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# Examining the role of family sociology, managerial support, and working conditions in determining teacher performance in Indonesia: the mediating role of motivation and professional development

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In developing countries like Indonesia, responsible agencies have yet to consider in-depth factors in building better teacher performance in secondary education. Contemporary educational research has explored the relationship between motivation and professional development on teacher performance. However, there needs to be more understanding of this relationship with family sociological conditions, levels of managerial support, and different working conditions. This research examines how motivation and professional development can determine teacher performance by involving these three conditions. This research involved 474 secondary education teachers voluntarily and with specific criteria profiles tailored to their needs. Data collection was assisted using a closed questionnaire with a four-point Likert scale, tested for validity and reliability. Structural Equation Modeling was used to analyze data through path analysis and bootstrap methods. The findings prove the importance of motivation and professional development supported by family sociological conditions, managerial support, and proportional workload in determining teacher performance. These results shed light on secondary education providers in strengthening professional development and simultaneously strengthening teacher motivation which has so far often been overlooked. The strategy used is to provide support in the managerial aspect to create work comfort and a proportional workload to make it easier for teachers to carry out technical development. Lastly, support and positive relationships from the family contribute to strengthening the teacher's mentality which leads to strengthening work motivation. In conclusion, teacher performance in secondary education can be optimal by carrying out self-development, strengthening motivation, proportional performance, in addition to managerial and family support in establishing mental health.

## KEYWORDS

teacher performance, motivation, professional development, family sociology, managerial support, working condition

# 1 Introduction

Human resource development (HRD) is vital to improving the micro and macro economy (Correa, 1982). HRD can be done through formal education on several levels to equip cognitive, affective, and psychomotor competencies (Meifert, 2013). Secondary education (SE) is a significant level that is the foundation for supporting the quality of HRD graduates (Dewey, 2001; Reimers, 2022). Therefore, all stakeholders responsible for implementing education continue developing strategies (Longenecker and Barnum, 2017; Muhammad et al., 2020; Alonso-Secades et al., 2022). One of them is in the field of human resources responsible for learning, namely teachers (Psacharopoulos, 2003; Buchori et al., 2021). Teachers at both levels must perform according to their primary duties and functions in managing learning (Reimers, 2022). Teachers are always seen as the most responsible human resource in learning (Mokhtar et al., 2021). Management, which includes planning, implementation, and evaluation, is an aspect that must be done comprehensively (Keiler, 2018). However, the complexity of teacher performance (TP) makes the issue always a topic of conversation that continues to flow to be solved from one period to the next, especially in developing countries, such as Indonesia, which continues to face educational problems, especially regarding teachers as educational human resources (Mutohhari et al., 2021; Nurtanto et al., 2021).

In the context of Indonesia, the educational landscape is marked by significant challenges and opportunities. With a large and diverse population, Indonesia's education system must cater to varying regional needs and socio-economic conditions. This research is timely and important because it addresses the critical need to understand and improve teacher performance, which is a cornerstone of educational quality. This is also in line with supporting the Indonesian Government's efforts to continue reforming its education system through teacher development (Maliki et al., 2021; Wang C. et al., 2023). By examining factors such as family sociology, managerial support, and working conditions, this study aims to provide actionable insights that can enhance teacher performance and, by extension, student outcomes. Two critical issues are developing namely temporary and contemporary issues. Contemporary issues usually depend on constantly evolving issues, such as developments in science and technology or political dynamics that affect the stability of education policy (Akbari Motlaq and Tengku Mahadi, 2020; Mutohhari et al., 2021). Meanwhile, contemporary issues refer to problems that occur on an ongoing basis and are inherent in individuals who are influenced by differences in identity and background (Fakhrutdinova et al., 2020; Toropova et al., 2021).

In general, motivation (Mo) and professional development (PD) are seen as two critical aspects that parameterize TP in teachers in SE (Irnidayanti et al., 2020; Spittle et al., 2022). Mo and PD are the fundamental reasons for the growth of performance (Hosen et al., 2021; Kholifah et al., 2021; Zeng, 2023). Changes in competency needs at any time are the reasons PD is essential (Krulatz et al., 2022). In addition, formal certificates from PD activity results are also used to legally recognize competence in the field when teaching a particular subject (Tonga et al., 2022; Zeng, 2023). Then, Mo has a solid tendency to perform professional duties as a teacher (Zhang et al., 2021). Teacher's Mo as a booster to realize learning goals through various specific efforts (Njenga, 2023). Strong Mo will trigger teachers to perform their primary duties and functions as learning managers,

especially in planning, implementing, assessing, and evaluating (De Naeghel et al., 2016). In addition to the fundamental changes that continue to occur in education, Mo plays a role in encouraging teachers to always strive to be adaptive to change through developing their competence (McMillan et al., 2016; Aguilar-Mediavilla et al., 2023). An extensive study measuring the high effort of teachers undertaking continuous professional development that is caused by high motivation (Liu et al., 2019). Therefore, teacher motivation and professional development should be a significant concern for educational institutions to improve their performance.

Existing research has identified several factors influencing teacher Mo and PD. For example, Mo is significantly influenced by teacher satisfaction, which leads to their wellbeing (Ahmed and Malik, 2019; Ibrahim et al., 2021). Regarding technological development, the ease and flexibility of digital media accessibility are also highlighted to comprehensively affect teachers' Mo and PD levels (Kholifah et al., 2023). In fact, compensation, occupational safety, and health insurance are claimed to significantly increase teacher Mo and PD (Han and Yin, 2016; Zhang et al., 2021). However, there is a notable research gap in understanding the combined effects of family sociology (FS), managerial support (MS), and working conditions (WC) on teacher performance through the mediating roles of motivation and professional development. The novelty of this study lies in its comprehensive approach to examining the combined effects of family sociology, managerial support, and working conditions on teacher performance through the mediating roles of motivation and professional development. While previous research has explored these variables separately or in pairs, this study is the first to integrate them into a unified framework, providing a holistic understanding of how these factors interact to influence teacher performance. Additionally, the focus on the Indonesian context, with its unique educational challenges and socio-economic diversity, offers new insights that can inform targeted strategies for improving teacher performance in similar settings. This study fills a significant research gap by highlighting the interconnectedness of family, managerial, and working conditions and their collective impact on teacher performance, thereby offering actionable recommendations for policymakers and educational practitioners.

The problem is that although aspects of social capital are widely considered, research that refers to the background and conditions of individuals in the family is less highlighted (Meifert, 2013). This refers to the household's harmony, communication, and individual relationships (McMillan et al., 2016). The performance of employees in an organization is very vulnerable to being influenced by their psychological conditions due to social inequality in their families (de Almeida, 2017; Mohamed et al., 2021). In addition, teachers' focus on teaching can decrease drastically when family problems are faced (Castrén et al., 2021). Moreover, most teachers are not open enough to disclose it, causing significant problems in the future (Ball, 2008).

