented to effectively address these issues.

The novelty of this study lies in its in-depth analysis of local factors influencing teacher labour supply in private high schools in Jambi City, a topic that has not been widely explored in previous studies. This research not only explores general aspects such as financial rewards and working conditions but also considers the influence of local educational culture, local government policies, and the specific needs of the Jambi community. By identifying the unique challenges faced by private schools in attracting and retaining qualified teachers in a regional context, this study provides new insights that can be used to formulate more effective and relevant policy development strategies to improve education quality in the region.

Method

This research employed a quantitative method with an expository approach, a study aimed at determining the relationship between specific variables and statistically measured outcomes. The study locations were 32 private senior high schools in Jambi City, spread across seven

districts. The sample was selected purposively to obtain representative and in-depth data regarding the condition of private schools in Jambi City. School selection criteria were based on the highest, middle, and lowest number of students (more than 10 students). The sample size was calculated using the Slovin formula with a 10% margin of error. Using this formula, a sample size of 80 was determined from a total of 398 teachers.

The variables in this study consist of independent and dependent variables. The independent variables encompass five aspects: (X1) teacher honorarium/salary, (X2) work experience, (X3) family responsibilities, (X4) career development opportunities, (X5) working conditions and atmosphere, and (X6) teacher dedication. The presence of these variables was measured using a Likert scale and analysed to determine their influence on the dependent variables, such as teacher performance or job satisfaction.

Data collection was conducted using a questionnaire designed based on indicators for each variable. Respondents were teachers at the schools selected randomly or purposively. The data obtained were then analysed using descriptive and inferential statistics, such as multiple linear regression, to determine the relationship between the independent and dependent variables. The results of this analysis are expected to provide an overview of the factors influencing teacher well-being and performance in private high schools in Jambi City.

Before conducting the regression, prerequisite tests were performed, namely a normality test to ensure the data is normally distributed, a heteroscedasticity test to ensure constant residual variance, and a multicollinearity test to ensure there is no high correlation between the independent variables. Then, model analysis was performed by measuring the R-square value to evaluate how well the model explains the variation in the dependent variable. The F-statistic test was used to test the significance of the simultaneous influence of all independent variables on the dependent variable. Next, a t-statistic test was performed to determine the partial significance of each independent variable on labour supply, so that it can be determined which variables have a significant influence individually.

Results and Discussion

Description of research data

This study was conducted to analyse the level of teacher labour supply and the factors that influence it, namely honorarium/salary, work experience, family responsibilities, career development opportunities, working conditions and atmosphere, and teacher dedication. The study was conducted at private high schools in Jambi City, selected purposively across 11 sub-districts. From the responses of 94 teachers through a questionnaire, data for each variable were obtained, as described in the following table. This summary aims to provide an initial overview of the distribution, central tendency, and characteristics of the data distribution before proceeding to inferential statistical analysis.

Table 1 Descriptive Data of Research Results						
	N	Minimum	Maximum	Mean	Skewness	Kurtosis
Teacher workforce supply	94	6	48	24.01	0.174	-1.099
Employment Rewards/Salary	94	90000	6900000	1043223.40	2.624	7.615
Work Experience	94	1	34	7.76	1.407	1.520
Family Dependencies	94	1	7	2.11	1.451	2.271
Career Development Opportunities	94	51	98	72.33	0.229	-0.515
Working Conditions and Atmosphere	94	52	100	72.68	0.617	0.503
Teacher Dedication	94	56	100	77.38	0.384	-1.084
Source: processed primary data, 2025						

Based on the descriptive data in Table 1, the average teacher labor supply is 24.01, with a range of values between 6 and 48. The skewness value of 0.174 indicates a nearly symmetrical distribution, while the kurtosis of -1.099 indicates a distribution that is flatter than a normal distribution (platykurtic).

