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Exploring Factors of the Parent-Teacher Partnership Affecting Learning Outcomes: Empirical Study in the Early Childhood Education Context

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The quality of early childhood education is influenced by partnerships between parents and teachers. This research aims to measure the influence of different factors of the parent-teacher partnership, namely, communication, cooperation, and parents' participation on the early childhood learning outcomes. This research also measure the effect of teacher-parent cooperation in mediating the influence of teacher-parent communication on the learning outcomes and the effect of parental participation in moderating teacher-parent communication on the learning outcomes. The study used a quantitative approach with a cross-sectional survey design among 183 parents of young children in Padang. The data were collected using questionnaires, which were analyzed using a Structural Equation Model (SEM) analysis. The results indicate that the early childhood education learning outcomes are (1) positively influenced by teacher-parent communication and (2) parental participation, (3) except teacher-parent cooperation. Besides, (4) the teacher-parent communication positively influences teacher-parent cooperation. (5) The teacher-parent communication does not mediate the influence of teacher-parent cooperation on the children's learning outcomes, and (6) the parents' participation does not moderate the influence of teacher-parent communication on the early childhood education learning outcomes. The results of this research contribute to identifying the importance of parents in early childhood learning outcomes through partnerships with teachers.

Keywords: communication, cooperation, early childhood learning outcomes, parent-teacher partnership, participation, learning

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INTRODUCTION

Early childhood education is the basis for the holistic development of a lifelong learner. Development during early childhood is widely considered as the critical period, which lasts to elementary school (Rao, et al., 2014). Early learning has the benefit not only for the academic skills of children, but also for their developmental aspects, such as cognitive, social, language, psychomotor, and self-care development (Adnan et al., 2016; Kariuki et al., 2007; Tayler et al., 2016). Providing children with high-quality care in the first few years of life can greatly improve their opportunities to succeed. Therefore, all children require equal access to early childhood education so that they have the same opportunities to succeed in future life.

Children's learning outcomes in early childhood education serve to see their achievement on developmental progress. Assessment and report of early childhood development are managed to identify child's progress and estimate the teaching and learning process (Violeta, 2022). Among the factors that influence early child learning outcomes, teachers, parents as the main caregivers constitute a determining factor for the success of children's education at an early age (Tayler et al., 2016; Denboba et al., 2015; Mahoney, 2021).

From the socio-cultural perspective, children as learners are active participants within the learning environment, including families, schools, and communities (Haenilah et al., 2021; Wu, 2021). Family is the major determinant of children's educational success (Susilo, 2020; Essa & Burnham, 2019) and their early personality development (Syuraini et al., 2018; Boshkova et al., 2018; Bozhkova et al., 2020). Parents are responsible for guiding and developing all aspects of their children's development, including physical, intellectual, artistic, spiritual, and moral growth, to pursue their learning goals in school (Sokip et al., 2019; Susilo, 2020; Tomczyk & Wąsiński, 2017). The family (especially parents), teachers at school, and peers influence the achievement of a child. In other words, children's education achievement is heavily influenced by their environment (Adegboyega et al., 2017; Gonida & Cortina, 2014).

The involvement of parents in education is one of the pillars to determine the quality of an educational institution. Thus, the demands of parents to provide a safe and healthy learning environment are increasing. In Indonesia, the Directorate General of Early Childhood and Community Education has defined the target to strengthen parents' role and involvement in education (Iskandar, 2019). This demonstrates the importance of parental contribution in the accomplishment of children's developmental goals (Epstein et al., 2002; Johnetta et al., 2011) and their learning outcomes (Sadiku & Sylaj, 2019). In this case, policymakers also agree that children's success is also influenced by parental involvement in education.

The number of studies that discuss the relationship between the factors of partnership, i.e., teachers, parents, and their impact on learning outcomes, is limited. A critical analysis from previous studies reveals a few main gaps, one of which includes the influence of factors within the teacher-parent partnership on learning outcomes which is usually examined separately (e.g., communication-cooperation, communication-

participation). Lekli & Kaloti (2015) investigated communication as central in teacher-parent partnership. Meanwhile, in their study, Cook et al., (2018) found that cooperation was one of the aspects predicting the children's academic success in teacher and parent partnership. However, no research has examined which factors in teacher-parent partnership influence children's learning outcomes in early childhood education.

Purposes of the study

The main purpose of this research is to estimate the Structural Equation Modeling (SEM) model to measure teacher-parent partnership factors (teacher-parent communication, cooperation, and parental participation) affecting to learning outcomes of early childhood. Furthermore, the research also sought to measure the relationship among the components of teacher-parent partnership i.e teacher-parent communication, cooperation, and parental participation.

