

A Rasch Measure of Parents' Educational Expectations Scale of Kindergarten Children: Validation of the Indonesian Version

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ABSTRACT

A measurement tool intended to assess parents' expectations for their young children is needed. This paper presents the adaptation and validation of the Parents' Educational Expectations, which consists of academic, social, athletic, art, and compliance domains. The initial study included translation (forward and backwards), expert committee review, and pretesting to ensure compliance with the translation and cultural adaptation process. A total of 202 parents of kindergarten children, predominantly mothers (70,3%) and fathers (29,7%) from 7 kindergartens, completed the 32-item Indonesian version of Parents' Educational Expectations. We used quota sampling, and we analysed the data using Winsteps 3.73. Rasch analysis showed excellent item quality for the academic, social, athletic, art, and compliance domains, with values of 0.99, 0.98, 0.91, 0.94, and 0.99, respectively. The person's reliability in the academic domain was consistent (0.81), and the domain's reliability was 0.86. However, other domains have person and domain reliability scores below 0.60; therefore, these domains need further elaboration. Regarding dimensionality, all domains were unidimensional, and the present study also identified item difficulty levels in each domain.

Keywords: *Adaptation, Kindergarten children, Parents' educational expectations, Rasch analysis.*

INTRODUCTION

Parental educational expectations promote children's development (Xin & Yu, 2024; Yang, Chen, Ma, & Lei, 2025) and are a relevant predictor of children's achievement (Froiland, 2013; Pinguart & Ebeling, 2020). They strongly influence children's higher educational attainment (Lai et al., 2022). Moreover, parents' expectations regarding their children's achievement and understanding play a key role in children's performance (Francis, Prathap, & S Preetha, 2020). Parental expectations were correlated with children's approaches to learning and, when age and gender were considered, were strongly associated with early learning development (Bai, Sukumaran, Han, & Zhou, 2023). Parents' and children's academic expectations are positively related to children's cognitive development in both rural and urban samples (Liu, Zhang, Tang, Zhou, & Tian, 2022). Furthermore, parents' educational expectations for their children are associated with parental supervision, parental support, and economic investments in education (Mu & Hu, 2021).

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Parents' educational expectations refer to parents' expectations for their children, or their estimate of what children can achieve at school, based on their evaluation of their children's abilities relative to others (Francis et al., 2020). In this study, the term "parents' educational expectation" refers to parents' aspirations and beliefs about their children's abilities in relation to school study. Parental educational expectations are characterised by realistic beliefs or judgements about their children; parents consider their children's ability to achieve in school and predict the grades they will receive.

Sánchez-Sandoval et al. (2019) developed a scale to measure parents' expectations about their children's future across the domains of economic/occupational, academic, personal well-being, and family expectations. This instrument was delivered to parents of high school students. Meanwhile, Cheng (cf. Yang et al., 2025) measures parental education expectations, which include five dimensions: future development, academic performance, behavioural performance, interpersonal relationships, and physical and mental qualities, and was delivered to parents of primary school students.

Research on adapting and validating the Parents' Educational Expectations Measurement for parents of kindergarten children remains limited. Therefore, this study aims to adapt and evaluate the psychometric properties of the Educational Attitude Scale, developed by Rescorla, Hyson, Hirsh-Pasek, & Cone (1990). The scale measures five domains, namely Academic, Social, Athletic, Art, and Compliance. These domains are relevant in the Indonesian context, as Pangestuti et al. (2018) found in parents' perceptions of elementary school readiness, which encompass academic, social, and communication skills. Rezania (2019) found that parents expect children to become smart, cultivate good character and noble morals, and be passionate about education.

Research into parents' educational expectations is relatively limited in studies of kindergarten and preschool children. This study responds to those calls by using best-practice measurement in the human sciences (Rasch measurement) to develop a linear scale of parents' views of their children's educational expectations. A key limitation is that linear measures of parents' educational expectations using a Rasch measurement model remain limited. In addition, this study includes a cross-cultural adaptation step. Therefore, conducting this study offers an innovative approach to measuring parents' educational expectations for kindergarten children.

