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The impact of teacher empowerment on school effectiveness: A mixed-methods study

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Abstract

This study aims to explore the impact of empowerment on school effectiveness and examine more broadly the findings of early research. This mixed study used an exploratory sequential design. The initial stage of research uses qualitative methods followed by the quantitative stage. In the qualitative stage, research data were collected through in-depth interviews with 19 teachers determined by purposive sampling. The research findings at the qualitative stage were then followed up for wider testing using a larger population and sample. A total of 104 teachers were determined as research samples using proportional random sampling techniques from a population of 712 teachers in 39 high schools in North Sumatra Province, Indonesia. Qualitative findings provide evidence that psychological and structural empowerment have the same qualities as employment involvement and that empowering working conditions affects the attitude of teachers that their work is important. They can do work and set choices; have an impact on their departments and tend to show autonomy that generates more energy and ability in their work. Quantitative findings explain that structural empowerment influences psychological empowerment at 45.6% and has influence on school effectiveness at 43.9%. Psychological empowerment has influence on school effectiveness at 64.3%. Structural empowerment has influenced school effectiveness through psychological empowerment of 48.2% and a total influence of 92.10%. Qualitative findings suggest that the strength of structural and psychological empowerment determines school effectiveness.

Keywords: Psychological empowerment, School effectiveness, Structural empowerment.

Contents

Contribution of this paper to the literature
This research contributes to the existing literature by identifying and examining the relationship patterns of structural empowerment and psychological empowerment and their impact on school effectiveness through a mixed-methods study.

1. Introduction

The education system is composed of many interconnected components including teachers, students, learning, curriculum, facilities and infrastructure. All of these components need to be properly managed and empowered to efficiently accomplish educational goals. A school that is able to achieve its goals is considered a successful school or an effective school. The impact of these schools is not only on student learning outcomes but can also include processes that ensure all students can learn and achieve. Effective schools organize and use their resources so that every student may study and understand the curriculum (Holt & Murphy, 2006). When the main tasks are carried out and every member actively participates in accomplishing school objectives, the school is regarded as effective (Laila, 2015). An effective school fulfils its mission of enabling all students to learn while exhibiting equity in the quality of students (Devis, Peterson, Sibley, & Rosenthal, 2015). Schools must be effective in terms of high expectations, strong instructional leadership, a clear and focused mission (Lezotte, 2011), opportunities for learning and time on task, frequent monitoring and assessment of students, a safe and orderly school environment and positive school-parent relationships (Lezotte & Snyder, 2011).

Realizing school effectiveness requires empowering teachers in schools. Empowerment is a process of creating independence and participatory management where power and trust in subordinates must be spread and increased so that subordinates have a high awareness of their responsibilities and duties (Lee & Nie, 2017). Teachers are more professional when they are more useful and empowered in carrying out their profession. Empowerment will lead to an increase in teachers' authority in problem-solving, decision-making and high responsibility for the school (Desimone & Garet, 2015). Davis and Wilson (2000) argue that teachers' activity and creativity to innovate become greater so that teacher productivity also increases in everything they are able to do. Mulyasa (2009) describes empowerment as an important tool to improve school performance through the distribution of decision-making and responsibility. Teachers are expected to have self-confidence (Mishra, 2019). Although teacher empowerment has been widely recognized for quality improvement and school performance improvement, the reality is that teacher empowerment is still low (Lu, Jiang, Yu, & Li, 2015). Teachers carrying out their duties at school are still strictly controlled by the existence of a system of rules, bureaucratic practices and autocratic leadership (Ahmadi & Arief, 2022; Mishra, 2019).

Teacher empowerment is very important to increase in schools' efforts to improve their educational effectiveness (Balyer, Ozcan, & Yıldız, 2017) because through empowerment, teachers will get new ideas about the teaching and learning process and learn new techniques in teaching (Ahrari, Roslan, Zaremohzzabieh, Mohd Rasdi, & Abu Samah, 2021). Empowered teachers have self-motivating behaviors to improve their services, knowledge, initiative quick problem-solving and teaching quality. Lee and Nie (2017) state that psychological empowerment has a positive effect on job satisfaction, organizational commitment and professional commitment. Empowered teachers will be better able to solve problems, give consideration regarding whether or not the way of teaching is good and then be able to make their own decisions to solve teaching problems faced in the classroom so that their performance is better (Marks & Louis, 1997). According to Chisman and Crandall (2007), empowerment will have a positive impact on the teacher in the classroom. He will apply creative teaching techniques in his classroom. In addition, empowerment will encourage teachers to be motivated to improve their performance through new ideas, job variations and new experiences they get.

The two most popular types of empowerment today are structural empowerment and psychological empowerment. Laschinger, Finegan, Shamian, and Wilk (2004) explain that structural empowerment is an employee's access to social structures in the workplace that enable them to get work done in a meaningful way. According to Avalos (2011) structural empowerment can be realized in the work environment through lines of communication, support, information, and resources. These offer workers the opportunity to share in the decision-making process, assist in controlling resources and develop in their work (Conger & Kanungo, 1988; Laschinger et al., 2004; Mills & Ungson, 2003; O'Brien, 2010). Empowerment is the delegation or sharing of power with subordinates; hence empowerment is also referred to as the concept of autonomy of authority (Conger & Kanungo, 1988).

Empowerment of teachers in schools is necessary considering that the implementation of the tasks carried out by teachers is increasingly difficult and challenging (Lee & Nie, 2014) due to the demands and changes in the curriculum, high levels of student learning achievement and the suitability of graduates to market needs (Gullan, Power, & Leff, 2013). Teacher performance has not been as expected; there are still many teachers who have not been able to carry out their duties properly which has an impact on school effectiveness (Botha, 2010; Singha & Sikdar, 2019). Among the contributing factors is the lack of teacher empowerment (Gülsen & Çelik, 2021; Hamid, Nordin, Adnan, & Sirun, 2013; Holt & Murphy, 2006).