Literature Review

Early childhood education learning outcomes

The focus of early childhood education program success is on children's development. With the growing emphasis on early childhood education, Grieshaber (2010) mentions that it is of great importance to understand how children develop their essential knowledge, skills, and behaviors as the outcomes of early childhood education. Learning outcomes are used to define children's results of learning according to certain developmental stages. Early childhood learning outcomes are influenced by several factors. In terms of direct effects, the most important predictor is the extent to which parents engaged in their children's learning activities (Meissel et al., 2019). Some literature has mentioned the positive impacts parental involvement has on the students' learning outcomes. It enables students to become active participants in the class, and it is also considered to increase the students' social, emotional, academic growth (Shehu, 2019; Ma et al., 2016; Swick, 1991; Durisic & Bunijevac, 2017), academic optimism, and learning outcomes (Hoy, 2012).

Following the majority of studies examining the influence of teacher-parent partnership, we defined, in this research, learning outcomes during early childhood education as a cognitive development that facilitates academic achievement. Socio-emotional development mainly measures behavior. Language measures several linguistic aspects, including verbal communication. Motor development measures physical strength and coordination. Our definition and concept are consistent with the previous research on early childhood education learning outcomes.

Teacher–parent communication

Communication is defined as the activity of expressing feelings, thoughts, knowledge, news, and skills. The process of communication is the creation of commonalities in terms of emotions, thoughts, and manners among individuals (Chung et al., 2016). By delivering and receiving information, interpersonal communication impacts others, whether deliberately or inadvertently (Hargie et al., 2017).

In realizing an efficient early childhood education, communication should involve school administrators, teachers, children, and parents (Murray et al., 2015; Blau & Hameiri, 2017; Smith, 2020). Teachers and parents need to communicate discussing their children's performance (Ma et al., 2016). Besides, increasing parental support in education is required (Graham-Clay, 2005) to conduct effective counseling and guidance and increase the children's motivation and success (Wong et al., 2018). Especially in pre-school, primary, and secondary school, communication between teachers and parents ensures the early realization of issues that might happen in children (Metcalf, 2021). Furthermore, the effectiveness of teacher-parent communication contributes to the school by improving their relationship with the district, utilizing environmental resources, and developing programs that are appropriate for the environmental conditions (Adams et al., 2016).

Teacher-parent cooperation

Teachers-parent cooperation is so necessary that parents may obtain information and experience from teachers to educate their children (Loncarevic et al., 2021). Furthermore, teachers also receive information from parents about the students' lives and characters. The cooperation between them is expected to improve students' academics (Hill et al., 2018). Early childhood education is a liaison between teachers and parents in obtaining good learning outcomes (Goldstein et al., 2019). Getting these learning outcomes requires good cooperation between teachers and parents (Syuraini, 2020; Araujo et al., 2016).

The cooperation between teachers and parents in early childhood education helps solve students' problems with their guardians (Blaževi, 2016). Cooperation occurs when teachers give explanations to parents regarding children's weaknesses, whether physical, mental, or learning difficulties (Lekli & Kaloti, 2015; Vlasov & Hujala, 2017). These helps parent to deal with children at home, and also aligned the school program with house activites, for example in the use of screen time (Gjelaj et al., 2020). Furthermore, since it is necessary to arrange harmony in cooperation between teachers and parents, there should be no misunderstanding between them (Salzberger-Wittenberg et al., 2019). The cooperation between teacher and parent is required for the best achievement of the teaching and learning process (Šteh & Kalin, 2011). Students can take optimal benefits from parents that have good relations and cooperation with the school.

Parental participation

Parental participation is one of the external factors that affect children's readiness in school. This participation refers to the materials and psychological sacrifices made for the benefit of children's education (Grolnick & Slowiaczek, 1994). This aspect is multidimensional, and it occurs at home and in school environment (Mcneal, 2014; Tazouti & Jarlégan, 2019). The results of several studies reveal that parental participation in early childhood education affects the children's learning outcomes, academic, and socio-emotional skills (Martin et al., 2013; Juwita et al., 2019; Tabaeian, 2016; Mwirichia, 2016; Mcneal, 2014).

Feelings of competency and connections are very critical for children's development. Motivation and skills are brought about by two different forms of parental participation in children's homework (Silinskas & Kikas, 2019). In the context of finishing homework, parental control is described as putting tension on children to do their assignments (e.g., checking whether or not the children have finished their homework, engaging in homework without being asked by children, and punishing children when homework is not finished) (Johnetta et al., 2011). Meanwhile, parental support is defined as the assistance received by children, e.g., sensitivity to their feelings and support when doing homework (Núñez *et al*., 2017).