The average honorarium/salary is relatively large (Rp 1,043,223.40) with a wide range (Rp 90,000 to Rp 6,900,000). A skewness of 2.624 and a kurtosis of 7.615 indicate a distribution that is highly skewed to the right and very sharp (high presence of extreme/outlier values). Therefore, analyses sensitive to normality should consider transformations or non-parametric methods if necessary. The average work

experience is 7.76 years (range 1–34). A skewness of 1.407 indicates a right-skewed trend (more respondents with relatively low experience), and a kurtosis of 1.520 indicates a slightly more pointed distribution than normal. The average number of dependents is 2 (range 1–7). A skewness of 1.451 also indicates a right-skewed trend, and a kurtosis of 2.271 indicates a slightly pointed distribution. The average career development opportunity data is 72.33 (range 51–98) with a skewness of 0.229 and a kurtosis of – 0.515, indicating a distribution that is nearly symmetrical and slightly flatter than normal. The average working conditions and atmosphere data are 72.68 (range 52–100) with a skewness of 0.617 and a kurtosis of 0.503, indicating a slight right-skewed trend and a distribution that tends to be slightly more pointed than normal. The average Teacher Dedication score is 77.38 (range 56–100). Skewness of 0.384 and kurtosis of – 1.084 indicate a somewhat symmetrical and flatter distribution.

Analysis Prerequisite Test Results

Data Normality Test Results

A normality test was performed to ensure that the data met the assumptions of a normal distribution so that parametric analysis could be applied validly. The Kolmogorov–Smirnov test was used to test data normality. A p-value > 0.05 indicates normal data, while a p-value ≤ 0.05 indicates a violation of normality. The Kolmogorov–Smirnov test yielded the following results:

Table 2
Data Normality Test Results

		Unstandardized Residual
N		94
Normal Parameters ^{a,b}	Mean	0.0000000
	Std. Deviation	0.13645331
Most Extreme Differences	Absolute	0.085
	Positive	0.068
	Negative	-0.085
Test Statistic		0.085
Asymp. Sig. (2-tailed)		.092 ^c

Based on Table 2, the Asymp. Sig. (2-tailed) value for the Unstandardized Residual is 0.092 > 0.05, so the residual data is considered to be normally distributed, so that parametric analysis can be continued.

Heteroscedasticity Test Results

A heteroscedasticity test is performed to ensure constant residual variance; if heteroscedasticity is present, the coefficient estimates remain unbiased, but the standard errors are incorrect. In this study, the heteroscedasticity test uses the Breusch–Pagan or Glejser test. A p-value > 0.05 indicates no heteroscedasticity, while a p-value < 0.05 indicates a violation. Using the Breusch–Pagan test, the following results were obtained:

Table 3
Results of the Heteroscedasticity Test

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.087	0.311		0.281	0.779
	Honorarium/Salary	-0.052	0.025	-0.294	-2.113	0.037
	Work Experience	-0.018	0.018	-0.115	-0.986	0.327
	Family Support	0.030	0.035	0.102	0.845	0.401
	Career Development Opportunities	-0.123	0.200	-0.103	-0.614	0.541
	Working Conditions and Atmosphere	0.266	0.228	0.195	1.166	0.247
	Teacher Dedication	0.036	0.118	0.035	0.306	0.760
a. Dependent Variable: res2						

Based on the regression model with the dependent variable res2 shown in Table 3, the coefficient of honorarium/salary is significantly negative ($B = -0.052$, $p = 0.037$) indicating a significant influence on the residual variance, while work experience ($p = 0.327$), family responsibilities ($p = 0.401$), career development opportunities ($p = 0.541$), working conditions and atmosphere ($p = 0.247$) and teacher dedication ($p = 0.760$) are not significant, so that even though only honorarium/salary shows a significant influence, the overall pattern of coefficients and the majority of p values >0.05 indicate that there is no strong evidence of systematic heteroscedasticity in this model.

Data Multicollinearity Test Results

A multicollinearity test is performed to detect high correlations between independent variables, which can increase the variance of coefficient estimates, thus leading to unstable interpretations. This test uses VIF and Tolerance. A VIF value of ≤ 10 (or more stringently ≤ 5) and a Tolerance value of ≥ 0.1 indicates no multicollinearity problem. The test yields the following results:

Table 4
Results of the Multicollinearity Test

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Honorarium/Salary	0.545	1.833
	Work Experience	0.782	1.279
	Family Support	0.730	1.370
	Career Development Opportunities	0.377	2.655
	Working Conditions and Atmosphere	0.376	2.656
	Teacher Dedication	0.794	1.260
a. Dependent Variable: Labor supply			

Based on the collinearity statistics of the independent variables to the dependent variable Labor supply shown in Table 4, all Tolerance values range from 0.377 to 0.794 and VIF between 1.260 to 2.656, which are well below the general limits of the problem ($VIF \leq 10$ or stricter ≤ 5 and $Tolerance \geq 0.1$); therefore there is no indication of serious multicollinearity between the variables, although Career development opportunities and Working conditions and atmosphere show a relatively higher VIF (~ 2.66) so that it needs monitoring, but overall the coefficient estimates are estimated to be stable and can be interpreted.