The instrument measuring parents' educational expectations, adapted from the Educational Attitude Scale, was carefully adapted and renamed the Parents' Educational Expectations Scale to ensure cultural relevance and validity.

METHOD

Ethical Consideration

This article is part of a series of studies on children's school readiness and has received approval from the Ethics Commission of the Medical/Health Bioethics Commission, Faculty of Medicine, Universitas Islam Sultan Agung. The ethics commission permit is issued under number 485/XII/2023.

Participants

Primary data were taken from 202 kindergarten parents, aged 23-53, 142 mothers and 60 fathers, from 7 kindergartens in Semarang City, Demak Regency, and Semarang Regency. Parents' educational backgrounds vary, ranging from primary school graduates to master's degree holders. The participants were recruited through convenience sampling, and all participants provided informed consent.

Design

Adaptation of the Educational Attitude Scale into Indonesian

This study followed guidelines for cross-cultural adaptation. The process has five steps: translation, synthesis, back-translation, expert committee review, and pretesting of the final version (Beaton, Bombardier, Guillemin, & Ferraz, 2000).

The items were translated from English into Bahasa Indonesia and then back-translated into English, following the cross-cultural adaptation approach proposed by Hambleton et al. (2005). Two experts from the Department of Early Childhood Education (a psychologist) and the Department of Primary School Education, both with a minimum IELTS score of 7.00, translated the instrument from English into Bahasa Indonesia. Three senior psychologists evaluated the Indonesian version, including one developmental psychologist and two educational psychologists, all of whom are also competent in cross-cultural child psychology. Following this evaluation, the Centre for International Language Development at Universitas Islam Sultan Agung, Semarang, and a translator with an IELTS score of at least 7.00 and a background in psychology back-translated the Indonesian version into English. Next, the Expert Committee review involved two kindergarten teachers, a psychologist, and two experts from two kindergartens with a psychology degree. After the review, the pre-final version was ready. The pre-final version was then distributed to 32 preschool parents to gather information on readability, meaning, interpretation, and responses to the items. This step ensures that the adapted version retains its equivalence in an applied situation.

Description of Educational Attitude Scale

The Educational Attitude Scale, developed by Rescorla et al. (1990), consists of 32 items. The instrument has five domains: academic, social, athletic, art, and compliance. Each domain includes items that reflect parents' expectations for their preschool children's skills and behaviours. Table 1 below illustrates the domains and the number of items.

Table 1. Items of The Scale

No	Domain	Items number
1	Academic	1,4,7, 10, 13, 18, 21, 23, 26, 28, 30, 32

2	Social	2, 8, 17, 24
3	Athletic	5, 12, 15, 19
4	Art	11, 22, 25, 29
5	Compliance	3, 6, 9, 14, 16, 20, 27, 31

This instrument is a 32-item Likert-type questionnaire, with all items scored on a 6-level scale ranging from “strongly agree” to “strongly disagree. The alternative responses include strongly agree, moderately agree, mildly agree, mildly disagree, moderately disagree, and strongly disagree. The scale also includes reverse-coded items. The final score of each domain is the result of the sum of the scores for each item within the domain.

Translation Process

The Parents' Educational Expectations scale, originally the Educational Attitude Scale developed by Rescorla et al. (1990), consists of 32 items. This instrument assesses academic expectations alongside parents' expectations regarding other domains of behaviour. The items of this instrument contain statements of parents' or adults' expectations of preschool children related to children's skills and behaviour.

The academic domain concerns parents' expectations regarding the skills children acquire in academic contexts. A sample item in this domain is: “I want my child to be good at counting numbers, even if she/he is not really interested in it”. The social domain concerns parents' expectations of children's ability to respond appropriately in social contexts, to develop relationships with peers, and to play cooperatively. Sample items in this domain include “It's OK with me if my preschooler isn't good at playing with other kids” and “I should work at helping my preschool child learn how to get along with other kids”. Furthermore, the athletic domain concerns parents' expectations for the skills children acquire in sport. A sample item in this domain is “I think preschool children should work at swimming”. The art domain concerns the abilities or competencies that children acquire in art. A sample item for this domain is “Preschool children aren't yet ready to learn to draw”. The last domain is compliance, which concerns social norms related to manners or attitudes in certain situations; a sample item for this domain is “Preschool children should learn to say ‘please’ and ‘thank you’ (Rescorla et al., 1990).