Parental participation in children's school tasks is more associated with achievement-driven motivation than children's academic success alone (Guo & Kilderry, 2018). Parental participation in early childhood education process can take many forms. Epstein (2010) has identified six factors within the frame of parental participation in early childhood education, mostly the activities are including parenting, communicating, volunteering in classrooms, decision-making, and collaborating with the community.

Hypotheses

The following hypotheses were proposed and subsequently evaluated with PLS-SEM analysis:
H1: Teacher-parent communication positively influences the early childhood education learning outcomes.
H2: Teacher-parent communication positively influences the teacher-parent cooperation.
H3: Teacher-parent cooperation positively influences the early childhood education learning outcomes.
H4: Parental participation positively influences the early childhood education learning outcomes.
H5: Teacher-parent cooperation mediates the influence between the teacher-parent communication and the early childhood education learning outcomes.
H6: Parental participation moderates the influence between the teacher-parent communication and the early childhood education learning outcomes.

METHOD

Sample

The samples taken were 183 parents with children who went to early childhood education in Padang. Table 1 shows that 44 parent-respondents (24%) were male, and the other 139 (76%) were female. There were no particular reason in selecting the respondents based on the gender differences. Furthermore, based on their ages, 140 parent-respondents (76.5%) were 26-35 years old, 39 (21.3%) were 36-45 years old, and 4 (2.2%) were 46-55 years old. Moreover, based on their educational attainment, the majority of the respondents held a D1/D2/D3/D4/undergraduate degree (116 parent-respondents or 63.4%), 52 (28.4%) held a senior high school education degree, 12 (6.6%) held a master's or doctoral degree, and the other 3 (1.6%) held a junior high school degree. Meanwhile, based on the age of the children as respondents, 85 respondents (46.4%) were 5 years old children, 61 (33.3%) were 6 years old children,

and the other 37 (20.2%) were 4 years old children. Furthermore, in terms of their gender, 110 children (60.1%) were female, and 73 (39.9%) were male.

Table 1
Sample characteristics

Sample Characterization		Frequency	Percent (%)
Gender	Male	44	24
	Female	139	76
	Total	183	100
Age	26-35 years old	140	76,5
	36-45 years old	39	21,3
	46-55 years old	4	2,2
	Total	183	100
Education	Junior high school degree	3	1,6
	Senior high school degree	52	28,4
	D1/D2/D3/D4/undergraduate degree	116	63,4
	Master's/doctoral degree	12	6,6
	Total	183	100
Children's Age	4 years old	37	20,2
	5 years old	85	46,4
	6 years old	61	33,3
	Total	183	100
Children's Gender	Male	73	39,9
	Female	110	60,1
	Total	183	100

Research Design

This study used a quantitative approach with a cross-sectional survey design to measure the relationship of factors within teacher-parent partnership on learning outcomes of early childhood education. This study focused on measure the causal relations between factors in the teacher-parent partnership (teacher-parent communication, teacher-parent cooperation, and parents' participation) and the early childhood education learning outcomes. We employed the Structural Equation Modeling (SEM) to compose a complex effect model that might be used to analyze the direct and indirect effects (Byrne, 2016). This study considered PLS-SEM as a more suitable technique for the following reasons: (1) the relationships among teacher-parent partnership factors, including teacher-parent communication, teacher-parent participation, parents' participation, and early childhood education learning outcomes were believed to be in early-stage and thus created the opportunity to explore new phenomena; (2) the use of this technique was suitable for analyzing the data that exhibited non-normal distribution (Hair et al., 2017). This study conducted in Padang city, West Sumatra Province, Indonesia. We gather the data from 3 early childhood education institutions, in the urban, suburban, and rural part of Padang City.

Instruments

The measurement tools used in this study were two kinds of questionnaires. The instrument for measuring teacher-parent partnership was the questionnaire adapted from

Yotyodying et al., (2020). The other questionnaire, using the East Asia-Pacific Early Development (EAP-ECDS) scale, was used to measure the early childhood education learning outcomes.

Teacher-parent partnership scale

This study measured the teacher-parent partnership based on the questionnaire adapted from Yotyodying et al., (2020) with minor modifications. The questionnaire consisted of three aspects, namely teacher-parent communication (15 items), cooperation (25 items), and parental participation (13 items). A total of 53 items of the 5-points Likert scale determined the value of each teacher-parent partnership factor. The responses from the respondents were divided into five assessment categories, each of which had one to five points, from strongly disagree (1) to strongly agree (5).