The low level of TP in teaching across schools was due to the lack of rewards when they achieved specific achievements (Yusuf et al., 2018). When interviewed, they also admitted that they needed more incentives or financial support from managers to encourage them to develop their competencies. In addition, school policies considered less favorable to teacher career development are also indicated to be one of the main factors in the decline of Mo and PD, leading to low TP. In terms of managerial infrastructure, it is also a concern that the need for more appropriate media support from leaders for teachers is

the reason for stagnant teacher performance (van Lankveld et al., 2017; Spruyt et al., 2021). The occurrence of negative dynamics in school management has consequences for not optimizing TP (Eirín-Nemiña et al., 2022). This section confirms that managerial support (MS) on the human, financial, technological, and methodological sides is important (Kurniasari et al., 2019).

However, an important thing that should be remembered is that teachers, as human resources in schools, have limits and must receive certain tolerance (de Almeida, 2017; Muhamad Nasharudin et al., 2020). These limits are commonly known as ideal work conditions (WC) carried out by teachers by their primary duties and functions (Charria Ortiz et al., 2022). WC includes work environment conditions, workload, feedback received during work, and social interactions (Meifert, 2013). WC beyond the tolerance limit causes a decrease in enthusiasm for teaching. For example, an uncomfortable work environment, reducing teacher focus (Admiraal, 2022). Another example related to individualism in school work (Zhang et al., 2021), which indicates that the lack of interaction and social relationships between school members reduces teacher Mo and PD. In addition, from the perspective of honorary teachers in Indonesia, it is revealed that the mismatch between their wages and workload is problematic for improving their performance (Nurtanto et al., 2021). Even a study teachers who are overloaded with teaching also do not have a primary focus on developing their competencies on an ongoing basis (Li et al., 2019). Thus, we have strong reasons to examine the role of Mo, PD, FS, MS, and WC in determining TP in SE teachers. We also aim to confirm the mediating role of Mo and PD in mediating FS, MS, and WC in determining TP. Figure 1 visualizes the conceptual framework of this study.

## 2 Literature review

### 2.1 The role of family sociology, managerial support, and work condition, on motivation and professional development

As discussed earlier, variations in motivation (Mo) and professional development (PD) levels are the leading causes of variations in teacher performance (TP) levels (Hosen et al., 2021; Zeng, 2023). Rationally, Mo provides encouragement and PD becomes a means of developing teacher competencies so that solid encouragement and balance by continuous PD efforts, TP optimization will also be sustainable (Effiyanti et al., 2023; Kumari and Kumar, 2023). Therefore, various literatures have agreed before and confirmed their research reports. First, it needs to be understood that the social environment in a teacher's life is important and is divided into three parts: school, community, and family (Fagan, 2017; Waber et al., 2021; Zarifanaiey et al., 2022). The incompatibility of one of these environments is reported to affect their psychological condition, which in turn affects their performance (Romel et al., 2021). The social conditions in the family environment are the most critical aspect in determining their psychological state in performance improvement (Ghazali and Tan, 2021). This indicates that family sociology (FS), which relates to an institution and socialization unit between individuals emotionally bound by kinship, affects individual performance at work (Sarwar et al., 2021; Nurtanto et al., 2022a). FS includes the

relationship and interaction of individuals in the family, the division of the labor system, the diversity of characters and identities, outside intervention in the family, and the extent of support between individuals. Although rarely studied in the education sector, the fact is that more than 80 % of workers who have problems in their family life have an impact on their performance (Isa and Indrayati, 2023). Low FS in individuals can result in decreased motivation to work, self-development, and even more fatally end in depression and worse (Soomro et al., 2018). Low FS conditions that reduce Mo at work automatically reduce teachers' intention to carry out PD (Batur and Nart, 2014; Mohammadi and Fashkodi, 2021).

*H1: Family sociology plays a role in determining teacher motivation.*

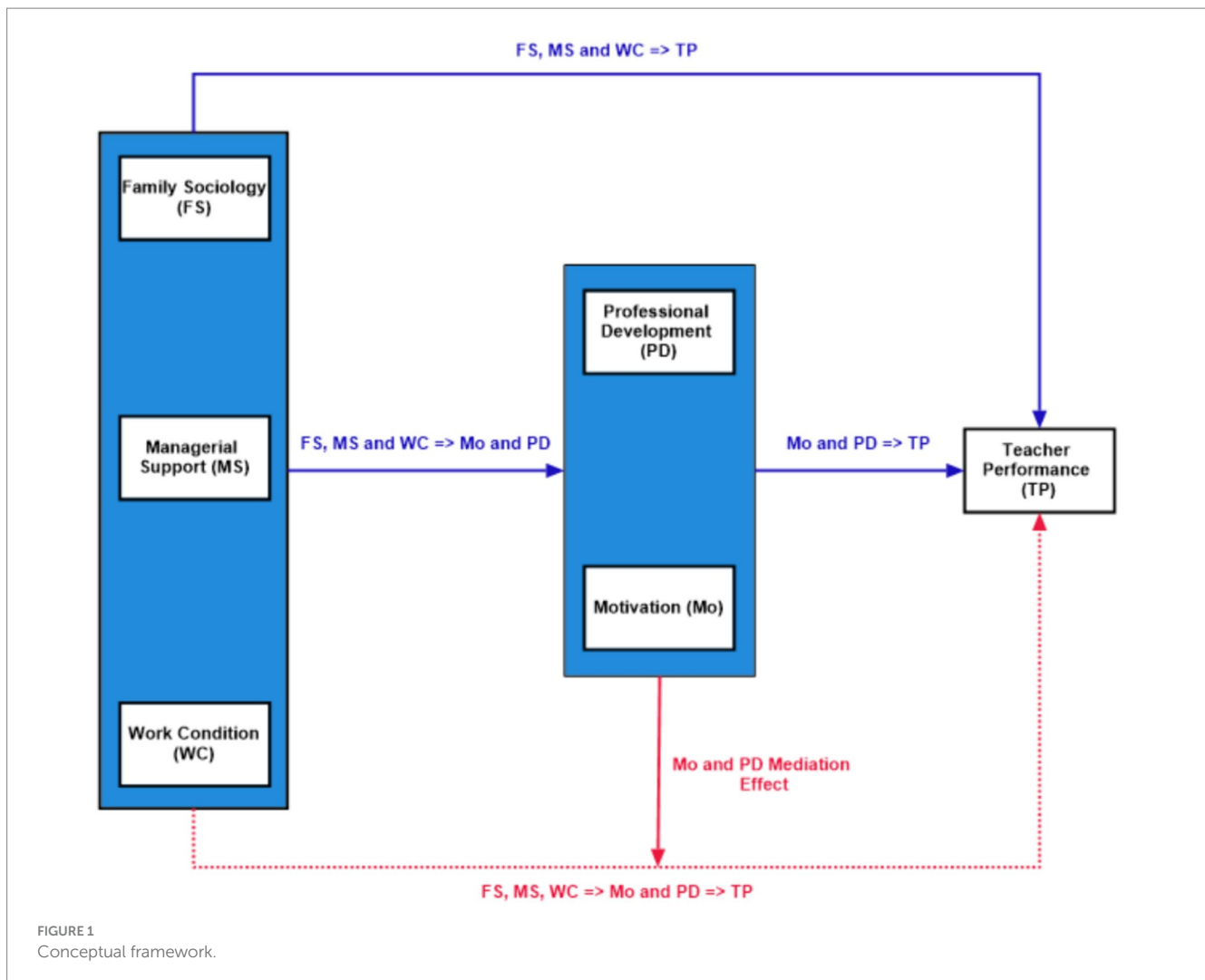
*H2: Family sociology plays a role in determining teacher professional development.*