The items of this instrument were translated from the original scale into Bahasa Indonesia. Two experts conducted this process, then synthesised the translated versions and wrote a report on the discussion results. At this stage, the examiners checked semantics, conceptual content, idiomaticity, and linguistic accuracy. After the back-translation stage, the experts reviewed all reports and produced a pre-final version. The pretesting stage involved distributing the scale to 32 parents from 3 kindergartens to gather information on the items and how they interpreted and responded to them; then we distributed the scale to parents in 7 kindergartens by paper and pencil and online using Google Forms to reach parents from other kindergartens.

Evaluation of Psychometric Properties of Indonesian Educational Attitude Scale

We evaluated psychometric properties using Rasch analysis. First, we tested the dimensionality assumptions for each domain of parents' educational expectations and local independence. Then, we evaluated fit statistics and reliability, item and person fit, and item measures (item difficulties).

FINDINGS

Psychometric Performance

Unidimensionality

Unidimensionality concerns whether a test measures the specified latent trait (B. Wright & Stone, 1999). This assumption can be evaluated using PCA via three indicators: the Raw Variance Explained by Measures, the Unexplained Variance in the First Contrast (Bond & Fox, 2007), and the Eigenvalue.

Table 2. The Unidimensionality of Domains

Measures	Raw Variance Explained by Measure (%)	Unexplained Variance in First Contrast (%)
Value (Academic Domain)	51.0	9.2
Value (Social Domain)	51.1	18.7
Value (Athletic Domain)	37.2	24.3
Value (Art Domain)	42.2	28.4
Value (Compliance Domain)	50.1	11.7

The minimum requirement for unidimensionality, as indicated by the raw variance explained by the measures 20 per cent (Reckase, 1979; Sumintono & Widhiarso, 2014). The data showed that the raw variance explained by the measure across all domains is above 20%. Moreover, the unexplained variance did not exceed 15%, indicating that the instrument's level of item independence is satisfactory (Bond & Fox, 2015a). The findings showed that the academic and compliance domains have unexplained variance below 15%. In contrast, the social, art, and athletic domains have unexplained variance exceeding 15%. The Eigenvalue of the Academic Domain for the first contrast of unexplained variance is over 2.0, and for the 2nd- 5th contrasts are below 2.0. The Social, Athletic, Art, and Compliance domains show multidimensionality risk based on Unexplained Variance in the first contrast, but they yielded Eigenvalues below 2.0; this indicates they can be used for measurement purposes at this scale.

Local Independence

The second assumption in Rasch analysis is local independence. Table 3 below provides information on item independence.

Table 3. Local Independence for each domain of the Parents' Educational Expectations Scale

Domains of Parents Educational Expectations										
<i>Academic (n item = 12)</i>										
Correlation	0.33	0.31	-0.35	-0.34	-0.32	-0.32	-0.31	-0.3	-0.29	-0.28
Entry Number it	10 A10	5 A5	2 A2	1 A1	3 A3	5 A5	3 A3	6 A6	5 A5	6 A6
Entry Number it	12 A12	7 A7	12 A12	8 A8	9 A9	10 A10	8 A8	9 A9	9 A9	8 A8
<i>Social Domain (n item = 4)</i>										