Research on teacher empowerment has recommended that empowerment has a positive impact on schools. Elmazi (2018) suggests that a more varied work role for teachers can lead to greater motivation and productivity. Davis and Wilson (2000) found a positive relationship between empowerment and teacher motivation, job satisfaction and stress and its effects on school effectiveness and concluded from their research that through empowerment, teachers become able to engage, share and influence the school. Improving the quality of education requires the empowerment of teachers (Sahrul, Mawar, Tuti, & Handayani, 2021). The implication is that if the learning process in schools takes place with high teacher performance, the resulting graduates will also be of high quality. Teachers who are actively involved in school programs, focused on the school mission and positive in authority have a very strong influence on student achievement. According to Tutar, Altinoz, and Cakiroglu (2011) empowerment has a positive impact on higher school effectiveness.

The success of the educational process is inseparable from the great role of teachers in achieving educational goals in schools. Therefore, teacher empowerment is very important to study and research in relation to school

effectiveness. In this study, the forms and patterns of structural and psychological empowerment are examined and their impact on school effectiveness. The findings of this study complemented the findings of previous studies that only revealed the contribution of teacher empowerment to student achievement, teacher performance itself and school performance with the use of mixed measurements (objective-subjective). The use of mixed methods can give researchers rich insights into understanding phenomena that cannot be obtained using only one type of measurement (Lisboa & Maldonado, 2019). This research also provides new insights and makes important contributions to the development of theories and models of the relationship between empowerment and school effectiveness. This relationship model explains that structural empowerment has a major influence on school effectiveness both directly and through the role of psychological empowerment. In addition, this research can provide new insights for educational human resource management practices in developing teacher behaviour oriented towards achieving school goals (school effectiveness).

This study was conducted to determine the characteristics of empowerment and the pattern of the relationship between empowerment and school effectiveness and to examine the effect of empowerment on school effectiveness based on the aformentioned description.

The research questions are as follows:
1. What impact does empowerment have on school effectiveness?
2. What is the pattern of the relationship between empowerment variables and school effectiveness?
3. Is there a direct and indirect influence of empowerment on school effectiveness?
4. How much influence does empowerment have on school effectiveness?

2. Literature Review
2.1. Empowerment
Empowerment can be defined as the effort or process of making someone capable, of acting and doing something. Empowerment is an activity to build, develop and increase power through cooperation and joint work. Teacher empowerment is the process of involving teachers in making decisions for common goals and interests so that teachers are able to determine or give consideration to their teaching tasks and teacher acceptance of the decisions that have been made. Teacher empowerment is the process of giving teachers the ability to make judgements about whether or not to teach and to make their own decisions to solve teaching problems faced in the classroom. Menon and Christou (2002) list two important forms of empowerment: structural empowerment and motivational approaches.

Structural empowerment. This empowerment is the granting of decision-making power and authority. According to Whitaker and Moses (1990), power comes from sources such as hierarchical authority, control of resources and centralization of networks. Menon and Christou (2002) state that power is the ability to influence organizational performance. Structural empowerment involves moving decision-making authority down the organizational hierarchy and giving subordinates the ability to influence organizational performance. The goal of structural empowerment focuses on increasing engagement and job satisfaction to improve the quality of production and service outcomes.

Psychological empowerment. One important reason to consider psychological processes is that participation and involvement practices do not necessarily reduce feelings of powerlessness or allow subordinates to feel that their work has meaning and hope. Studies conducted by Conger and Kanungo (1988) and Hıdıroğlu and Tanrıöğen (2020) expalin that psychological empowerment is self-fulfilment which more specifically can be expressed as an increase in intrinsic task motivation manifested in a set of cognitions that reflect an individual's orientation towards their work role manifested in the aspects of: (1) meaning (2) competence (3) self-determination (4) self-efficacy (5) impact.

2.2. School Effectiveness
According to Sahrul et al. (2021) school effectiveness is the implementation of all main tasks and the active involvement of all members in achieving school goals. According to Scheerens (2013) school effectiveness is the performance of the school. It involves all the software characteristics of school functioning. It is the achievement of school goals through the utilisation and empowerment of school resources. According to Ghani, Siraj, Radzi, and Elham (2011) and Ali (2017) the characteristics of an effective school are as follows: (1) Teachers have strong leadership and the principal pays high attention to improving the quality of teaching. (2) Teachers have high expectation for supporting student achievement. (3) The school atmosphere is not rigid, cool without pressure and conducive to the whole teaching process or a comfortable climate. (4) The school uses its energy and resources to accomplish teaching goals and has a thorough understanding of its focus of teaching. (5) The school is effective in ensuring that student progress is monitored regularly. Measure school effectiveness by: (1) Instructional leadership. (2) A clear and focused mission. (3) A safe and orderly school environment. (4) High expectations for success. (5) Student learning opportunities and task time. (6) Continuous monitoring of student progress. (7) Positive school and parent relationships (Lezotte & Snyder, 2011; Lezotte, 2011).

3. Methodology
3.1. Research Design
This research is sequential exploratory mixed research which is conducted with two methods sequentially. Exploratory sequential research is a combination of qualitative methods (QUAL) as the first stage and quantitative methods (QUAN) as the second stage. Each method has an equal and balanced position (Creswell, 2014; Creswell & Clark, 2017). An initial qualitative approach is used to test elements of a theory and continue generalization of the initial findings using a quantitative stage for a larger sample (Archibald, Radil, Zhang, & Hanson, 2015; Creswell, 2014; Tashakkori & Teddlie, 2003). Exploratory sequential aims to develop better measurements with a specific sample and to see if data from a few individuals (the qualitative stage) can be generalized to a larger sample (Creswell & Creswell, 2018).