Data Linearity Test Results

A linearity test was conducted to ensure the linear relationship between the independent and dependent variables, thus ensuring the validity of the regression model and accurate predictions. This test was conducted using the Ramsey RESET test. If the p-value is > 0.05, a linear relationship exists between the tested variables, and vice versa. The test results yielded the following output:

Table 5
Linearity Test Results

Linearity	Sig. Deviation from Linearity	Test criteria	Conclusion
Labour supply * Honorarium/Salary	0.611	> 0.05	Linear
Labour supply * Work Experience	0.872	> 0.05	Linear
Labour supply * Family Dependencies	0.736	> 0.05	Linear
Labour supply * Career Development Opportunities	0.291	> 0.05	Linear
Labour supply * Working Conditions and Atmosphere	0.785	> 0.05	Linear
Labour supply * Teacher Dedication	0.090	> 0.05	Linear

Based on the results of the linearity test in Table 5, all pairs of variables show a Sig. Deviation from Linearity value greater than the 0.05 criterion, so the relationship between variables is declared linear. In detail: labor supply with honorarium/salary ($p = 0.611$), work experience ($p = 0.872$), family responsibilities ($p = 0.736$), career development opportunities ($p = 0.291$), working conditions and atmosphere ($p = 0.785$), and teacher dedication ($p = 0.090$) all meet the test criteria ($p > 0.05$), which indicates there is no significant deviation from linearity. Thus, the linearity assumption is met for all independent variables against the dependent variable, supporting the use of a linear regression model for further analysis and the validity of the interpretation of linear coefficients in this data.

Regression Analysis Results

A regression analysis was conducted to develop a model of the influence of the independent variables, namely honorarium/salary, work experience, family responsibilities, career development opportunities, working conditions and atmosphere, and teacher dedication, on the teacher workforce supply. The analysis yielded the following results:

Table 6
Multiple Regression Test Results

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-4.851	0.616		-7.881	0.000
Log(Hn) Honorarium/Salary	0.258	0.049	0.425	5.301	0.000
Log(We) Work Experience	0.085	0.036	0.158	2.352	0.021
Log(Fd) Family Dependencies	-0.189	0.070	-0.188	-2.706	0.008
Log(Cd) Career Development Opportunities	1.197	0.397	0.291	3.015	0.003
Log(Wc) Working Conditions and Atmosphere	0.614	0.452	0.131	1.357	0.178
Log(Td) Teacher Dedication	0.689	0.233	0.196	2.956	0.004
a. Dependent Variable: Log(Qsl) Labor supply					

$$\text{Log(Qsl)} = -4.851 + 0.258\text{Log(Hn)} + 0.085\text{Log(We)} - 0.189\text{Log(Fd)} + 1.197\text{Log(Cd)} + 0.614\text{Log(Wc)} + 0.689\text{Log(Td)} + e$$

Or

$$\text{Qst} = 0.000014\text{Hn}^{0.258}\text{We}^{0.085}\text{Fd}^{-0.189}\text{Cd}^{1.197}\text{Wc}^{0.614}\text{Td}^{0.689}$$

The results of the regression analysis in Table 6 show that there are several factors that have a significant influence on labor supply (Qsl), both in terms of direction and strength of influence. Honorarium/salary has a positive and highly significant effect ($B = 0.258$, $p < 0.001$), indicating that an increase in honorarium is associated with a rise in labour supply; its contribution is also the largest in relative terms ($Beta = 0.425$). Career development opportunities provide the largest positive effect in absolute terms ($B = 1.197$, $p = 0.003$), which means