Correlation	-0.57	-0.5	-0.26	-0.24	-0.18	-0.14	-	-	-	-
Entry Number it	1 S1	1 S1	2 S2	1 S1	3 S3	2 S2	-	-	-	-
Entry Number it	4 S4	3 S3	3 S3	2 S2	4 S4	4 S4	-	-	-	-
<i>Athletic Domain (n item = 4)</i>										
Correlation	-0.5	-0.4	-0.32	-0.31	-0.3	-0.16	-	-	-	-
Entry Number it	2 At2	1 At1	1 At1	3 At3	2 At2	1 At1	-	-	-	-
Entry Number it	3 At3	4 At4	2 At2	4 At4	4 At4	3 At3	-	-	-	-
<i>Art Domain (n item = 4)</i>										
Correlation	0.03	-0.58	-0.5	-0.47	-0.4	-0.06	-	-	-	-
Entry Number it	1 Ar1	3 Ar3	1 Ar1	1 Ar1	2 Ar2	2 Ar2	-	-	-	-
Entry Number it	4 Ar4	4 Ar4	3 Ar3	2 Ar2	4 Ar4	3 Ar3	-	-	-	-
<i>Compliance Domain (n item = 8)</i>										
Correlation	0.31	-0.37	-0.35	-0.29	-0.28	-0.27	-0.26	-0.25	-0.22	-0.21
Entry Number it	3 C3	6 C6	3 C3	4 C4	3 C3	6 C6	3 C3	4 C4	3 C3	4 C4
Entry Number it	6 C6	8 C3	4 C4	6 C6	5 C5	7 C7	8 C8	5 C5	7 C7	7 C7

Table 3 illustrates local independence, and the results showed that for all items in the Academic domain, items A10 and A12 and items A5 and A7 correlate more than 0.30 (>0.30); this means those items have local dependency. The positive or negative response for item A10 will affect the response to item A12 positively or negatively. Local dependency also occurred for items A5 and A7. The same pattern also occurred for item C3 in the Compliance domain, where a positive response affects responses to C6 and C4; this also occurs for items C6 to C8.

Items with local independence greater than 0.30 may be due to items appearing similar or to factors other than the primary one that influence respondents' answers. For example, when reviewing the statements for A5 (*I think I should work at helping my pre-school child get better at reading words*), A7 (*Parents should help their preschool children practice writing letters*), A10 (*I don't think preschool children have to work at recognizing letters*), and A12 (*Preschoolers don't have to be good at counting*), these statements serve different purposes, with A5 related to reading, A7 to writing, A10 to recognising letters, and A12 to counting. Reviewing the item content suggests that this local dependency is likely influenced by secondary factors that affect respondents' responses.

Table 4. Fit Statistics and Reliability

	Academic		Social		Athletic		Art		Compliance	
	Perso n	Item	Perso n	Item	Perso n	Item	Perso n	Item	Perso n	Item
N	202	12	202	4	202	4	202	4	202	8
<i>Measure</i>										
Mean	1.49	0.00	2.10	0.00	0.23	0.00	0.74	0.00	1.05	0.00
Standard deviation (SD)	1.18	0.84	1.63	0.89	0.86	0.24	1.20	0.36	0.66	1.08
Standard error (SE)	0.08	0.25	0.12	0.52	0.06	0.14	0.08	0.21	0.05	0.41

Outfit Mean Square										
Mean		1.10		0.99		0.99		0.97	1.07	1.07
Standard deviation (SD)		0.31		0.21		0.15		0.07	1.02	0.21
Separation	2.09	8.69	1.28	7.72	1.03	3.19	1.20	4.06	1.04	11.06
Reliability	0.81	0.99	0.62	0.98	0.52	0.91	0.59	0.94	0.52	0.99
Alpha Cronbach (KR-20)	0.86		0.52		0.40		0.50		0.47	
Chi-Square	5213.49		1387.03		2143.90		1861.02		3849.05	
p value	0.0000		0.0000		0.0000		0.0000		0.0000	

Table 4 provides information on person separation, with values ranging from 2 to less than 2. This suggests the scale items are not sufficiently varied, or that some individuals are not accurately measured by the items in this measurement tool. Meanwhile, item separation across all domains is above 3.0, indicating that participants' educational expectations vary widely, from very low to very high.

For person and item reliability, the academic domain showed a person reliability of 0.81, indicating that participants' responses were within the good range (Sumintono & Widhiarso, 2014). The items' reliability was 0.9, indicating good internal consistency (Bond & Fox, 2015), and Cronbach's alpha reached 0.86, suggesting good item-person agreement. However, person reliability for the social, athletic, art, and compliance domains was 0.62, 0.52, 0.59, and 0.52, respectively, while item reliability was 0.98, 0.91, 0.94, and 0.99, respectively. These values indicate that participants' responses were inconsistent, but the items were reliable.