In this strategy, data is collected and analyzed in two separate stages: qualitative data collection and analysis in the first stage and quantitative data analysis in the second stage. Initial qualitative findings are followed up with the aim of developing new variables, developing instruments and forming categories of information that will be further explored in the quantitative stage with a larger population and sample. The findings of both stages of the research method are interpreted in a sequential discussion, namely the discussion of qualitative results followed by the discussion of quantitative generalization results (see Figure 1). Combining qualitative and quantitative data in the discussion does not aim to compare the two findings but to interpret the preliminary qualitative findings (Creswell & Creswell, 2018; Sharlene, 2010). The main focus of this exploratory design is to test elements of a new theory emerging from the qualitative stage or to generalize qualitative findings to different and larger samples (Tashakkori & Teddlie, 2003).
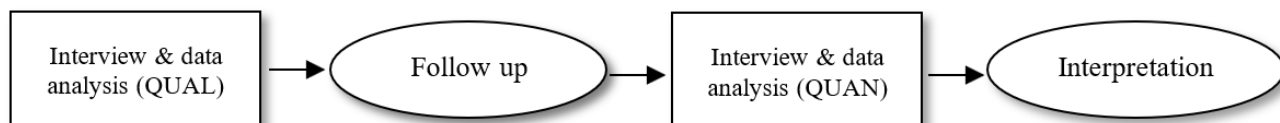

Figure 1. Stages of research implementation.

Note: Creswell (2014), Creswell and Clark (2017) and Creswell and Creswell (2018).

3.2. Population and Sample

Purposive sampling provided the basis for selecting the research sample in this sequential exploratory study's initial qualitative phase. The selected school is a government-owned senior high school. The location of the study was at State Senior High School 01 Medan (SSHS 01 Medan), a school located in the city centre of Medan-North Sumatra Province, Indonesia. A total of 19 teachers (12 female and 7 male) were selected as research participants with the criteria of ≥ 20 years of service. Qualitative research generally uses a small sample size; the number of participants in qualitative research is usually 5 to 10 people or can be increased until there is a repetition of information from participants (Martha & Kresno, 2016; Sun et al., 2020). For example, in certain case studies, one informant can be used. At least determine the number of informants as a benchmark by using the information sufficiency requirement (Mexwell, 2012).

In the quantitative stage, 104 teachers were determined as the research sample by proportional random sampling from a population of 712 teachers in 39 State Senior High Schools (SSHS) in North Sumatra Province-Indonesia. School criteria are "A" or excellent accredited schools. Respondents in the early qualitative stage were not included in the quantitative research sample. Table 1 presents the demographics of the study population and sample.

Table 1. Demographic details of the research population and sample.

School location	Region	Number of schools	Population			Sample		
			Male	Female	N	Male	Female	N
Located in Medan	City	11	74	93	167	7	17	24
Located in Lubuk Pakam	District	4	19	53	72	5	6	11
Located in Perbaungan	District	4	20	47	67	3	6	9
Located in Binjai	City	5	38	65	103	7	8	15
Located in Tebing Tinggi	City	5	40	74	114	6	11	17
Located in Pematang Siantar	City	6	54	67	121	8	10	18
Located in Stabat	District	4	25	43	68	5	5	10
N		39	308	404	712	45	59	104

Other additional information about the research sample is that the average age of the research respondents is 55.7 years old with an average tenure of 24.2 years. The education level of undergraduates was 93 people and masters were 11 people.

3.3. Research Instruments

The data collection instruments or tools used in this research are adjusted to the method implemented. In the qualitative stage, the data collection tool uses open interview techniques. A question guide and interview protocol were prepared in advance. The questions asked were in-depth in relation to feelings of authority, work involvement and decision-making and the impact of their involvement on the school. According to Thomas and Harden (2008) open-ended interviews allow researchers to collect more accurate data because questions are more in-depth, flexible and broad.

In the quantitative stage, research instruments were designed and developed based on the quantitative preliminary findings. These preliminary qualitative findings resulted in a pattern of relationships between three variables that influence and are influenced by each other, namely the variables of structural and psychological empowerment and school effectiveness (see Figure 2). The instrument was designed in the form of a questionnaire using a Likert scale (1, 2, 3, 4 and 5). For structural empowerment variables, there are 5 indicators, psychological empowerment has 5 indicators and school effectiveness has 6 indicators. It was first tested on 32 participants outside the research sample to test the validity and reliability of the instrument before being distributed to the research sample. A total of 49 instrument items were declared valid and 8 instruments were declared invalid from 57 items designed with a reliability level of 0.952.

3.4. Data Analysis

The purpose of data analysis in this study is to process research data to produce valid interpretations. The stages of qualitative data analysis (QUAL) use the stages of (1) data collection through open interviews. (2) Data reduction and categorization through the process of selecting and concentrating data and grouping and interpreting data. (3) Data display, namely presenting data in narratives, charts and tables. (4) Drawing

conclusions, namely presenting various information and explaining the various meanings and relationships of research findings. Quantitative data analysis (QUAN) uses statistical means to test the hypothesis "the relationship or influence of empowerment on school effectiveness". Statistical analysis is used to test the assumptions of data normality, multicollinearity, heterocedacity, ANOVA, t-testing and path analysis.

4. Results

4.1. Qualitative Findings

The results of qualitative research are the results of qualitative data analysis obtained from interviews with 19 teachers related to teacher empowerment in the sub-focus of (1) structural empowerment. (2) Psychological empowerment. (3) Its impact on school effectiveness. The data gathered receives an informant code such as respondent 1 to facilitate data organization (resp 1), respondent 2 (resp 2), respondent 3 (resp 3) and so on. The classified data has been analyzed using the Nvivo 12.0 application. The following are the results of interview findings related to psychological and structural empowerment.