Learning Outcome of Early Childhood Education scale

The instrument measuring the early childhood education learning outcomes was adapted based on the existing scale from the East Asia-Pacific Early Development (EAP-ECDS). It measured the learning outcomes based on the children's cognitive development, socio-emotional development, motor development, language, self-hygiene, local culture, curiosity and interest in the learning activity. It consisted of 8 items using a 5-point Likert scale (1=strongly disagree, 5=strongly agree).

Data Collection and Data Analysis

The data collection tools used are questionnaires as primary data.

For data analysis in this study, we employed the partial least squares structural equation modeling (PLS-SEM) via *software smartPLS 3.2.8*. We examined the influence of teacher-parent partnership, including teacher-parent communication, teacher-parent cooperation, and parents' participation on the children's learning outcomes in early childhood education. Furthermore, the mediating effect was examined using the method developed by Zhao et al. (2010), where the *complementary mediation* test was utilized, namely the indirect and direct influence with significant unidirectional information. In this study, we used the bootstrap technique embedded in PLS-SEM to analyze the mediating and moderating effects.

According to Sharma et al. (1981), when the moderator variable is proven to influence the exogenous element by that of the endogenous, the t-value is less than 1.96, and the p-value is less than 0.005. Then, the moderator variable is known to have a direct influence on the endogenous, and it is called a quasi moderator. However, when the moderator variable influences the exogenous by the exogenous variable and the moderator variable does not have a direct influence on that of the endogenous, this type of moderator is called a pure moderator. Furthermore, when the moderator variable is not proven to influence the exogenous variable on that of the endogenous, the t-value is less than 1.96, and the p-value is greater than 0.05, indicating that it is not a form of moderation.

Data analysis consists of several components to determine the main component by comparing one to another to the whole. Data analysis techniques are used to test

problems or hypotheses. Data management in this study will use SmartPLS 3.2.8 Software. The structural equation analysis model consists of steps as follows:

1. Obtain concept and theory-based models to design structural models (relationship between latent variables used).
2. Designing a measurement model, namely the relationship between indicator variables and latent variables. Designing the measurement model is done by determining the type of indicator of each latent variable (reflexive or formative). Based on the operational definition of variables, it can be seen that the nature of each indicator on each variable used is reflexive.
3. Create a path diagram that explains the pattern of relationship between latent variables and their indicators.

Measurement Model

In order to analyse the data through partial least squares structural equation modeling (PLS-SEM) via *software smartPLS 3.2.,* there are two most important steps required which are measurement and structural model. *Measurement Model Assessment* (MMA) specializes in the relationship between latent variables and their indicators or statement items. This means that MMA shows how each indicator relates to its latent variable (Giyanti & Indriastiningsih, 2019). The tests performed on MMA were as follows:

a. *Convergent Validity*

(Hair et al., 2014) explained that convergent validity is the extent to which certain measurement items blend. In the assessment of convergent validity, four criteria should be considered. And the item was declared valid when the outer loading was > 0.7 and the data were stated to be reliable when Cronbach's alpha was > 0.7, composite reliability > 0.7; average extracted variance (AVE) > 0.5.

b. *Discriminant Validity*

Discriminant validity test shows the uniqueness of other constructs. The measurements were carried out using the Fornell-Larcker criterion (Fornell & Larcker, 1981). A latent variable shares more differences with the underlying indicator than with any other latent variable. This means that the unique value in question is that of a variable that is greater than the latent variable compared to others (Fornell & Larcker, 1981; Hair et al., 2014).

The conclusion of the modified Heterotrait-Monotrait Ratio (HTMT) test in Table 4 was that all the variables had an HTMT value that was <0.90, indicating good discriminant validity, I.e., they were completely different from each other (unique). As discussed by Henseler et al. (2015) which used the standard measurement value of 0.9 as the upper limit of the ratio, stated that the distribution of the ratio value below 0.9 was declared a valid discriminant.

The data analysis from *smartPLS* extracts the latent variable scores for each of the first-order constructs in the measurement model. The measurement model specializes in the relationship between the latent variables and their indicators or the statement items. The validity of the measurement model depends on the goodness of fit accepted as a good

model. The model of convergent validity is used to blend certain measurement items. In the assessment of convergent validity, four criteria are considered. Table 2 shows that the convergent validity and reliability are adequate because the loading is > 0.7. In addition, the data are defined reliable because the Cronbach's alpha is > 0.7, the composite reliability is > 0.7; and the average extracted variance (AVE) is > 0.5. To determine the discriminant validity, the heterotrait-monotrait ratio of correlations (HTMT) criterion applies. All the HTMT values are below the 0.9 thresholds, meaning that the discriminant validity is established.