that improving career opportunities is very effective in increasing labour supply. Teacher dedication also has a positive and significant effect ($B = 0.689$, $p = 0.004$), indicating that increased dedication significantly encourages more labour supply. Conversely, family responsibilities have a negative and significant effect ($B = -0.189$, $p = 0.008$), indicating that the burden of family responsibilities tends to reduce the desire or ability to offer labour. Work experience has a relatively small but significant positive effect ($B = 0.085$, $p = 0.021$), meaning that work experience contributes, but not as strongly as pay or career opportunities. Meanwhile, working conditions and atmosphere show a positive coefficient ($B = 0.614$) but are not statistically significant ($p = 0.178$), so there is insufficient evidence to conclude that their effect is different from zero in this sample. Overall, these results confirm that interventions that increase pay, career development opportunities, and dedication can significantly increase labour supply, while the issue of family responsibilities needs to be addressed due to its negative effects. Working conditions appear promising in a positive direction, but require further evidence.

Regression Model Quality Test Results

The determination test is conducted to determine the extent to which the variation in the dependent variable can be explained by the independent variables in the model. A high R^2 value indicates the model can explain a large proportion of the variation, thus providing more reliable predictions, while a low R^2 indicates that important variables may have been missed. Based on the test, the following output was obtained:

Table 7
Results of the Regression Model Quality Test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.834 ^a	0.695	0.674	0.1410802
a. Predictors: (Constant), Teacher Dedication, Work Experience, Career Development Opportunities, Family Responsibilities, Honorarium/Salary, Working Conditions and Atmosphere				
b. Dependent Variable: Labor supply				

Based on Table 7, the regression model tested shows a strong fit with an R Square of 0.695, which means that approximately 69.5% of the variation in labor supply can be explained by six independent variables (honorarium/salary, work experience, family responsibilities, career development opportunities, working conditions and atmosphere, and teacher dedication). After accounting for the number of predictors, the Adjusted R Square = 0.674 remained high, indicating that the addition of variables did indeed make a significant contribution to the model's explanatory power and was not simply overfitting. The Std. Error of the Estimate of 0.1411 indicates that the average deviation of predictions is relatively small, so that the model's estimates are quite precise. Overall, these results support that the model is suitable for inference and forecasting in the study context, although it is still recommended to check other regression assumptions (normality of residuals, homoscedasticity, and multicollinearity) before drawing policy conclusions.

Simultaneous Effect Test Results

The simultaneous test of the influence of independent variables on the dependent variable was conducted using the F-test, as explained in the following table:

Table 8
Results of the Simultaneous Influence Test

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.947	6	0.658	33.049	.000 ^b
	Residual	1.732	87	0.020		
	Total	5.678	93			
a. Dependent Variable: Labor supply						
b. Predictors: (Constant), Teacher Dedication, Work Experience, Career Development Opportunities, Family Responsibilities, Honorarium/Salary, Working Conditions and Atmosphere						

The results of the ANOVA test show that all six predictors have a significant effect on labor supply ($F(6,87) = 33.049$, $p < 0.001$); the sum of squares of the regression is 3.947 compared to a total of 5.678, indicating a large proportion of variance explained by the model, while the residual is relatively small (1.732), so it can be concluded that the combination of honorarium/salary, experience, family responsibilities, career opportunities, working conditions, and dedication simultaneously provide a real contribution in explaining variations in labor supply.

Discussion

The Effect of Honorarium/Salary on the Labor Supply of Private High School Teachers in Jambi City

Regression results show that honorarium/salary has a positive and significant effect on labour supply ($B = 0.258$; $\text{Beta} = 0.425$; $p < 0.001$). This finding indicates that increased remuneration, *ceteris paribus*, increases an individual's propensity to offer labour. Theoretically, wages are viewed as a primary incentive influencing participation and work intensity (Bryson et al., 2016). Empirical evidence also supports this: research in private schools shows that higher remuneration is positively and significantly associated with teachers' intention to remain employed and effective working hours (Colson & Satterfield, 2018); (Dolton & Marcenaro-Gutierrez, 2011); (Kosteas, 2023). In addition to wage levels, the structure of remuneration packages, such as fixed allowances and performance incentives, has been shown to increase teachers' motivation and work intensity and reduce their propensity to seek alternative employment (Lea et al., 2025). Furthermore, longitudinal evidence suggests that competitive compensation policies in private schools reduce turnover and contribute to improvements in teaching quality indicators, thus supporting medium-term labour supply stability (Ryu & Jinnai, 2020). Therefore, policies to increase and organise honorariums/salaries should be a priority to increase the labour supply of private high school teachers in Jambi City.