4.1.1. Impact of Empowerment Psychology on School Effectiveness

According to teachers, empowerment can improve and develop a mentality of being able to work and think positively within themselves. This comes from the teachers' self-belief in their ability to work in their jobs. This belief is cultivated through the process of developing teacher competencies, providing continuous encouragement, persuasion and emotional support. The findings of this study are described as follows:

Question: Were you empowered? What behaviors emerged and what impact did they have? What is the most useful aspect of empowerment in relation to school effectiveness?

Some respondents' opinions are given below:

> *Empowerment encourages me to work better, be active and be responsible for my work and the more empowered I am, the more I will exhibit customer-oriented behaviors and achieve school goals (respondent 1).*
> *Empowerment is important to achieve our work goals. It is not just a delegation of tasks. It must involve full authority for us to assume responsibility, make decisions and do more. Its impact is increased job satisfaction, commitment to organizational goals and motivating achievement (respondent 2).*

In addition, respondents viewed empowerment as a situation that gives them power and control resulting in a feeling of being able to do the job and streamline the situation which can increase intrinsic motivation towards their tasks, a psychological state that focuses on how they think and feel about their work, strengthening their sense of responsibility and accountability to improve performance. The impact of empowerment encourages teachers to think about their work and to gain experience. They can inspire colleagues to succeed by creating a sense of confidence and motivation in them and believing in their role and organization.

> *Freedom of expression in teaching can improve our best practices in the classroom. We are able to seek alternative ways of teaching to improvise our materials and methods, combine different information to support our ideas, seek support from colleagues and new technological innovations, and put our ideas into practice. (respondent 7).*
> *Freedom for teachers to express their abilities in the learning process and other activities. Teachers are given full freedom and responsibility for making learning program plans, implementing them and evaluating student learning (respondent 9).*
> *Empowered teachers can define and complete their own work, be more productive and produce meaningful work, and make important decisions. (respondent 11).*

Empowered teachers will be motivated at work and strive to do their best for their work. This is called motivation for self-fulfilment or more specifically, it is said to be an increase in intrinsic task motivation manifested in a set of cognitions reflecting individuals' orientation towards their work roles also called meaning, competence, self-fulfilment and influence. This is in line with the following interview results:

> *Empowerment can increase self-motivation to improve the quality of work and the meaning of our work, improve our work ability in teaching and we feel satisfied with our work and the progress we make for the students (respondent 8).*
> *We have confidence in our ability to develop ideas, initiate and develop innovations in the classroom (respondent 12).*

The interview findings explain that empowerment is an effort to provide opportunities to use and develop their potential to be professional and experienced to produce quality performance and ultimately improve student academic achievement. Teachers who feel empowered show innovative teaching practices. When teachers feel that their work has meaning for their lives and principals share opportunities for teachers to develop their abilities in teaching, teachers will increase innovative behavior, new teaching methods and implement them. Increased innovative behavior is not only implemented in the teaching process but also demonstrated by teachers by initiating a variety of new products or innovations that can increase teaching effectiveness and improve student and school achievement. Empowerment has an impact on responsibility, loyalty, high work discipline and teacher performance. Empowerment also increases awareness of professional improvement and maintains harmonious communication which is conducive. There is no impression of being forced to carry out tasks. Empowerment is a determining factor for organizations in achieving effectiveness. More autonomy is needed for teachers to fulfil their responsibilities without being forced to follow rigid guidelines such as technical instructions and different implementation instructions that restrict their creativity. Teachers need to be encouraged to be creative and innovative, finding for themselves new methods and ways that are most suitable and appropriate in learning for the success of their students. Empowering teachers' abilities is important so that teachers can carry out a number of responsibilities and fulfil their needs, increasing self-confidence that supports independence.

4.1.2. Impact of Structural Empowerment on School Effectiveness

Structural empowerment forms teachers' access to social structures at work that enable them to get their work done in meaningful ways. The following interview findings explain that teachers who feel structural empowerment will feel easy access to the social structure of the school so that teachers feel more autonomous to carry out and

complete their work by using the control, resources or support they get from the school. Respondents felt that they had gained confidence and that structural empowerment had a positive impact on school performance and effectiveness.

The empowerment that results from school management gives teachers more power and autonomy to do their jobs. This condition certainly makes teachers finally empowered to use the freedom they have gained to make customized decisions quickly to better serve the needs of their students. Structural empowerment emphasizes the issue of power sharing between leaders and subordinates. This structural aspect focuses on the division of decision-making authority. In general, the respondents explained as follows:

Question: Is empowerment important to your work? To what extent are you empowered by the management? What is the most useful aspect of empowerment in relation to school effectiveness?.

Some respondents' opinion are given below:

> *We feel that the flexible structure supports us with responsibility and autonomy in making quick decisions to solve the problems we are responsible for. This structural autonomy encourages our mutual relationship with school leaders to be more coordinated in making decisions, thus increasing our initiative, roles and responsibilities, performance, job satisfaction and motivation (respondent 13).*
>
> *Teachers who are given more access to necessary information also have access to sufficient resources so that we can do our work easily. Teachers who feel structural empowerment will feel easy access to the social structure of the organization so that teachers feel more autonomous to carry out and complete their work by using the control, resources, or support they get from school management (respondent 14).*
>
> *Structurally, we work according to our roles and responsibilities but we work professionally to solve problems and make other decisions without limiting our authority (respondent 17).*

A supportive work environment and management can enhance teachers' extrinsic work motivation. The availability of empowering working conditions can directly facilitate work goals and factors that make up structural empowerment such as performance feedback, opportunities for advancement, organizational and social support.