Furthermore, Mo and PD in human resources are very vulnerable to managerial dynamics in organizations or institutions (Mutohar and Trisnantari, 2020; Laghari and Hussain Jafri, 2022). For example, a policy that does not favor certain workers' welfare will affect workers' loyalty and perspective, improving teachers' Mo and PD toward their institutions. Policies that corner teachers will decrease their Mo to improve the quality of their educational institutions (Paturusi and Achmad, 2017). Moreover, if the whole managerial, which includes 5M (man, money, material, machine, method), indicates impartiality to teachers, it will affect their professionalism at work (Yao et al., 2020). Therefore, managerial support (MS) must be pursued based on fairness to all employees to support their TP. MS must also be equitable in all aspects so that efforts to improve the quality of education through TP are sustainable. Evenly distributed and fair MS will lead workers to their Mo and PD (van Lankveld et al., 2017; Spruyt et al., 2021). However, efforts to improve teachers' Mo and PD are also inseparable from their working conditions (Khairunnisa and Riyanto, 2020; Muhamad Nasharudin et al., 2020; Sutiman et al., 2022). Undeniably, many teachers complain about the inappropriateness of working conditions that decrease Mo and PD as welfare also decreases. Working conditions are related to the work environment, workload, feedback, and working relationships lived by teachers (Correa, 1982). In short, the perceived comfort of the work environment will make teachers feel at home teaching (Son and Yarnest, 2020). The workload by the capacity and wages received affects their welfare (Ahrari et al., 2021). In addition, the compensation provided under certain conditions adds to their confidence in working hard (Muhammad, 2015). Then, working relationships between employees and leaders with subordinates also lead teachers to work comfortably (de Almeida, 2017). All of these aspects boil down to Mo and PD, which can be improved, along with working conditions that are by the conditions of the teacher.

*H3: Managerial support plays a role in determining teacher motivation.*

*H4: Managerial support plays a role in determining teacher professional development.*

*H5: Work conditions play a role in determining teacher motivation.*



H6: Work conditions play a role in determining teacher professional development.

## 2.2 The role of family sociology, managerial support, work condition, motivation, and professional development on teacher performance

The variations in FS, MS, and WC conditions teachers perceive have been explained as affecting their Mo and PD. While the existence of Mo and PD is the main reason for whether TP is optimal or not, PD is systematically constructed through the construction of Mo and PD intensity carried out through strengthening the conditions of FS, MS, and WC (Hosen et al., 2021; Isa and Indrayati, 2023; Zeng, 2023). Recently, it has also been reported that there is a direct link between psychological wellbeing caused by FS conditions and TP (Isa and Indrayati, 2023). Positively occurring FS was shown to determine an increase in TP (Soomro et al., 2018). Meanwhile, a decrease in teaching focus in teachers with an adverse FS condition suppresses their psychological condition, thus affecting their teaching

performance (Kholifah et al., 2023). Other relevant research also explained that some workers who failed to build social connections in the family were recorded as having low ratings in supervision results (Isa and Indrayati, 2023). This indicates that the low condition of the FS is so influential that it gives an individual psychological shock, which certainly disrupts their focus on various activities, such as teaching. Then, the attention to teachers through MS also makes them feel happy and builds their spirit to continue improving their performance (Paturusi and Achmad, 2017). If MS can be pursued in all aspects (5M), it is claimed to accommodate teachers' problem-solving and aspirations that impact improving their performance (Mutohar and Trisnantari, 2020). Therefore, MS must be pursued based on fairness to all employees so that efforts to improve the quality of education through TP are sustainable (Laghari and Hussain Jafri, 2022). On the other hand, teachers' welfare, which can impact their performance, is also influenced by their suitability for their WC (de Almeida, 2017; Muhamad Nasharudin et al., 2020). The comfort caused by the environment and infrastructure provides a better work experience for teachers and triggers their Mo to improve their performance (Admiraal, 2022). In addition, a basis for the idea that workloads beyond the capacity of teachers lead to a lack of focus on improving the quality of learning (Li et al., 2019).



*H7: Family sociology plays a role in determining teacher performance.*

*H8: Managerial support plays a role in determining teacher performance.*

*H9: Work conditions play a role in determining teacher performance.*

*H10: Motivation plays a role in determining teacher performance.*

*H11: Professional development plays a role in determining teacher performance.*

*H14: Managerial support plays a role in determining teacher performance mediated by motivation.*

*H15: Managerial support plays a role in determining teacher performance mediated by professional development.*

*H16: Working conditions play a role in determining teacher performance mediated by motivation.*

*H17: Working conditions play a role in determining teacher performance mediated by professional development. Professional development.*

### 2.3 The mediating roles of motivation and professional development

The process of TP growth must be understood as the construction of a series of factors that occur systematically. In essence, the level of Mo and the intensity of PD are the main reasons why TP can be determined to what extent it is constructed (Hosen et al., 2021; Isa and Indrayati, 2023; Zeng, 2023). Notably, the main factor determining learning success requires encouragement and continuous competency development efforts (Sopiah and Narmaditya, 2021). Mo is a psychological condition that tends to work optimally according to ability (Widodo et al., 2020), while PD is a form of effort to deepen and develop knowledge in their fields (De Naeghel et al., 2016). Therefore, simply put, these two factors become the foundation that continues to be strived for optimally, so that often research places it as a middle variable that can bridge the constructor variable and the constructed variable (Li et al., 2015; Liu et al., 2019). First, FS, which in theory has a direct relationship with Mo and PD, is also directly related to TP (Yu et al., 2021). Meanwhile, research assured that Mo, which grows due to positive psychological capital from the family, becomes a significant part of the influence in building TP (Pekrun, 2021). Conversely, a decreased psychological condition due to family disharmony can be the reason for teachers' low intention to develop their capacity (Zainal Badri and Yunus, 2022). This also applies to MS, which indirectly affects teachers' Mo in continuously developing their professionalism so that performance increases. In this case, support from structural officials within the school, which includes the management of human resources, infrastructure, and educational methods, can increase teacher satisfaction and increase their Mo to carry out PD, which ends in improving their performance (De Naeghel et al., 2016; Nurtanto et al., 2022b; Rahman et al., 2022). Finally, essential indicators of job suitability experienced by teachers that can make Mo dependent on it (Li et al., 2019). A comfortable environment, ideal workload, and positive interactivity between school members all support the formation of Mo in teachers and increase their intensity to conduct PD to strengthen their performance (de Almeida, 2017; Muhamad Nasharudin et al., 2020).