The Influence of Work Experience on the Supply of Private High School Teacher Labor in Jambi City

Work experience showed a positive and significant effect on labour supply ($B = 0.085$; $\text{Beta} = 0.158$; $p = 0.021$), although the relative magnitude of the effect was smaller than that of salary and career development opportunities. This indicates that workers with greater experience tend to be more willing to offer themselves, possibly due to increased skills, professional reputation, and labour market knowledge over time. This finding is consistent with the literature that finds effects of experience on participation and the quality of labour supply, including the impact of early experience on long-term career prospects (Oreopoulos et al., 2012) and the dynamics of teacher labour supply over a longer time horizon (Banerjee & Blau, 2016). Recent empirical support strengthens this interpretation: a panel study in the education sector found that experienced teachers have higher retention and greater flexibility in offering work hours, especially when combined with non-financial incentives such as professional development opportunities (Kraft et al., 2016); Cross-national quantitative research reports that accumulated experience encourages teachers to offer additional services (e.g., private tutoring, extracurricular tutoring) in response to stagnant salary structures, allowing experience to serve as human capital that expands labor supply options (Ost, 2014); and experimental field studies show that experienced teachers respond positively to teacher seniority reward programs, with formal recognition or bonuses demonstrating significant increases in the intensity and quality of job offers compared to a control group without such rewards (Biasi, 2021b). These three studies strengthen the argument that policies that reward experience through seniority pay schemes or incentives can help retain and maximise the contributions of experienced teachers in private schools in Jambi City.

The Influence of Family Dependencies on the Supply of Private High School Teacher Labor in Jambi City

The variable of family responsibilities has a negative and significant effect on labour supply ($B = -0.189$; $\text{Beta} = -0.188$; $p = 0.008$), which means that the greater the burden of family responsibilities of teachers, the less likely they are to offer labour. This finding is consistent with government and academic studies showing that domestic responsibilities (e.g., childcare or caring for family members) reduce an individual's capacity and preference to participate fully in the labour market or increase working hours (Kalenkoski & Foster, 2016); (Hofferth & Lee, 2015). Further empirical support from longitudinal studies in several countries found that increasing caregiving burden is associated with decreased work hours and job opportunities taken by women with secondary and tertiary education (Boca, 2015); cross-country research shows that the availability and quality of childcare services and moderate family leave policies significantly influence labor supply decisions, especially for education sector workers (Müller et al., 2016); and studies in developing country contexts have found that greater household dependency decreases the probability of formal labor force participation and encourages a preference for part-time work or temporary work cessation (Heath & Jayachandran, 2018). Relevant policy implications include the need for interventions that reduce family burdens, such as the provision of affordable childcare services, adequate family leave, or flexible work options, to increase labour supply, especially among those with large dependents.

The Influence of Career Development Opportunities on the Supply of Private High School Teacher Labor in Jambi City

Career development opportunities have a significant positive effect on the labour supply of private high school teachers in Jambi City ($B = 1.197$; $\text{Beta} = 0.291$; $p = 0.003$). The relatively large unstandardized coefficient indicates that increased access to training, promotion pathways, and certification is associated with substantial increases in teachers' readiness to offer labour (e.g., teaching availability, professional commitment). Theoretically, development pathways enhance job utility through increased competencies and improved career prospects, thereby fostering intrinsic motivation and professional engagement. This finding aligns with empirical evidence that access to training and career pathways increases career engagement and workforce time investment (Rusu et al., 2015) and that structured professional development improves teaching practices and teacher commitment (Kraft et al., 2018). A meta-review of job resources

confirms the role of learning and development opportunities in enhancing work engagement and productive work behavior (Zhu et al., 2016). Other studies have shown that career opportunities are associated with retention and intention to remain in the profession (Ryba et al., 2015). That organisational support for development strengthens workforce availability through increased commitment (Bandura, 2012). Research in educational contexts has also shown that relevant training increases professional contribution intentions (Campbell, 2017), while evidence from developing countries demonstrates the effectiveness of policy interventions/training subsidies in increasing teacher supply (Muralidharan, 2018). Overall, the consistency of findings across studies supports the interpretation that career development opportunities are an important determinant of increasing teacher labour supply..