> *Teachers are empowered so that they will have ample opportunities to be involved in the process of making decisions that support their work. The decisions taken will be more effective because it is the teacher who understands and knows the consequences of his decisions whether personal or in the form of group decisions, so that his commitment to the decision is high (respondent 19).*
>
> *Empowerment will also foster teachers' professionalism at work, develop their ability to improve classroom teaching, and increase various discussion activities and work deliberations with peers or professional groups (respondent 11).*
>
> *The effect of high teacher empowerment on school effectiveness can be seen in teachers' educational attitudes and behaviors, producing effective teaching, managing the school and classroom environment, adapting to change and building cooperation (respondent 14).*

The qualitative findings explain that psychological and structural empowerment have the same quality as work engagement and access to school resources to achieve goals. Empowering working conditions affect teachers' work attitudes and behaviours towards achieving school goals. Teachers feel that their work is very important and the results of their work have an impact on the school. Empowerment also gives teachers great autonomy so that teachers have energy, dedication and absorption in carrying out their work. Empowered teachers also demonstrate their quality as professional teachers with the characteristics of developing their abilities, feeling useful for schools and students, high self-efficacy, being able to make decisions and influencing school life.

School effectiveness as perceived by respondents in the findings of this study is a school that achieves its goals so that all students learn, master the curriculum and achieve learning outcomes.

The impact of empowerment on school effectiveness was described by respondents as strong teacher instructional leadership (teachers have educational attitudes and behaviors), effective teaching (teachers teach professionally), a safe and orderly learning climate (teachers manage the school and classroom environment), learner teachers (teachers are able to adapt to change), students, schools and communities being harmonious (teachers can build cooperation). It is concluded that empowering various resources is necessary to achieve the goal of school effectiveness.

The findings of the relationship pattern between empowerment variables and school effectiveness can be seen in Figure 2.

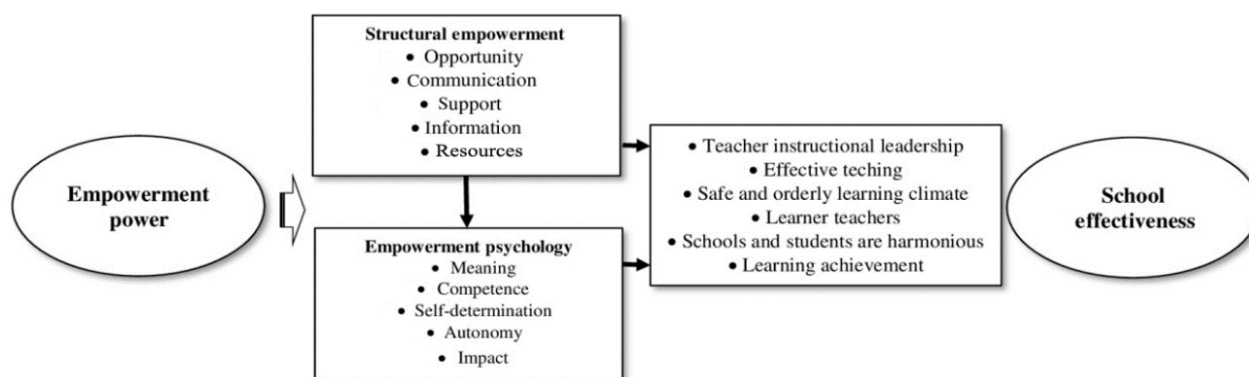**Figure 2.** Relationship between empowerment and school effectiveness.

4.2. Quantitative Findings

According to Figure 2, the findings of the research theoretical model, the problem formulation and the hypothesis submission of this study are:

(1) Whether there is a direct or indirect effect between research variables?.
(2) Whether the structural model is tested and statistically proven?.

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4.2.1. Data Requirements Analysis

Testing the relationship between latent variables and other latent variables or with indicator variables is done using structural equation modeling (SEM) which is statistical modelling that combines elements of factor analysis, regression analysis and path analysis. The relationship between observed variables (manifest variables) and latent variables (underlying constructs or factors) as well as the relationship between latent variables (Henseler, Ringle, & Sinkovics, 2009) are also analyzed.

Before conducting data analysis, first test the data requirements, namely the normality, multicollinearity and linearity requirement of the data. Data requirements analysis begins with a normality test with a sig (2-tailed) value > 0.05. The results of the data normality test that has been carried out show that the data normality values of the structural empowerment variable (0.541> 0.05), psychological empowerment (0.394> 0.05) and school effectiveness (0.295> 0.05) so it can be concluded that the research data is normally distributed.

Furthermore, multicollinearity testing of data is necessary to test whether there is a high and perfect correlation between independent variables or not in the model. Multicollinearity testing is only appropriate if there are two or more predictor variables. Testing is done by looking at the tolerance value and variance inflation factor (VIF); if the VIF value is < 10 or the tolerance value is > 0.01 then there is no multicollinearity (Agarwal, 2021). Based on the data calculations carried out, it shows the calculated value of VIF = 2.537 (VIF < 10, eigenvalue> 0.01) so it is concluded that there is no multicollinearity.

The next analysis is the linearity requirement analysis. Testing the linearity of the independent and dependent variable data is linear or not using the linearity test with the F test (see Table 2).

Table 2. Linearity test results.

Exogenous variables to endogenous variables	Linearity test			Regression significance test		
	F	Sig.	Status	F	Sig.	Status
STE with SE	0.971	0.537	Linear	7.955	0.005	Means
PE with SE	0.956	0.572	Linear	28.458	0.000	Means

Note: STE = Structure empowerment; PE = Psychological empowerment; SE = School effectiveness.