*H12: Family sociology plays a role in determining teacher performance mediated by motivation.*

*H13: Family sociology plays a role in determining teacher performance mediated by professional Development.*

### 3 Research method

Our research focuses on data in the form of phenomena or circumstances that have already occurred and are relevant to the theories built as an introduction to the hypothesis. With these considerations, we adopted the ex-post facto research method, the design of which was developed to examine events that have already occurred (Cohen et al., 2011). This study is a cross-sectional study where data is collected through a questionnaire designed with structured questions. According to the conceptual framework and existing theoretical studies, direct and mediating effects are measured based on actual data in the field. The analyzed data shed light on the role of family sociology (FS), managerial support (MS), working conditions (WC), motivation (Mo), and professional development (PD) in determining teacher performance (TP). The mediating roles of Mo and PD were also tested to gain insight into the complex influences. We ensured the directionality of the study in line with the importance of improving Mo and PD through improving social and psychological conditions to determine TP. The collected data were systematically analyzed through 500 iterations to approach accurate figures.

The research participants were selected by considering specific criteria to obtain maximum data. The level of teaching experience duration of at least 3 years in teachers was the main criterion we applied in determining participants. We also only included teachers who were married (having a husband or wife and children) to increase the rationality of the FS data. This criterion is essential because family sociology (FS) significantly impacts teacher performance. Research indicates that the quality of relationships within a family can influence teachers' psychological wellbeing and, consequently, their job performance (Hill and Tyson, 2009; Hooper and Gaviria-Loaiza, 2021). Teachers with stable family lives may experience better psychological support, which positively affects their motivation and professional development (Demir, 2019; Pan et al., 2022).

The sample was described separately based on urban and rural areas. This distinction is crucial because urban and rural teachers often face different challenges and have varying levels of access to resources, which can influence their performance. Research has shown that there are significant differences in teacher competencies between urban and rural areas (Daga et al., 2023). For example, teachers in urban areas tend to have higher self-efficacy levels compared to those in rural areas (Erdemir, 2011). Additionally, the

leadership style within schools can impact teacher performance differently in urban and rural settings (Raupu et al., 2021). Urban teachers may benefit from more innovative leadership styles, which can enhance their performance, while rural teachers might face more traditional leadership approaches (Suhartini et al., 2019).

A simple random sampling probabilistic calculation obtained the number of participants ( $N=474$  teachers) from 42 SE in Indonesia, including private and public schools. Table 1 reports the demographic statistics of the participants involved in this study.

We collected data from the teacher community in secondary education (Musyawarah Guru Subject) in one of the large provinces in Indonesia, West Kalimantan, toward the end of 2023. This study focuses on one province to look at performance problems in depth due to the issue of differences in quality based on the area in Indonesia. This focus allows for specific and measurable recommendations to improve teacher quality in the future. The data in this research was collected using a questionnaire technique via Google Forms and carried out from the end of August to the end of October 2023 online with the aim of making it easier to collect data. Considering the large number of respondents who filled out the questionnaire and to maintain the validity and credibility of the data, data selection was carried out using the same data method (entered twice) and deletion was carried out, respondents outside West Kalimantan province were ignored, teachers outside secondary education were excluded and teacher experience was considered, namely in under 3 years old are excluded. In addition, to maintain data quality, teachers with certification status are prioritized because of their proven experience. Finally, 37 respondents were excluded.

The questionnaire used consisted of 4 (four) Likert scales, with answer choices Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD). Instrument development was carried out by adapting expert opinions according to the context of each variable. This is used as a reference for arranging indicators and items in the instrument, as presented in a grid (See Figure 2). The instrument was completed with the respondents' identity, which includes essential dimensions related to the choice of name, gender, educational level of the institution where they work, employment status, duration of teaching experience taken, and the domicile where they live (Table 2).

The research hypothesis is formulated based on relevant theoretical support related to the line of influence of exogenous variables on endogenous variables directly or by using mediation, as stated in the previous literature review. Structural equation modeling (SEM) analysis was used to test the hypothesis of direct influence between variables and the role of mediation through path analysis and

bootstrap methods. SEM analysis was considered because ex-post facto research involves complex patterns and interactions between variables that must be explored comprehensively. SEM analysis can test complex relationships between several variables simultaneously (Fornell and Larcker, 1981). Path analysis measures the direct role of FS, MS, WC, Mo, and PD in determining TP in primary and secondary education. Furthermore, the bootstrap method was used to measure the extent of the role of Mo and PD in mediating the role of FS, MS, and WC in determining TP. Bootstrap was adopted for accuracy, as it is the most reasonable method and can obtain confidence limits for specific indirect effects under most conditions (Preacher and Hayes, 2008). The statistical analysis in this study used SmartPLS 4.0 support software with varying iterations to obtain the most accurate analysis position.

## 4 Results

### 4.1 Validities and reliabilities instrument

Before testing the SEM model, we analyzed the outer loading value which explains the validity level of the items, and the  $\alpha$  and AVE values, which explain the reliability level of the measuring instrument. We measured the validity level using the CFA method and the reliability level using Cronbach Alpha with the help of the SmartPLS 3.0 application. The validity test results show that all indicators on all research variables have an outer loading value exceeding 0.700, so none of the indicators of all variables are invalid. By the theory of partial least square, this value is above the safe threshold for the appropriate level of validity so that all items have met the validity criteria and are ready to be used for research (Johnson and Wichern, 2007). Likewise, the reliability test results show that the  $\alpha$ -value is in the high range for the reliability value (Reid, 2014). Table 3 presents more detailed validity and reliability test results.