This research found that Cronbach's alpha was low for several domains because inconsistent response patterns influenced it. Overall, this indicates that the Parents' Educational Expectation Scale domains can still be used.

Item Fit

The item-fit criteria are based on the Outfit mean square and point-measure correlation, given that the number of participants is less than 500 ($N < 500$). For the Outfit mean square (MNSQ) that is acceptable: $0.5 < \text{MNSQ} < 1.5$, the value of Outfit Z-Standard (ZSTD) is $-2.0 < \text{ZSTD} < +2.0$; and Point Measure Correlation (Pt Mean Corr): $0.4 < \text{Pt Mean Corr} < 0.85$ (Sumintono & Widhiarso, 2015). Point measure correlation can identify items that may not contribute to measurement (Boone & Staver, 2020). This scale is categorised as a low-stakes measurement issue, although this output can be used to identify parents' expectations for their young children.

Table 5. Item properties for five domains of the scale

No	Domain	Item	Measure (Logit)	SE	Infit mean square (MNSQ)	Outfit mean square (MNSQ)	Outfit ZSTD	Point measure correlation (PTME)
1	Academic	A1	-1.6	0.13	1.18	0.99	0.0	0.55

2		A2	0.92	0.07	1.14	1.13	1.2	0.61
3		A3	0.60	0.08	1.25	1.59	4.7	0.59
4		A4	-1.18	0.12	0.96	1.11	0.9	0.45
5		A5	-0.6	0.10	1.04	0.93	-0.5	0.60
6		A6	0.24	0.08	1.01	1.07	0.6	0.64
7		A7	-1.08	0.11	0.63	0.66	-3.1	0.60
8		A8	0.73	0.07	1.38	1.64	5.0	0.52
9		A9	0.43	0.08	1.26	1.47	3.7	0.55
10		A10	0.35	0.08	0.99	1.05	0.5	0.61
11		A11	0.75	0.07	0.64	0.67	-3.4	0.72
12		A12	0.43	0.08	0.82	0.88	-1.1	0.68
13	Mean		0.00	0.09	1.03	1.10	0.7	
14	SD		0.84	0.02	0.23	0.31	2.6	
15	Social	S1	1.18	0.08	0.86	0.87	-1.1	0.73
16		S2	-1.21	0.14	1.03	0.92	-0.6	0.58
17		S3	0.43	0.09	0.84	.82	-1.4	0.63
18		S4	-0.39	0.12	1.25	1.36	2.5	0.48
19	Mean		0.00	0.11	0.99	0.99	-0.2	
20	SD		0.89	0.02	0.16	0.21	1.5	
21	Athletics	At1	0.07	0.07	0.78	0.82	-2	0.64
22		At2	-0.27	0.07	1.24	1.24	2.3	0.48
23		At3	-0.16	0.07	1.00	0.96	-0.4	0.60
24		At4	0.36	0.07	1.00	0.96	-0.4	0.57
25	Mean		0.00	0.07	1.00	0.99	-0.1	
26	SD		0.24	0.00	0.16	0.15	1.6	
27	Art	Ar1	-0.4	0.09	1.09	1.04	0.4	0.53
28		Ar2	-0.29	0.09	0.98	0.93	-0.6	0.63
29		Ar3	0.45	0.08	1.05	1.03	0.5	0.64
30		Ar4	0.25	0.08	0.92	0.88	-1.2	0.60
31	Mean		0.00	0.08	1.01	0.97	-0.3	
32	SD		0.36	0.00	0.07	0.07	0.7	
33	Compliance	C1	-2.21	0.14	1.55	1.39	2.7	0.23
34		C2	-1.11	0.11	0.93	0.93	-0.5	0.28
35		C3	1.22	0.06	0.80	0.85	-1.7	0.60
36		C4	0.67	0.06	1.22	1.31	3.0	0.37
37		C5	-0.22	0.08	1.24	1.24	1.8	0.39
38		C6	0.12	0.07	1.07	1.08	0.7	0.41
39		C7	0.61	0.06	0.92	0.96	-0.4	0.54
40		C8	0.93	0.06	0.78	0.77	-2.8	0.59
41	Mean		0.00	0.08	1.06	1.07	0.3	
42	SD		1.08	0.03	0.24	0.21	1.9	

Item Measure (Difficulties of Items)

In addition, we analysed item difficulty level, or item measure, to assess each item's difficulty. Table 6 below provides information regarding the item measure.