Table 2 shows all linearity values based on the results of F count with a significance value, namely ρ-value> 0.05 or (sig) > 0.05. It is concluded that variables have a linear relationship.

Factor analysis finds the relationship between many independent variables (Garson, 2016). Before factor analysis, first conduct KMO and Bartlett's spherical tests (Hair, Hult, Ringle, & Sartedt, 2017). The following are the results of the KMO and Barlett's tests.

Table 3. KMO and Barlett's test results.

Kaiser-Meyer-Olkin measure of sampling adequacy		0.802
Bartlett's test of sphericity	Approx. chi-square	1094.628
	Df	190
	Sig.	0.000

Table 3 shows the KMO value of 0.802 and ≥ 0.5 with a significant 0.000. These results indicate that there is no significant difference in correlation between variables so the principal component analysis can be continued. Based on the results of the final data processing, each instrument has met the criteria, namely convergent validity which is required to be higher than 0.7. Table 4 presents the results of outer factor loading.

Table 4. Outer loading factor.

Variable	Indicator	Loading factor	Rule of the tomb
Structural empowerment	STE.1	0.765	0.700
	STE.2	0.878	0.700
	STE.3	0.865	0.700
	STE.4	0.754	0.700
	STE.5	0.721	0.700
Psychological empowerment	PE.1	0.932	0.700
	PE.2	0.932	0.700
	PE.3	0.901	0.700
	PE.4	0.766	0.700
	PE.5	0.819	0.700
School effectiveness	SE.1	0.732	0.700
	SE.2	0.905	0.700
	SE.3	0.887	0.700
	SE.4	0.742	0.700
	SE.5	0.965	0.700
	SE.6	0.912	0.700

4.2.2. Hypothesis Testing and Research Model

The results of testing the requirements for variable data analysis show that each data from this research variable has met the requirements for hypothesis testing and research models. Structural model testing is carried out to test the relationship between latent variables. The following is the research structural equation model.

$$\text{Sub structure 1: } SE = \rho_{SE.STE}\, STE + \varepsilon_1 \qquad (1)$$

$$\text{Sub structure 2: } SE = \rho_{SE.STE}\, STE + \rho_{SE.PE} PE + \varepsilon_2 \qquad (2)$$

Table 5. Results of path coefficient analysis of substructure 1.

Influence between variables	Coefficient path (Beta)	t_{-value}	F_{-value}	$R^2_{SE.STE}$	$\rho se\varepsilon_1$
STE with SE	0.439	6.221	15.532	0.432	0.863

Table 5 explains that the path analysis test for substructure1 is significant at 0.01. Thus, it can be stated that all paths are meaningful. The analysis results show the value of determination $R^2 = 0.432$, the effect of structural empowerment (STE) on school effectiveness (SE) is 43.2%.

Table 6. Results of path coefficient analysis of substructure 2.

Influence between variables	Coefficient path (Beta)	t_{-value}	F_{-value}	$R^2_{SE.STE.PE}$	$Pse\varepsilon_2$
STE with SE	0.456	6.553	17.307	0.303	0.897
PE with SE	0.643	7.714			

Table 6 explains that the path analysis test for substructure 2 is significant at 0.01. Thus, it can be stated that all paths are meaningful. The coefficient of determination $R^2 = 0.303$ means that the effect of structural empowerment (STE) and psychological empowerment (PE) on school effectiveness (SE) is 30.3%. The structural equation model of the findings of this study is given in Table 7.

Table 7. Structural equation model of research findings.

Model	Empirical equation	R^2
Model 1	SE = 0.439 STE + 0.863 ε_1	0.432
Model 2	SE = 0.456 STE + 0.643 PE + 0.897 ε_2	0.303

The model or structural equation of this study needs to be tested for model fit. The model fit test is intended to test whether the proposed model fits with the data or not. Based on the test calculation results for path analysis on lines 1 and 2, everything is significant according to the F test. So the price of $M = R^2m$ with the value of all Q is 1. Testing the fit of the model using the following formula (Ridwan & Kuncoro, 2011).

$$Q = \frac{1 - R_m^2}{1 - M} = \frac{1 - 0.307}{1 - 0.307} = 1$$

Q = 1 or close to one, it can be said that the overall path analysis model tested or the fit is perfect with the data. Based on the model testing above, the research model proved to be significant or a perfect fit that describes the causal relationship between the research variables that determine school effectiveness.