### 4.2 Model fit evaluation results

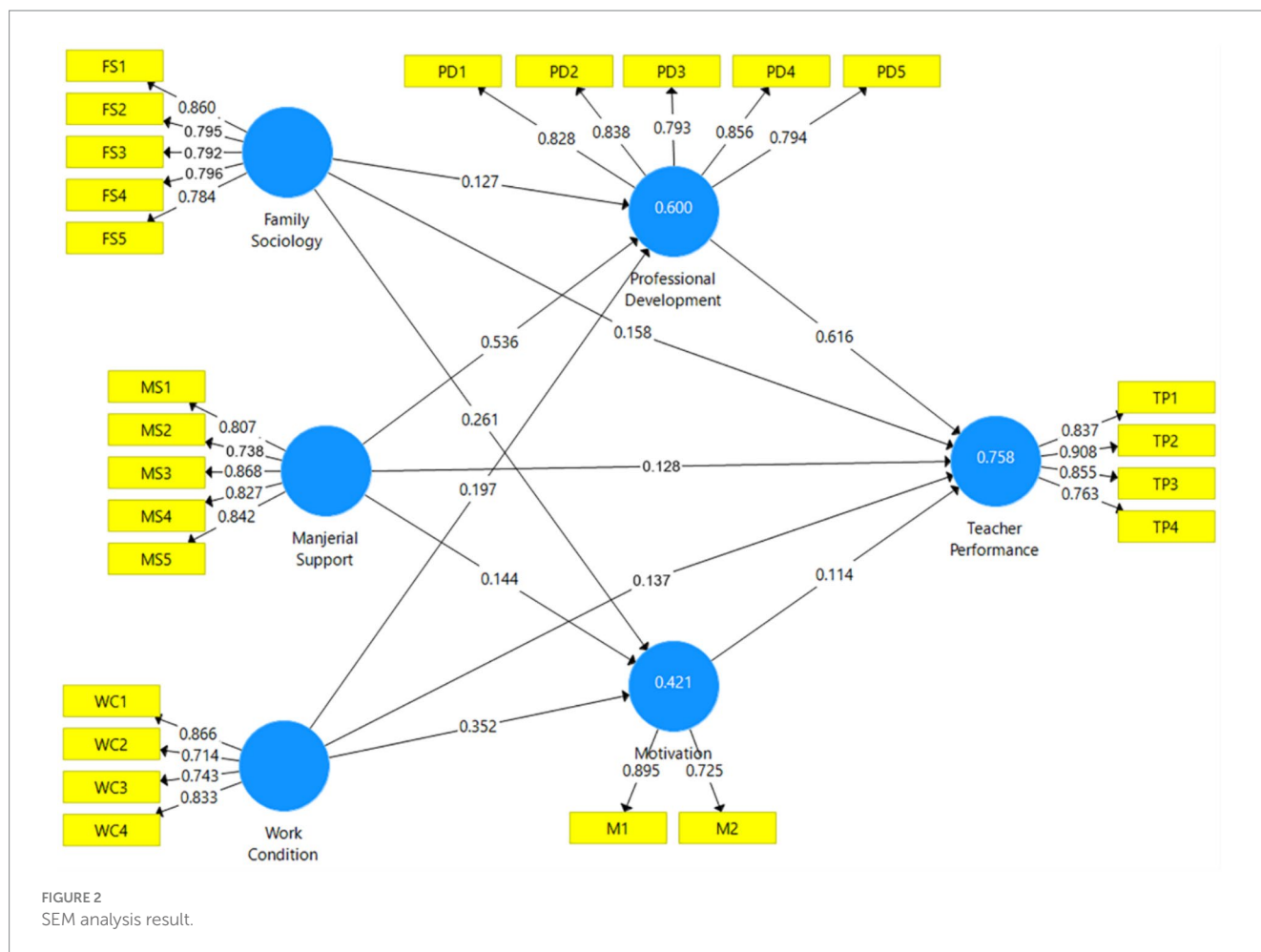
We evaluated the model fit to measure the degree of fit and determine changes to the structural model designed based on the theoretical framework. The overall fit indices of the research model (as the main model) are presented in Table 4. As presented, all the fit indices of the overall primary model obtained good test results. The chi-squared values obtained show relatively small critical figures. The evaluated probability values are significant at a high level ( $>0.050$ ). GFI, AGFI, CFI, and NFI were well-tested, showing values above the threshold ( $\geq 0.90$ ). Likewise, SRMR  $< 0.05$  and RMSEA  $< 0.08$ . Based on these results, it can be concluded that the fit model is based on the acquisition of values included in the goodness of fit category so that structural model analysis can be carried out (Johnson and Wichern, 2007). The structural analysis model used is presented in Figure 2.

### 4.3 Direct role test results

The direct role shows the significance level of the influence of all exogenous variables on endogenous variables without the

TABLE 1 Participant demographic statistic.

| Aspect              | Dimension         | Urban (%)   | Rural (%)   |
|---------------------|-------------------|-------------|-------------|
| Gender              | Male              | 53 (11.18)  | 44 (9.28)   |
|                     | Female            | 207 (46.47) | 170 (35.86) |
| Teaching experience | 3–6 years         | 23 (4.85)   | 44 (9.28)   |
|                     | 7–10 years        | 173 (36.50) | 22 (4.64)   |
|                     | >10 years         | 64 (13.50)  | 148 (31.22) |
| Employment status   | Civil servants    | 212 (44.73) | 23 (4.85)   |
|                     | Certified teacher | 21 (4.43)   | 26 (5.49)   |
|                     | Permanent teacher | 27 (5.70)   | 165 (34.81) |



intervention of other intervening variables (Table 5). Although in path analysis theory, there are two main influences, namely direct influence and indirect influence through the intervention of intervening variables, we present this part in another section. In this case, we test the hypothesis systematically based on the theoretical framework that has been built previously. Hypothesis testing that states the results of the role or direct effect is seen based on the results of path analysis, which is based on the estimated correlation value, t-statistic, and *p*-value with a significance level of 5%. Hypothesis testing measures explicitly the direct effect of FS, MS, and WC on Mo and PD and the direct effect of FS, MS, WC, Mo, and PD on TP. The tests were conducted using the total sample of secondary education (SE) volunteer teachers as research participants. Table 6 below presents the results of hypothesis testing using path analysis with the full sample from SEs. Overall, the results of the path analysis state that all hypotheses proposed based on the theoretical framework are accepted. This result was identified based on the *p*-values of all paths obtained being more petite than 0.050 ( $p < 0.050$ ) at the 5% significance level. First, these results confirm that FS, MS, and WC have significantly contributed to building Mo and improving PD in general. In addition, whether or not teachers' Mo and PD grow is a consequence of their high or low FS, MS, and WC. Furthermore, FS, MS, WC, Mo, and PD were also shown to play a significant role in determining TP, so they are all essential in contributing to the TP levels of PE and SE teachers. Although all have significant roles, the

correlation estimates show differences in the level of role of each exogenous variable on the endogenous. Furthermore, the results also show a trend toward two different significance levels (\*\*= 1% significance level or  $p < 0.010$  and \*=5% significance level or  $p < 0.050$ ).