Table 2
Results of the measurement model

Variable	Item	*Outer Loading* >0.07	*Cronbach's Alpha*	*Composite Reliability*	AVE >0.05
Teacher-Parent Communication (X) * Parental Involvement (Z)	X*Z	2.336	1.000	1.000	1.000
Children's Learning Outcomes (Y)	C1	0.763	0.889	0.913	0.600
	C2	0.838			
	C3	0.783			
	C4	0.790			
	C5	0.751			
	C6	0.725			
	C7	0.768			
Teacher-Parent Cooperation (M)	KS10	0.819	0.885	0.910	0.593
	KS11	0.791			
	KS12	0.769			
	KS14	0.750			
	KS15	0.816			
	KS17	0.733			
	KS22	0.702			
Parent Participation (Z)	P10	0.793	0.887	0.914	0.640
	P12	0.811			
	P13	0.837			
	P5	0.714			
	P8	0.819			
	P9	0.820			
Teacher-Parent Communication (X)	K10	0.743	0.875	0.906	0.617
	K11	0.792			
	K2	0.793			
	K6	0.747			
	K8	0.798			
	K9	0.837			

Structural Model

Structural Model Assessment (SMA) was conducted to predict the causality between latent variables. Evaluation of SMA on SEM PLS was carried out by examining the R and Q squares. The significance test to predict the existence of a causal relationship was carried out through bootstrapping (Giyanti & Indriastiningsih, 2019).. PLS Hypothesis Testing is tested using non-parametric bootstrapping techniques rather than assuming the data is normally distributed (Hair *et* al., 2014).

Based on the result of the evaluation model above, the next step of data analysis is model interpretation. *Structural Model Assessment* (SMA) is used to predict the causality between the latent variables. The evaluation of SMA on SEM PLS is carried out by examining the R and Q squares. The significance test to predict the existence of a causal relationship is carried out through bootstrapping (Giyanti & Indriastiningsih, 2019).. The PLS Hypothesis Testing is carried out using a non-parametric bootstrap, rather than assuming the data have been normally distributed (Hair *et* al., 2014). Based on the data processing by using non-parametric bootstrap, the results are observed to answer the hypotheses in this research. The results of the hypothesis testing are shown through the t-values and p-values. The hypothesis is accepted when the t-value is > 1.96 and the p-value is < 0.05. This is interpreted that the exogenous variables affect the endogenous variables, and vice versa (Hair et al., 2014).

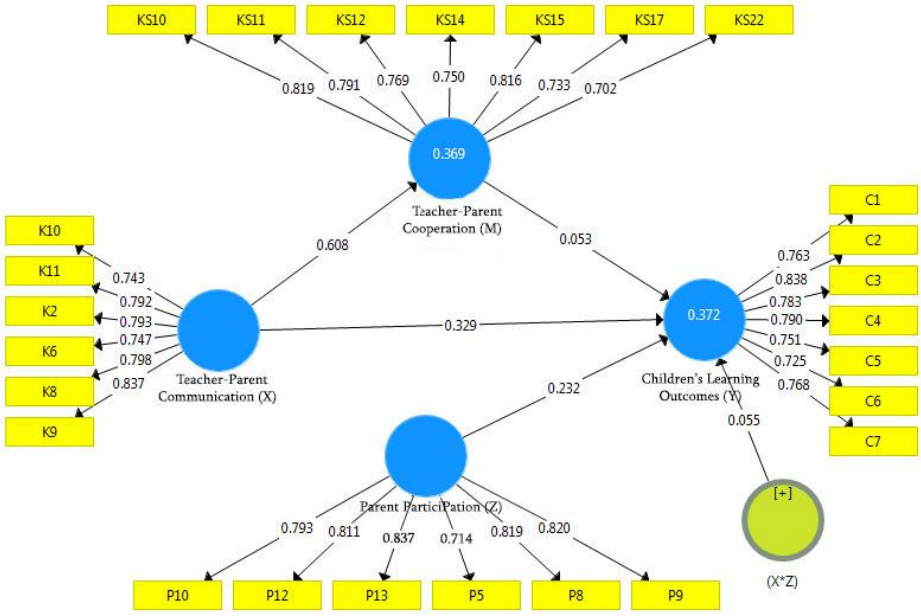

Figure 1
Structural model results

The structural model in PLS-SEM examines the path relationships among the four constructs. Figure 1 represents the structural model results. The output of the structural model can be used to see the significance of the influence of each construct variable, i.e., teacher-parent communication, teacher-parent cooperation, parents' participation, and children's learning outcomes. The structural model test is designed based on the path coefficient, indicated by the original sample value and the *t-value*.