Table 6. Item measure of the five domains of the scale

Domain	Item													
<i>Academic</i>	1	2	3	4	5	6	7	8	9	10	11	12	Mean	SD
Item	A2	A11	A8	A3	A12	A9	A10	A6	A5	A7	A4	A1		
Total score	811	842	846	869	898	899	912	928	1033	1075	1083	1111	942.4	100.4
Measure (Logit)	0.92	0.75	0.73	0.60	0.43	0.43	0.35	0.24	-0.6	-1.08	1.18	-1.6	0.00	0.84
<i>Social</i>	1	2	3	4	Mean	SD								
Item	S1	S3	S4	S2	-	-	-	-	-	-	-	-	-	-
Total score	870	978	1052	1100	1000	0.00	-	-	-	-	-	-	-	-
Measure (Logit)	1.18	0.43	-	-	86.7	0.89	-	-	-	-	-	-	-	-
<i>Athletic</i>	1	2	3	4	Mean	SD								
Item	At4	At1	At3	At2	-	-	-	-	-	-	-	-	-	-
Total score	661	722	769	792	736.0	50.1	-	-	-	-	-	-	-	-
Measure (Logit)	0.03	0.07	-	-	0.00	0.24	-	-	-	-	-	-	-	-
<i>Art</i>	1	2	3	4	Mean	SD								
Item	Ar3	Ar4	Ar2	Ar1	-	-	-	-	-	-	-	-	-	-
Total score	780	812	890	904	846.5	52.0	-	-	-	-	-	-	-	-
Measure (Logit)	0.45	0.25	-	-	0.00	0.36	-	-	-	-	-	-	-	-
<i>Compliance</i>	1	2	3	4	5	6	7	8	Mean	SD				
Item	C3	C8	C4	C7	C6	C5	C2	C1	-	-	-	-	-	-
Total score	667	742	808	822	926	980	1075	1146	895.8	154.9	-	-	-	-
Measure (Logit)	1.22	0.93	0.67	0.61	0.12	0.22	-	-	0.00	1.08	-	-	-	-

Based on the data in Table 6, items A2, S1, Ar3, and C3 are very difficult to agree on (more than 1 SD). There are three items categorised as hard-to-agree items, namely A3, A6, A8, A9, A10, A11, A12, S3, At1, At4, Ar4, C4, C6, C7, and C8 (0.0 logit +1SD). Meanwhile, items classified as easy are A5, S4, At3, Ar2, and C5 (0.0 logit-1SD), and A1, A4, A7, S2, At2, Ar1, C1, and C2 (less than -1SD), which were very easily agreed by the participants.

Person Fit

Boone et al. (2014) proposed the criteria of person fit by considering the value of Outfit Mean Square (MNSQ), which is accepted: $0.5 < \text{MNSQ} < 1.5$; the value of Outfit Z-Standard (ZSTD), which is accepted in the range: $-2.0 < \text{ZSTD} < +2.0$, and the value of Point Measure Correlation (Pt Mean Corr): $0.4 < \text{Pt Measure Corr} < 0.85$. Table 7 below provides information regarding a person fit in the academic, social, athletic, art, and compliance domains.

Table 7. Person Fit of the domains of the scale

Domain	SD	Mean	Outfit MNSQ	Outfit ZSTD	Pt Mean Corr
Academic	0.89	1.10	0.22 - 5.73	-2.8 - 5.5	-0.21 - 0.90
Social	1.15	0.97	0.04 - 9.90	-2.0 - 5.0	-0.90 - 0.95
Athletic	0.86	0.99	0.03 - 6.88	-3.5 - 3.7	-0.89 - 1.00
Art	1.12	0.97	0.03 - 9.14	-3.3 - 4.3	-0.73 - 0.97
Compliance	1.02	1.07	0.18 - 9.90	-2.2 - 7.5	-0.77 - 0.96

The analysis results for the Person-Fit Order of academic, social, athletic, art, and compliance, as described in Table 7, showed that several persons had an unfit response pattern.