#### 4.4 The mediating role of motivation and professional development

The primary role of this study is to examine the extent of the role of Mo and PD as mediators for FS, MS, and WC in helping to determine CC. In this case, the test is conducted using the bootstrap method to test and analyze the significance of the role. Bootstrap was used since previous research proved that Bootstrap is the most robust and reasonable method to obtain confidence limits for certain specific indirect effects in most conditions. Mo and PD have equal roles in mediating the indirect effects of FS, MS, and WC in determining TP. Tables 6, 7 show the extent of the mediating role of Mo and PD in this regard. The results also show their trend toward two different significance levels (\*\*1% significance level or  $p < 0.010$  and \*5% significance level or  $p < 0.050$ ). First, overall, Mo can demonstrate its central role in mediating FS, MS, and WC in influencing TP (indirect effect), as evidenced by significance values below the 5% error level ( $p < 0.050$ ) for all three (see Table 6). This result confirms that the three

TABLE 2 Instrument grid.

| Variables                | Indicators  | Example items   | References   |
|--------------------------|---|---|--|
| Teacher performance      | Cognitive activation                                    | I do learn as a task to deepen my knowledge   | (Pramono et al., 2022; Kholifah et al., 2023; Kumari and Kumar, 2023)    |
|                          | Classroom management and clarity of teaching            | I can design learning according to needs  |  |
|                          | Support for students                                    | My teaching strategy is oriented towards developing students' interests and talents                   |  |
|                          | Adaptation skills                                       | I can adapt to develop teaching strategies oriented to 21st century skills                            |  |
| Motivation               | Intrinsic motivation                                    | I carry out tasks with clear plans and goals  | (Liu and Zainuddin, 2021; Khun-Inkeeree et al., 2022)                    |
|                          | Extrinsic motivation                                    | I work as a teacher aiming for career development   |  |
| Professional development | Engagement in active learning                           | I am actively involved in professional development activities every school year                       | (De Naeghel et al., 2016; Ismail et al., 2021; Ithnain and Saidin, 2021) |
|                          | Focus on content development and participant analysis   | I conduct an analysis of how students can capture lessons   |  |
|                          | Coherence with teacher needs and circumstances          | The self-development that is followed is in accordance with the learning needs that I teach           |  |
|                          | Collective participation                                | I collaborate with colleagues to design lessons   |  |
|                          | Duration  | I have time to practice new skills in the classroom in between professional development               |  |
| Family sociology         | Individual relationships and interactions with families | My family and I have a positive relationship in building a household                                  | (Sarwar and Panatik, 2020; Castrén et al., 2021)                         |
|                          | Family division of labor system                         | My partner and I have a general division of household labor according to gender                       |  |
|                          | Family diversity  | My family and I have diverse characters   |  |
|                          | Influence of the family's external environment          | The external environment has an influence on family life patterns                                     |  |
|                          | Family support for work                                 | My family motivates me to do my work  |  |
| Managerial support       | Human resources (man)                                   | My boss supports me in career development   | (Rahim et al., 2020; Hamzah et al., 2021)                                |
|                          | Financial (money)                                       | The school provides good financial support in achieving the goals of teaching and learning activities |  |
|                          | Material (materials)                                    | The school provides good support for the availability of materials needed for teaching                |  |
|                          | Technology/Equipment (Machine)                          | Schools provide the technology needed by teachers to teach  |  |
|                          | Method  | The school carries out management effectively to achieve its vision, mission and goals                |  |
| Work condition           | Work environment  | I work in a comfortable, conducive work environment   | (Li et al., 2019; Admiraal, 2022)  |
|                          | Workload  | I carry out my work as a teacher in accordance with my main duties and responsibilities               |  |
|                          | Feedback  | I get paid according to the workload carried out  |  |
|                          | Work relationship                                       | Working relationships between employees occur well  |  |

hypotheses indicating the mediating role of Mo (H12, H14, and H16) are accepted. Furthermore, PD is also able to demonstrate its central role in mediating FS, MS, and WC in influencing TP, as evidenced by significance values below the 5% ( $p < 0.050$ ) and 1% ( $p < 0.010$ ) error

levels (see Table 7). PD's mediation of FS and WC is significant at the 5% level, while its role in mediating MS is significant at the 1% level. These results confirm that the three hypotheses indicating the mediating role of PD (H13, H15, and H17) are accepted.



TABLE 3 Validities and reliabilities instruments.

| Variables                | Reliability |       |                  | Validity |               |          |
|--------------------------|-------------|-------|------------------|----------|---------------|----------|
|                          | $\alpha$    | AVE   | Decision         | Item     | Outer loading | Decision |
| Teacher performance      | 0.862       | 0.709 | High reliability | TP 1     | 0.837         | Valid    |
|                          |             |       |                  | TP 2     | 0.908         | Valid    |
|                          |             |       |                  | TP 3     | 0.855         | Valid    |
|                          |             |       |                  | TP 4     | 0.763         | Valid    |
| Motivation               | 0.809       | 0.663 | High reliability | Mo 1     | 0.895         | Valid    |
|                          |             |       |                  | Mo 2     | 0.725         | Valid    |
| Professional development | 0.880       | 0.676 | High reliability | PD 1     | 0.828         | Valid    |
|                          |             |       |                  | PD 2     | 0.838         | Valid    |
|                          |             |       |                  | PD 3     | 0.793         | Valid    |
|                          |             |       |                  | PD 4     | 0.856         | Valid    |
|                          |             |       |                  | PD 5     | 0.794         | Valid    |
| Family sociology         | 0.857       | 0.633 | High reliability | FS 1     | 0.860         | Valid    |
|                          |             |       |                  | FS 2     | 0.795         | Valid    |
|                          |             |       |                  | FS 3     | 0.792         | Valid    |
|                          |             |       |                  | FS 4     | 0.796         | Valid    |
|                          |             |       |                  | FS 5     | 0.784         | Valid    |
| Managerial support       | 0.858       | 0.641 | High reliability | MS 1     | 0.807         | Valid    |
|                          |             |       |                  | MS 2     | 0.738         | Valid    |
|                          |             |       |                  | MS 3     | 0.868         | Valid    |
|                          |             |       |                  | MS 4     | 0.827         | Valid    |
|                          |             |       |                  | MS 5     | 0.842         | Valid    |
| Work condition           | 0.799       | 0.626 | High reliability | WC 1     | 0.866         | Valid    |
|                          |             |       |                  | WC 2     | 0.714         | Valid    |
|                          |             |       |                  | WC 3     | 0.743         | Valid    |
|                          |             |       |                  | WC 4     | 0.833         | Valid    |

TABLE 4 Model fit evaluation result.

| Goodness of fit indices | Estimated | Desired level        | Evaluation |
|-------------------------|-----------|----------------------|------------|
| Chi-square              | 21.092    | Expected to be small | Small      |
| Probability             | 0.362     | >0.050               | Good/fit   |
| GFI                     | 0.903     | ≥0.900               | Good/fit   |
| AGFI                    | 0.924     | ≥0.900               | Good/fit   |
| CFI                     | 0.911     | ≥0.900               | Good/fit   |
| NFI                     | 0.909     | ≥0.900               | Good/fit   |
| SRMR                    | 0.031     | <0.050               | Good/fit   |

## 5 Discussion

### 5.1 The role of family sociology, managerial support, and working conditions on motivation and professional development

The research results show that family sociology plays a role in determining teacher motivation and professional development. As discussed in various literatures, social conditions in family life are

critical in determining an individual's psychological condition in improving performance (Han and Yin, 2016; Sinniah et al., 2022; Kumari and Kumar, 2023). Previous research shows that social conditions in family life are crucial in determining an individual's psychological condition, which ultimately influences their performance (Wang et al., 2021). Positive relationships within the family and strong emotional support increase motivation and drive for professional development (Zhang et al., 2021; Kholifah et al., 2023). On the other hand, disharmony in the family can cause a