FINDINGS AND DISCUSSION

Based on the respondents' responses, analysis revealed that half of the proposed hypotheses (H_1, H_2, and H_4) presenting direct relationships among the constructs are empirically supported, with t-values greater than 2.57 at the significant level of 1%. Meanwhile, hypotheses H_3, H_5, and H_6 are rejected. It is concluded that the early childhood education learning outcomes are positively influenced by the teacher-parent communication (t=4.655, p=0.000) and parental participation (t=2.707, p=0.007). The findings also indicate a direct relationship of factors within the teacher-parent partnership. In particular, the results show that teacher-parent communication is positively influenced by teacher-parent cooperation (t=7.135, p=0.000). On the other hand, the results show that teacher-parent cooperation does not influence the early childhood education learning outcomes (t=0.517, p=0.606). Finally, the findings indicate that the teacher-parent communication does not mediate the influence of teacher-parent cooperation on the children's learning outcomes (t=0.515, p=0.607), and the parent's participation does not moderate the influence of teacher-parent communication on the early childhood education learning outcomes (t=0.901,p=0.368).

Table 3
Results of hypothesis test

Path Analysis	*Original Sample (O)*	*t values*	*p values*	Hypotheses
Teacher-Parent Communication (X) -> Children's Learning Outcomes (Y)	0.329	4.655	0.000	H_1 Accepted
Teacher-Parent Communication (X) -> Teacher-Parent Cooperation (M)	0.608	7.135	0.000	H_2 Accepted
Teacher-Parent Cooperation (M) -> Children's Learning Outcomes (Y)	0.053	0.517	0.606	H_3 Rejected
Parental Participation (Z) -> Children's Learning Outcomes (Y)	0.232	2.707	0.007	H_4 Accepted
Teacher-Parent Communication (X) -> Teacher-Parent Cooperation (M) -> Children's Learning Outcomes (Y)	0.032	0.515	0.607	H_5 Rejected
(X * Z) -> Children's Learning Outcomes (Y)	0.055	0.901	0.368	H_6 Rejected

Table 3 shows that half of the proposed hypotheses (H_1, H_2, and H_4) presenting direct relationships among the constructs are empirically supported, with t-values greater than 2.57 at the significant level of 1%. Meanwhile, hypotheses H_3, H_5, and H_6 are rejected. It is concluded that the early childhood education learning outcomes are positively influenced by the teacher-parent communication (t=4.655, p=0.000) and parental participation (t=2.707, p=0.007). The findings also indicate a direct relationship of

factors within the teacher-parent partnership. In particular, the results show that teacher-parent communication is positively influenced by teacher-parent cooperation (t=7.135, p=0.000). On the other hand, the results show that teacher-parent cooperation does not influence the early childhood education learning outcomes (t=0.517, p=0.606). Finally, the findings indicate that the teacher-parent communication does not mediate the influence of teacher-parent cooperation on the children's learning outcomes (t=0.515, p=0.607), and the parent's participation does not moderate the influence of teacher-parent communication on the early childhood education learning outcomes (t=0.901,p=0.368).

Teacher-Parent Communication on the Learning Outcomes of Early Childhood Education

The hypothesis testing shows that the teacher-parent communication on the children's learning outcomes has an original sample value of 0.329. This indicates that teacher-parent communication has a favorable influence on the children's learning outcomes. Furthermore, the effect of teacher-parent communication on the children's learning outcomes has a t-value of 4.655 > 1.96 and the p-value of 0.000 <0.05. The result indicates that communication between teachers and parents has a substantial impact on the children's achievement. It is concluded that the better the teacher-parent communication is established, the higher the learning outcomes the children will achieve. Thus, parent-teacher communication is a very effective educational tool and has helped children improve their learning process and outcomes. This result is corroborated by the research conducted by Ünsal & Ağçam, (2019); Halimah *et al*., (2020); and Abbood & Dakhil, (2021).

This finding confirms the previous research findings confirming that constructive collaboration was built through cooperation, continuous, and two-way communication between school teachers and parents (Blitch, 2018). This type of communication provides opportunities to exchange information between the school and parents about children, which are used to align the learning objectives (Dotger, 2015). Parents inform teachers of their expectations concerning the learning outcomes, which can be used by the teachers to design the ideal learning habits. Therefore, teacher-parent communication promotes motivation and improves the children's learning outcomes (Kraft & Dougherty, 2013).