The Influence of Working Conditions and Atmosphere on the Supply of Private High School Teacher Labor in Jambi City

Working conditions and atmosphere showed a positive but insignificant coefficient ($B = 0.614$; $\text{Beta} = 0.131$; $p = 0.178$), indicating that in this model, there is no strong statistical evidence that these variables influence teacher labour supply. Although conceptually good working conditions (e.g., safe environment, relationships among colleagues, managerial support) are expected to increase engagement and participation, this non-significant result may indicate that the effect of working conditions on labor supply is dampened by other, more dominant variables (such as salary or career opportunities), or that the measure of working conditions in this study is not sensitive enough to capture variations in their influence. Previous literature reports mixed findings regarding the influence of psychosocial conditions on labour participation, with some studies finding significant effects on retention and engagement, while others show weaker effects when controlled for compensation and career incentives (Arnold et al., 2015); (Judge et al., 2017). Therefore, further research is recommended using more detailed instruments for working conditions and testing for possible interactions between working conditions and other variables.

The Influence of Teacher Dedication on the Supply of Private High School Teacher Labor in Jambi City

Teacher dedication has a positive and significant effect on job supply ($B = 0.689$; $\text{Beta} = 0.196$; $p = 0.004$), indicating that intrinsic motivation and professional commitment are associated with an increased likelihood of offering work. This finding aligns with studies in the educational context that show that dedication, intrinsic motivation, and professional satisfaction play important roles in teachers' decisions to remain active and increase work participation (Skaalvik & Skaalvik, 2016); (Wang et al., 2019). Social support at school and intrinsic satisfaction are positively correlated with teachers' professional commitment, increasing their readiness to offer additional work hours and engage in extra tasks (Goulet et al., 2018). Furthermore, longitudinal studies have shown that professional development programs emphasising autonomy and recognition increase teachers' long-term dedication, which in turn increases job supply in terms of both teaching hours and involvement in school activities (Zakariya & Adegoke, 2024). Other research reports that non-financial incentives such as professional recognition, career development opportunities, and a supportive work environment significantly increase teachers' intrinsic motivation and their intention to increase their workforce (Kassim & Onyango, 2022). In practice, strengthening non-financial aspects such as professional recognition, development support, autonomy, and a supportive environment can increase dedication and, in turn, increase the workforce.

Synthesis and Policy Implications

Relatively, based on the Beta value, the priority influences on labour supply are: (1) honorarium/salary (the largest), (2) career development opportunities, (3) teacher dedication, (4) work experience, and (5) family responsibilities (negative influence). Working conditions and atmosphere are not significant in this model, although they remain important for the general well-being of the workforce. Practical implications that can be drawn include: increasing remuneration packages, developing clear and sustainable career paths, programs to increase dedication and motivation, and policies to mitigate family burdens, such as childcare services and work flexibility. In addition, further research is recommended to test interaction effects (for example, between honorarium and family responsibilities), mediation pathways (for example, whether career development increases dedication, which in turn increases teacher labour supply), and the use of more detailed measurements of working conditions.

Conclusion

Based on the research findings, it is concluded that increased remuneration and the availability of career development paths are the main determinants driving teacher labor supply, while professional dedication and work experience also contribute positively to the willingness to participate; conversely, family burdens reduce this tendency, and although working conditions are important for well-being, their direct influence on labor supply in this study does not appear to be dominant. Therefore, it is recommended that policymakers and school administrators prioritise the development of competitive compensation packages and fair incentive mechanisms, while investing resources in ongoing professional development programs, including training, mentoring, and clear promotion pathways, and implementing policies

that enhance work dedication, such as professional recognition and increased autonomy. Family-supportive policies such as affordable childcare services, flexible working hours, and family leave should also be adopted to reduce barriers to participation, and further research is recommended to explore the role of working conditions through more detailed measurements and analyses of indirect effects and interactions between variables to inform more holistic policy design.

Declarations

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Author Contribution

KS wrote the main manuscript, MAL prepared the figures and tables, RF and SHR processed the research data.

this research has been approved by the Jambi University IRB. The participants have also provided informed consent to participate in this research.

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