TABLE 5 Path analysis result.

| Path   | Estimated correlation | t-value | SE    | p       |
|--|-----------------------|---------|-------|---------|
| Family sociology → motivation                  | 0.261                 | 4.968   | 0.002 | 0.000** |
| Family sociology → professional development    | 0.127                 | 2.643   | 0.002 | 0.000*  |
| Managerial support → motivation                | 0.144                 | 2.151   | 0.004 | 0.000*  |
| Managerial support → professional development  | 0.536                 | 8.278   | 0.001 | 0.000** |
| Work condition → motivation                    | 0.352                 | 5.234   | 0.002 | 0.000** |
| Work condition → professional development      | 0.197                 | 3.117   | 0.002 | 0.000*  |
| Family sociology → teacher performance         | 0.158                 | 4.658   | 0.006 | 0.000*  |
| Managerial support → teacher performance       | 0.128                 | 2.862   | 0.002 | 0.000*  |
| Work condition → teacher performance           | 0.137                 | 2.943   | 0.005 | 0.000*  |
| Motivation → teacher performance               | 0.114                 | 2.992   | 0.001 | 0.002*  |
| Professional development → teacher performance | 0.616                 | 12.434  | 0.002 | 0.000** |

The level of significance \* $p < 0.05$  and \*\* $p < 0.01$ .

TABLE 6 The mediating role of motivation.

| Path    | Direct Effect |         | Indirect Effect |        | Total Effect |         |
|---------|---------------|---------|-----------------|--------|--------------|---------|
|         | Estimated     | p       | Estimated       | p      | Estimated    | p       |
| Mo → TP | 0.114         | 0.002*  | -               | -      | 0.114        | 0.002*  |
| FS → Mo | 0.261         | 0.000** | -               | -      | 0.261        | 0.000** |
| FS → TP | 0.158         | 0.000*  | 0.030           | 0.010* | 0.188        | 0.000*  |
| MS → Mo | 0.144         | 0.000*  | -               | -      | 0.144        | 0.000*  |
| MS → TP | 0.128         | 0.000*  | 0.026           | 0.022* | 0.154        | 0.000*  |
| WC → Mo | 0.352         | 0.000** | -               | -      | 0.352        | 0.000** |
| WC → TP | 0.137         | 0.000*  | 0.042           | 0.007* | 0.179        | 0.000*  |

The level of significance \* $p < 0.05$  and \*\* $p < 0.01$ .

TABLE 7 The mediating role of professional development.

| Path    | Direct effect |         | Indirect effect |         | Total effect |         |
|---------|---------------|---------|-----------------|---------|--------------|---------|
|         | Estimated     | p       | Estimated       | p       | Estimated    | p       |
| PD → TP | 0.616         | 0.000** | -               | -       | 0.616        | 0.000** |
| FS → PD | 0.127         | 0.000*  | -               | -       | 0.127        | 0.000*  |
| FS → TP | 0.158         | 0.000*  | 0.078           | 0.009*  | 0.136        | 0.000** |
| MS → PD | 0.536         | 0.000** | -               | -       | 0.536        | 0.000** |
| MS → TP | 0.128         | 0.000*  | 0.331           | 0.000** | 0.459        | 0.000** |
| WC → PD | 0.197         | 0.000*  | -               | -       | 0.197        | 0.000*  |
| WC → TP | 0.137         | 0.000*  | 0.121           | 0.003*  | 0.258        | 0.000** |

The level of significance \* $p < 0.05$  and \*\* $p < 0.01$ .

decrease in motivation and desire to develop competence. However, several previous studies warn that the influence of family support on teacher motivation and performance can vary depending on the social and cultural context of each environment or region (Castrén et al., 2021; Pekrun, 2021). These findings expand current knowledge by highlighting the significant impact of family dynamics on teachers' professional lives, a factor often overlooked in educational research.

Likewise, managerial support played a significant role in determining teacher motivation and professional development. This

support includes fair policies providing human, financial, material, technological, and methodological resources that support teachers in their duties. These findings reiterate the importance of managerial policies that support teacher welfare to boost their motivation and professional development. Organizational unsupportive or unfair policies can reduce teacher loyalty and perspective toward educational institutions, thereby reducing motivation and desire to develop themselves professionally (Zhang et al., 2021). On the other hand, fair and supportive policies give teachers a feeling of being valued and

increase their motivation to continue to develop themselves and improve the quality of education. However, several other studies note that good managerial support does not always guarantee increased teacher motivation and performance if other factors, such as adequate compensation and recognition of achievements, are not considered (Desimone, 2009; Prikshat et al., 2019). These insights underline the complexity of managerial influence and suggest that comprehensive support systems are necessary to fully enhance teacher motivation and development.

Working conditions, including the work environment, workload, feedback, and work relationships, also significantly determine teacher motivation and professional development. A comfortable working environment, a workload appropriate to capacity, and good working relationships between fellow school members all increase teacher motivation and professional development (Nurtanto et al., 2021). Working conditions that are not ideal can cause a decrease in enthusiasm and encouragement for teaching, as well as hamper efforts to develop competencies on an ongoing basis. Previous studies agree that a comfortable working environment and workload appropriate to teachers' capacity contribute to increasing their motivation and performance (Alonso-Secades et al., 2022). However, it should be noted that ideal working conditions can vary depending on individual preferences and work context. Some teachers may focus more on financial compensation than a comfortable work environment (Mutohhari et al., 2021). These findings provide practical implications for educational policy, emphasizing the need for tailored approaches to improve teacher working conditions based on individual and contextual factors.

The working conditions, encompassing the work environment, workload, feedback, and work relationships, play a crucial role in determining teacher motivation and professional development. A comfortable work environment, an appropriate workload aligned with capacity, and positive working relationships among colleagues contribute to enhancing teacher motivation and fostering professional growth (McKenzie et al., 2021). Conversely, suboptimal working conditions can lead to a decrease in enthusiasm for teaching and hinder ongoing competency development. Studies have consistently highlighted the positive impact of a comfortable work environment and a workload tailored to teachers' capacities on increasing motivation and performance (Wang Y. et al., 2023). It is essential to recognize that ideal working conditions may vary based on individual preferences and the specific work context. While some teachers may prioritize financial compensation over a comfortable work environment (Hill and Tyson, 2009), it is crucial to consider the multifaceted nature of teacher motivation and performance. Moreover, it is noted that good managerial support alone may not guarantee increased teacher motivation and performance if other factors like adequate compensation and recognition of achievements are not taken into account.