Teacher-Parent Communication on the Cooperation of Teacher and Parent in Early Childhood Education

Testing the path analysis of the Teacher-Parent Communication on the cooperation has an original sample value of 0.608. This shows that teacher-parent communication has a positive influence on their cooperation. Furthermore, the teacher-parent communication on the cooperation has the t-value of 7.135 > 1.96 and the p-value of 0.000 <0.05, showing that teacher-parent communication has a significant influence on teacher-parent cooperation. Based on this result, it is concluded that the better the teacher-parent communication is established, the stronger their cooperation to improve the children's learning outcomes. The result indicates that establishing a teacher-parent

communication relationship that helps in the children's learning outcomes is achieved through teacher-parent cooperation. This is in line with the results of the research conducted by Ameti et al. (2020).

Communication with parents is one of the responsibilities of teachers, especially in early childhood education institutions. Effective communication has a positive effect on children's learning outcomes when accompanied by good strategies (Chen & Lin, 2022). Sylaj & Sylaj (2020) specifically mentioned that written communication is a factor that affects collaboration between teachers and parents.

Teacher-Parent Cooperation on the Learning Outcomes of Early Childhood Education

In the path analysis of teacher-parent cooperation on the achievement of children's learning outcomes, the output result is a t-value of 0.517. The result of the t-value shown is greater than 1.96 and the p-value of 0.606 > 0.05. The result indicates that parent-teacher cooperation has no significant influence on the achievement of the children's learning outcomes. Therefore, it is concluded that the better the teacher-parent cooperation is, the less learning outcomes the children will achieve. Thus, parent-teacher cooperation is not useful in completing and increasing the children's academic productivity.

Cooperation between teachers and parents is often associated with improving children's development and achievement (Castro et al., 2015). However, the cooperation of parents and teachers is statistically less useful in improving children's learning outcomes. In their research, Cook et al. (2018) found that parents' agreement or disagreement to cooperate with the school teachers did not result in different children's learning outcomes. Nevertheless, cooperation contributes positively to children's skills when both parents and teachers understand the value of cooperation between them (Syriopoulou-Delli et al., 2016).

Effective teacher-parent cooperation takes time and commitment from both parties (Sadiku & Sylaj, 2019; Tsyrenov et al., 2017). Young children usually have problems in expressing their feelings and the challenges they face (Kuset & Gür, 2021). Teacher-parent cooperation allows the teacher to look deeper into children's situations and help to confirm their opinion about them. Both sides of these coins need the same understanding of what children have and what children need for the improvement of their development and learning outcomes. Thus, it needs both sides' awareness and actions.

Parental Participation on the Learning Outcomes of Early Childhood Education

The initial sample value for parents' participation in the attainment of early childhood education learning outcomes is 0.232. This shows that parental participation has a positive effect on the children's learning outcomes, confirmed with the t-value of 2.707 > 1.96 and the p-value of 0.007 < 0.05. The result indicates that parental participation has a significant influence on children's learning outcomes. Therefore, the greater the parents show their participation, the higher the learning outcomes the children will

achieve at school. Parent participation has a very effective influence and has helped children improve the learning process and make communication easier with children's learning improvements. This is supported by the results of the research conducted by Jeynes (2016); Boonk et al. (2018); and Silinskas & Kikas (2017).

Schools use several strategies to increase parent participation, such as holding exhibitions of children's work, field trips, and workshops. Through these events, teachers have an opportunity to communicate with parents. This type of participation benefits children's achievement (Mahuro & Hungi, 2016; Hornby, 2011). Communication between the teachers and parents is very important, especially when the children are experiencing academic and social difficulties (Barnett et al., 2020; Halimah et al., 2020). Castro et al. (2015) argue that parental participation affects the students' achievement of learning outcomes, especially when parents have already set high expectations of their children.

Teacher-Parent Cooperation Mediates the Teacher-Parent Cooperation on the Learning Outcomes of Early Childhood Education

The path analysis shows that there is no influence of the indirect relationship of teacher-parent communication on the children's achievement of learning outcomes through teacher-parent collaboration because it has the t-value of $0.515 < 1.96$ and the p-value of $0.607 > 0.05$. The result indicates that the influence of teacher-parent communication on learning outcomes is not high, even though there is a cooperation between teachers and parents.