The above findings statistically show significant values have been tested. Based on these significant values, it is concluded that the hypothesis of this study can be accepted. Based on the results of the above calculations, the next step is to determine the direct and indirect effects of exogenous variables on endogenous variables. The path model of the relationship between variables is presented in Figure 3.
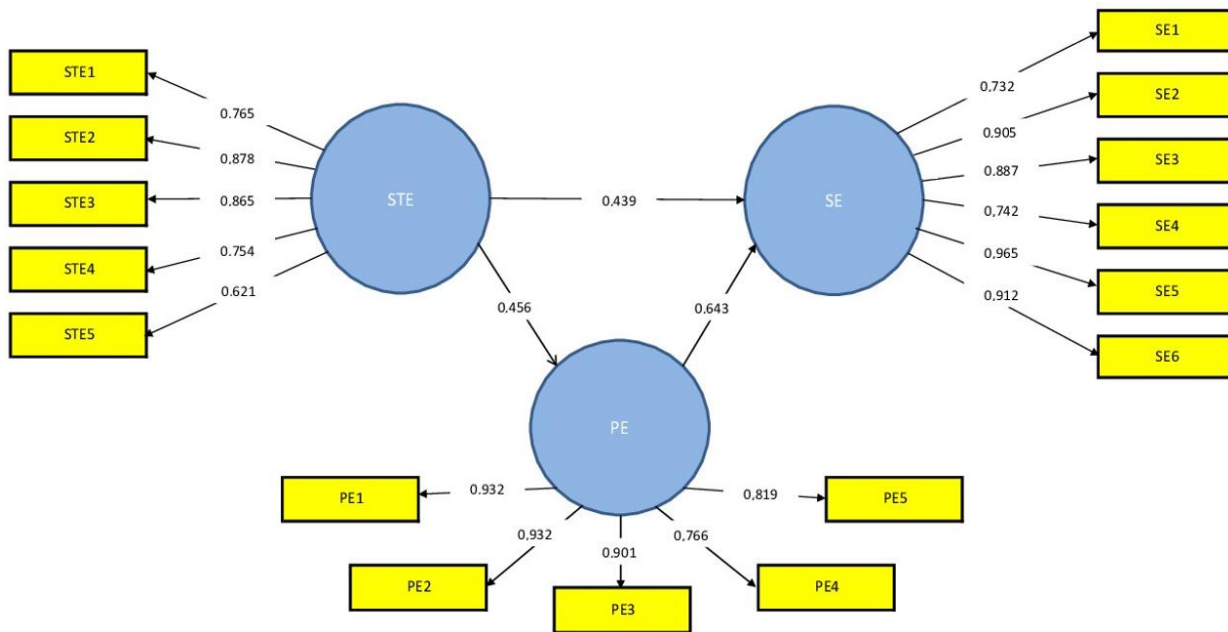

Figure 3. Path model of the relationship between variables.

QUAN findings explain that structural empowerment has a positive and significant direct effect on psychological empowerment of 0.456 and a direct effect on school effectiveness of 0.439. Psychological empowerment has a direct and significant influence on school effectiveness (0.643). Structural empowerment has an influence on school effectiveness through psychological empowerment of 0.482 and a total influence of 0.921 or 92.10%. This means that the strength of structural empowerment directly or indirectly through psychological empowerment determines the increase in school effectiveness which is 92.1%. This means that when communication channels improve, information supports and organizational resources develop; teachers' positive behaviors and feelings also develop to act, engage in work and increase productivity to achieve school goals (see Table 8).

Table 8. Path coefficient results of direct and indirect effects.

Variable influence	Causal effect		Total effect
	Direct	**Through PE**	
STE with SE	0.439	0.482	0.921
PE with SE	0.643	-	0.643

The final quantitative findings support the qualitative findings that structurally empowered teachers will increase teachers' work engagement to innovate and develop learning resources. Structural empowerment enables teachers to complete work in meaningful ways, establish lines of communication and develop resources. The findings imply that psychological empowerment must be followed by structural empowerment. The more structurally empowered teachers are, the more they exhibit behaviors that motivate them to grow, take risks and responsibilities and increase their commitment and influence towards achieving school goals. Structural empowerment will have a positive influence on psychological empowerment and impact on school effectiveness. If the learning climate is safe and orderly (teachers manage the school and classroom environment), the school is a learning organization (teachers can adapt and change), school and community relations are harmonious (teachers can build cooperation) and structural decisions are flexible. When people are structurally empowered they exhibit positive attitudes, greater trust and more autonomy and feel that what they do has an impact on achieving school goals.

5. Discussion

This mixed-methods study examined the impact of empowerment on school effectiveness through an exploratory sequential design. The exploratory sequential design aims to develop better measures with a special population sample and to see if the data obtained from a few subjects in the qualitative phase can be generalized to a large population sample in the quantitative second phase. The preliminary findings of the QUAL explain that aspects of empowerment (structural and psychological empowerment) can generate work actions and motivate teachers to achieve school goals. Teachers who are given access and convenience to the social structure of the workplace are encouraged to be highly engaged and responsible. In the sense of a more autonomous work environment, teachers will determine their roles, tasks and responsibilities with more flexibility and be motivated to work more than expected so that school effectiveness is achieved. Effective teachers manage the classroom and school atmosphere, foster cooperation and adjust to changing situations. These are examples of professional teaching activities and behaviours.

The results of this QUAL which was tested more widely using QUAN showed that structural and psychological empowerment significantly influence school effectiveness, either directly or indirectly. The QUAN results explain that structural empowerment has a positive and significant direct effect on psychological empowerment of 0.456 and a direct effect on school effectiveness of 0.439. Psychological empowerment has a direct and significant influence on school effectiveness (0.643). Structural empowerment has an influence on school effectiveness through psychological empowerment of 0.482 and a total influence of 0.921 or 92.10%.

Empowerment is a means for schools to achieve school effectiveness. A school that can successfully use its human resources to empower teachers has the potential to develop and flourish. Empowerment gives someone the power to act and do something. As per the initial findings of the QUAL research, empowerment is the process of giving authority and breadth of authority to teachers to carry out various efforts and actions in the area of work responsibility. The consequences of empowerment are beneficial to schools and teachers, increasing task commitment, initiation, greater resource innovation in carrying out roles and responsibilities, greater perseverance against obstacles, optimism in achieving goals, job satisfaction and higher productivity. QUAN findings show evidence of teacher empowerment having a positive influence on school effectiveness such as high teacher expectations, clear and focused goal achievement, high student learning opportunities, a conducive teaching climate, the frequency of monitoring student learning and positive relationships between teachers, schools and students.

The findings of this study are also supported by the findings of previous research. However, previous studies have not specifically examined the strength of structural and psychological empowerment and its impact on school effectiveness. Empowerment involves the process of being able to do and act to improve performance (Fock, Hui, Au, & Bond, 2013; Monje-Amor, Xanthopoulou, Calvo, & Vázquez, 2021; Sarafidou & Chatziioannidis, 2013), giving teachers greater responsibility and authority will have an impact on achieving school effectiveness (Ahrari et al., 2021). If teachers are empowered in their abilities, they will be productive (Lee & Nie, 2014), free to develop ideas, behave educationally and work professionally regarding their teaching (Marks & Louis, 1997) build a conducive work climate, adapt to change and build positive cooperation with anyone (Lee & Nie, 2017).