## 5.2 The role of family sociology, managerial support, working conditions, motivation, and professional development on teacher performance

Variations in sociological family conditions, managerial support, and working conditions experienced by teachers influence their

motivation and professional development. This research found that motivation and professional development are the main reasons teacher performance can be optimized. Teacher performance is built through the construct of motivation and intensity of professional development, which is carried out through strengthening family sociological conditions, managerial support, and working conditions. This study confirms that positive family sociology determines increased teacher performance. On the other hand, disharmony in the family, which causes adverse psychological conditions, can suppress teachers' teaching focus and reduce their performance. Good managerial support also positively influences teacher performance by increasing enthusiasm and motivation to continue improving performance. Comfortable and ideal working conditions also provide teachers with a better work experience, increasing their motivation and performance.

The results of this research are in line with previous findings which state that motivation and professional development are key factors in improving teacher performance. For example, some studies have indicated that high professional development efforts for teachers were caused by high motivation (Pelletier et al., 2002; Bakker and Bal, 2010; Maliki et al., 2021; Reimers, 2022). Others also highlight that teacher motivation is the main driver for realizing learning goals through various specific efforts (Toropova et al., 2021; Astuti et al., 2022; Wang C. et al., 2023). However, these findings also show that family sociology, managerial support, working conditions, motivation, and professional development are significant factors in determining teacher performance, which have not been widely discussed in previous research. This study adds a new perspective on the importance of family social conditions and managerial support in building teacher motivation and professional development, thus expanding the current understanding in this field.

## 5.3 The mediating role of motivation and professional development

This research reveals that motivation and professional development significantly mediate the relationship between family sociology, managerial support, and working conditions on teacher performance. These findings indicate that motivation and professional development directly influence teacher performance and strengthen the influence of other factors such as family support, managerial support, and working conditions. High teacher motivation facilitates engagement in more intensive professional development, improving their performance in teaching and managing the classroom (Meifert, 2013; Prasetyono et al., 2018; Alonso-Secades et al., 2022). This finding is supported by previous research, which shows that motivation encourages teachers to continue developing their competencies through training and professional development (De Naeghel et al., 2016; Kyndt et al., 2016).

Some literature has long highlighted that motivation functions as an internal drive that makes teachers enthusiastic to continue learning and adapt to changes in the world of education (De Naeghel et al., 2016; Han and Yin, 2016). Professional development, on the other hand, provides tools and opportunities for teachers to increase their knowledge and skills. Combining these two factors creates a conducive environment for improving teacher performance (Wardoyo et al., 2017; Spittle et al., 2022). However, other research further highlights

that although intrinsic motivation is essential, without adequate external support, such as supportive school policies and financial rewards, teachers can experience burnout (Liu et al., 2021; Tanjung and Kurniawan, 2024). Therefore, educational institutions need to ensure that teachers are intrinsically motivated and get the support they need to thrive.

This study underlines the critical role of motivation and professional development as mediators in improving teacher performance, aligning with previous research emphasizing the importance of continuous professional development (Osman and Warner, 2020; Bamrungsin and Khampirat, 2022). However, there is also an argument that too much focus on professional development activities can disrupt teaching time and lead to teacher burnout (Kholifah et al., 2021). Therefore, it is essential to balance professional development and daily teaching duties. Secondary education institutions should develop well-structured professional development programs and provide adequate managerial support to keep teacher motivation high. Future researchers are advised to explore further how the interaction between motivation, professional development, and other external factors can be optimized to improve teacher performance holistically. Integrating psychological and managerial approaches in teacher development strategies can provide more comprehensive and sustainable results.

## 6 Conclusion

This research underscores the critical role of motivation and professional development in enhancing teacher performance in secondary education. The study reveals that these factors not only directly impact performance but also mediate the effects of family support, managerial practices, and working conditions. Strong family support, effective management, and conducive work environments boost motivation and professional growth, leading to better performance. These findings highlight the need for integrated strategies that address both intrinsic and extrinsic motivational factors, ensuring continuous professional development and supportive managerial practices. Implementing such comprehensive approaches can significantly improve teacher performance and educational outcomes in Indonesia.

### 6.1 Implications of findings

This research confirms that motivation and professional development are critical factors in teacher performance. Motivation is an internal driver that makes teachers enthusiastic to continue learning and adapting to changes in the world of education. Professional development, on the other hand, provides tools and opportunities for teachers to increase their knowledge and skills. Combining these two factors creates a conducive environment for improving teacher performance. Apart from that, these findings also show that social support from the family plays a vital role in determining teacher performance. Cheerful family social conditions can increase teacher motivation and encouragement to develop themselves professionally, while disharmony in the family can reduce motivation and desire to create. Good managerial support,

including fair policies and providing necessary resources, has also increased teacher motivation and professional development. Overall, this research contributes to understanding the role of motivation and professional development in improving teacher performance. Hopefully, these findings can become a basis for policymakers and educational practitioners to design more effective programs and policies to improve the quality of education at the secondary level.

### 6.2 Research limitations

Although this study provides valuable insights, several limitations need to be noted. First, it uses an ex-post facto approach and cross-sectional data, so it cannot definitively determine the cause-and-effect relationship between the variables studied. Second, it only included teachers with at least 3 years of experience and who were married, which may not reflect the broader teacher population. Third, this research was conducted in Indonesia, so the results may not be generalizable to different cultural contexts and education systems. Additionally, the sample size of this study was relatively small, which may limit the robustness of the findings. Larger sample sizes in future studies could help to validate the results and provide a more comprehensive understanding of the phenomena under investigation. Furthermore, the geographic limitations of this study, focusing solely on certain regions of Indonesia, suggest that future research should include a more diverse set of locations to enhance the generalizability of the findings. Given these limitations, future research should consider longitudinal studies to better establish causal relationships between family sociology, managerial support, working conditions, motivation, and professional development. Researchers are also encouraged to include a more varied demographic of teachers, such as those with different levels of experience and marital status, to capture a broader perspective. Expanding the study to different countries with varying cultural and educational contexts could provide comparative insights and further validate the findings.

### 6.3 Recommendations for future research

This research provides clear recommendations to future researchers to conduct longitudinal studies to understand better the relationship dynamics between motivation, professional development, and teacher performance over time. Research also needs to involve more diverse samples to increase the generalizability of findings. In addition, future research can explore more deeply how the interaction between motivation, professional development, and other external factors can be optimized to improve teacher performance holistically. Integrating psychological and managerial approaches in teacher development strategies can provide more comprehensive and sustainable results. A multidisciplinary approach involving aspects of psychology, management, and education needs to be considered to understand the factors that influence teacher performance in more depth. Research must also consider differences in social and cultural contexts when applying these findings across educational systems. In this way, the strategies developed can be more



effective and appropriate to the specific needs of various educational contexts.

## Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

## Ethics statement

Written informed consent was obtained from the individual(s) for the publication of any potentially identifiable images or data included in this article.

## Author contributions

MU: Conceptualization, Data curation, Visualization, Resources, Writing – review & editing. HS: Investigation, Methodology, Validation, Writing – review & editing. MT: Project administration, Supervision, Validation, Writing – review & editing. SW: Data curation, Formal analysis, Project administration, Software, Writing

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