The mediating effect of the teacher-parent communication reveals that the early childhood education learning outcomes are not likely higher when teacher and parent cooperate. The result is not in line with the previous research findings, reporting that teacher competencies represent an integral part of effective cooperation with parents (Visković & Višnjić Jevtić, 2017). Moreover, according to Epstein et al., (2002), initial teacher education is a crucial prerequisite for the acquisition of competencies for cooperation with parents. Formal education only provides teachers with the knowledge, but not with skills required for maintaining good and meaningful cooperation with parents. The result of this study suggests the need to examine the quality of teacher-parent cooperation as an initial start before examining it as a mediating factor in teacher-parent communication on the early childhood education learning outcomes.

Parental Participation Moderates Teacher-Parent Communication on the Learning Outcomes of Early Childhood Education

Furthermore, parental participation in moderating the influence of teacher-parent communication on children's learning outcomes has the t-value of $0.901 < 1.96$ and the p-value of $0.368 > 0.05$. This result shows that parental participation in their communication with teachers does not influence the children's learning outcomes. Therefore, it is concluded that parental participation does not strengthen the influence of teacher-parent communication on the children's learning outcomes. The result contradicts Fan & Chen (2001) who found that parental participation in schools is a factor that encourages children's learning outcomes.

Parents who believe that their participation in children's education affects the children's achievement in school tend to facilitate the development of their children (Ihmeideh et al., 2020; Levinthal de Oliveira Lima & Kuusisto, 2020). Parents' belief is identified as the key determinant of parental participation. The results of this research indicate that parental participation is not implemented in a way that can build communication between teachers and parents about their children's development and learning success. On the other hand, parents wants to be more involved in school but often times they lack information about school activities (Sylaj, 2021). Possible strategies may include regular communication with parents regarding the most important decisions that need to be taken from both teachers and parents. Teachers can use the parents' input in making decisions for children's academic success.

Learning outcomes are determined by many factors which are related to one another. Communication between teachers and parents is related to cooperation. However, cooperation does not affect early childhood education learning outcomes. Communication affects not only children's learning outcomes but also parental involvement. The most important factor influencing early childhood education learning outcomes is communication between teachers and parents, although this communication does not occur in a forum, organization, or school committee. The form of communication desired by the parents in direct contact with the teacher. This can happen through a contact book or a short message application. If parents feel there is a need, the teacher is expected to provide feedback. Teachers should provide parents with opportunities to talk about their children's academic problems. From the parental participation point, parents who are active in outdoor activities can increase their knowledge of the condition of their children. Therefore, they can understand any treatment the teachers give to their children. There is a demand for an active role of parents, both in communication, involvement, and cooperation. However, in reality, various obstacles occur in the process.

The results derived from this research give useful theoretical evidence to teachers and parents of early childhood and provide valid information to help in the design and implementation of the teacher-parent partnership model, which leads to an improvement in the learning outcomes of early childhood. We consider that it is necessary to deepen this kind of study in the future since most of the research has been focused on the school's perspectives. Where teacher argued to be the central point to improve learning outcomes of early childhood education. Moreover, it would be convenient to also analyze parents' role in the effort to improve learning outcomes of early childhood education.

CONCLUSION

The issue raised in this study is to measure the structural relationship between the various factors in the teacher-parent partnership, including teacher-parent communication, teacher-parent cooperation, and parent participation on the early childhood education learning outcomes Based on the research findings, we conclude that (1) the early childhood education learning outcomes are positively influenced by teacher-parent communication, (2) the early childhood education learning outcomes are

positively influenced by parental participation, (3) the teacher-parent communication positively influences teacher-parent cooperation, (4) the teacher-parent cooperation does not influence the early childhood education learning outcomes, (5) the teacher-parent communication does not mediate the influence of teacher-parent cooperation on the children's learning outcomes, and (6) the parents' participation does not moderate the influence of teacher-parent communication on the early childhood education learning outcomes.

The structural model proposes that the underlying factors from the teacher-parent partnership that strongly influence early childhood education learning outcomes are teacher-parent communication and parental participation. The results of this study can be use to improve practice of teacher and parent partnership in early childhood education setting. Schools suggested to boost teacher-parent communication in two-way form, there are cooperative communication between parents and teacher in supporting the early childhood. Teacher also recommend to create engaging acitivities for positive teacher-parent cooperation, also efforts to increase parental participation in education process. Our study theoretically also contributes to the emerging literature on early childhood education, by estimating a model for the factors affecting the early childhood learning outcomes from the perspective of teacher-parent partnership. This study, while making contributions to the early childhood education literature, is not without limitations. This study only measures learning outcomes from the parents' perspectives. Future research is suggested to conduct a comparative study to identify the relationship between factors of parent-teacher partnership and direct assessment of early childhood education learning outcomes.

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