Other supporting research findings have explained that empowering teachers increases their opportunities to be involved in shared decision-making (Gullan et al., 2013), increases their influence and status (Wall & Rinehart, 1998), motivates skills and makes schools a place that develops professionals, avoids complications and stresses (Johnson & Short, 1998), encourages work engagement and relationships with the principle of trust (Tran, 2018) and creates a learning environment and good communication among teachers (Titus & Muttungal, 2023). According to Zembylas and Papanastasiou (2005) empowerment increases job satisfaction and is related to teachers' work roles. School administrators support teachers' professional development, self-efficacy and support their autonomy (Desimone & Garet, 2015) or employ them in some managerial roles (Balyer et al., 2017). Structural empowerment has a strong relationship to psychological feelings and fully mediates the relationship with creativity (Sun, Zhang, Qi, & Chen, 2012). Sequentially, structural and psychological empowerment have a significant influence on organizational effectiveness (Manzoor, 2012; Maton, 2008; Tran, 2018; Yorulmaz, Colak, & Saglam, 2018).

The QUAL findings explain that the impact of empowerment is beneficial for schools and teachers. These benefits can be seen in the increased commitment, optimism and responsibility of teachers in achieving school effectiveness, productivity and job satisfaction. Teacher empowerment can increase the effectiveness of schools. Teachers have the power to make choices, improve themselves, participate and take on more responsibility

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(Aguado, Garcia, Laguador, & Deligero, 2015; Avalos, 2011; Ritter, 2019). Finally, empowerment creates a feeling of happiness in teachers so that they think positively about their environment (Tindowen, 2019) with high expectations to achieve school goals (Miller, 2015), thus ensuring all students can learn (Kirk, Lewis, Brown, Karibo, & Park, 2016; Titus & Muttungal, 2023). Empowering must be done with a work system that is not rigid, so that all teachers' efforts and feelings will be meaningful to the school. Management and leadership actions should always be directed so that all school components are involved in achieving school goals (Gullan et al., 2013).

6. Conclusion

This study concludes that structural and psychological empowerment have an impact on school effectiveness. Qualitative findings show that teachers who are structurally empowered are able to complete their work in a meaningful way. Teachers feel their work makes a major contribution to the school. Teachers feel motivated to be innovative and creative in the classroom when they have access to resources, knowledge, and empowering support through communication channels. This also fosters a sense of confidence in the teachers' abilities to make a difference in the school's progress. The qualitative findings produced a pattern of relationship between empowerment and school effectiveness. Quantitative findings explain that structural empowerment has a positive, significant and direct effect on psychological empowerment of 0.456 and a direct effect on school effectiveness of 0.439. Psychological empowerment has a direct and significant influence on school effectiveness (0.643). Structural empowerment has an influence on school effectiveness through psychological empowerment of 0.482 and a total influence of 0.921 or 92.10%. This means that the strength of structural empowerment directly or indirectly through psychological empowerment determines the increase in school effectiveness, which is 92.1%. This means that when communication channels improve, information supports and organizational resources develop teachers' positive behavior to act, engage in work and increase productivity to achieve school goals.

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Appendix

Appendix 1 present of research instruments.

Appendix 1. Research instruments.

No item	Question indicator
1	The structure provides equal opportunities for teachers to develop
2	Opportunities to collaborate with teacher groups in other schools
3	Opportunity to improve education level
4	Keeping up with technological developments to support teaching
5	The school adopts a flexible way of working
6	The school provides training to support teachers' skills
7	Freedom for the team to be creative and take initiative on decisions
8	Smooth communication in all directions
9	Openness in information
10	Can utilise teaching materials and resources at any time
11	Facilities and infrastructure support
12	Have quick access to resource utilisation
13	Students are very respectful to the teacher
14	Parents have great respect for teachers
15	Colleagues are very respectful
16	Always praised by colleagues
17	Teaching according to my area of expertise at school
18	Challenging work can be done
19	Any heavy teaching load can be carried out well
20	Aware that teaching duties must be carried out to the best of their ability
21	Awareness of all the obligations that must be done as an educator
22	Whatever decision you make, be ready to accept the consequences
23	Always face various problems in teaching, but can be overcome
24	Involved in the preparation of school curriculum development
25	Involved in deciding on the school's curriculum
26	Having the opportunity with the team to revise the curriculum
27	Involved in deciding on the school's annual programme planning
28	Involved in the formulation of school regulations
29	Facilitate students' different learning interests
30	Facilitate all students to complete their learning as a whole
31	Treat all students equally in learning
32	Create a warm and friendly learning climate for all students
33	Grouping students in heterogeneous groups so that all are active in learning
34	Collaborate to develop interactive learning strategies and media
35	Manage and utilise school facilities effectively and efficiently
36	Provide materials and resources relevant to student learning
37	Enrich knowledge, develop ideas and thoughts
38	Manage students to achieve optimal classroom conditions
39	Mobilise students to be actively involved in learning
40	The school has a development plan that outlines long-term goals and recommendations
41	School goals and objectives are understood by teachers
42	Teacher goals are in line with school goals
43	The school runs programmes that are in line with the school's goals and objectives
44	School plans are developed with teacher participation
45	Active supervision of student activities in the classroom
46	Student performance is routinely evaluated by teachers with a variety of assessments
47	Provide home assignments with sufficient intensity for students
48	Student learning outcomes in class are reported regularly to parents
49	Using student learning outcome data as a reflection