DISCUSSION

We conducted a Rasch analysis to investigate the psychometric properties of the five domains of the Parents' Educational Expectation Scale. PCA and eigenvalue analysis indicated that each domain construct measured only one trait. Information on the psychometric properties of the Parents' Educational Expectations Scale for each domain supports use of this instrument.

In addition, Table 2 indicates that the academic and compliance domains have unexplained variance below 15%. In contrast, the social, art, and athletic domains exhibit variability that this instrument cannot explain beyond 15%. The Eigenvalue of the Academic Domain for the unexplained variance in the 1st contrast is over 2.0, and for the 2nd contrast to the 5th contrast is below 2.0. The Social, Athletic, Art, and Compliance domains yielded Eigenvalues below 2.0, indicating that the instrument is still useful for measuring those domains.

Two statistics that assess both item and person fit are INFIT (information-weighted fit) and OUTFIT (outlier-sensitive fit) (Linacre, 2002). Fit statistics are commonly reported as mean-squared (MNSQ) and z-standardised (ZSTD). MNSQ is the mean of the squared residuals for an item. Unlike MNSQ, ZSTD is a standardised form that transforms the mean-squared value with a sample-size correction (Bond & Fox, 2007). The ZSTD is sample-size dependent, but MNSQ is "sample-size independent when the noise in the data is spread evenly across the population" (Linacre, 2002). Therefore, in this research, we are not considering ZSTD to assess five domains of the PEE Scale when the sample size is less than 500. To evaluate misfits, Boone, Staver, & Yale (2014) recommend examining MNSQ outfits first. (B. D. Wright & Linacre, 1994) contend that MNSQ values less than 1.30 are acceptable for multiple-choice tests that are not high stakes. The data from the academic, social, athletic, art, and compliance domains in this research (Table 5) showed that, for item fit, the values are acceptable except for A3, A8, S4, and C4 (1.59, 1.64, 1.36, and 1.31, in sequence). However, for the person-fit order, the analysis showed that several participants had an unfit response pattern.

Furthermore, all items across five domains contribute to the measurement of Parents' Educational Expectations, as shown by the Point measure correlations ranging from 0.45 to 0.72, 0.48 to 0.73, 0.48 to 0.64, and 0.53 to 0.64, respectively, for the academic, social, athletic, and art domains. In the compliance domain, three items (C1, C2, C4, and C5) fell below 0.40; the rest ranged from 0.41 to 0.60. It can be concluded that all items, except four items in the compliance domain, with Point-measure correlations under .40, contribute to the purpose of measurement.

Based on the findings, the Infit MNSQ and Outfit MNSQ for items in the academic, social, athletic, art, and compliance domains are within the acceptable range, as proposed, and indicate a good model fit. Most are close to 1.00, and Engelhard (2013) contended that an item fits the Rasch model when both Infit MNSQ and Outfit MNSQ are close to the expected value (1.00). Moreover, the reliability coefficients for those domains are 0.99, 0.98, 0.91, 0.94, and 0.99, respectively, indicating high item quality in each domain. Based on this evidence, the academic, social, athletic, art, and compliance domains are convincing measures of parents' educational expectations. The academic domain has good reliability (KR-20); however, the social, athletic, art, and compliance domains showed Cronbach's alpha (KR-20) below 0.60. Therefore, these findings warrant further elaboration in future research.

Implication of The Study

This study has implications for preschool institutions. Information regarding parents' expectations for measuring the academic domain, which has been adapted and validated, indicates good psychometric properties.

Limitation and Suggestion

This present study had several limitations. First, self-report questionnaires are prone to bias (Podsakoff, MacKenzie, & Podsakoff, 2012), which could influence the accuracy of the findings. Second, the research sample consisted of parents from a similar culture and the sampling technique used was convenience sampling, which has greater potential for bias; future studies should aim to include parents from diverse backgrounds.

CONCLUSION

This study evaluated the cross-cultural adaptation and validation of the Parents' Educational Expectations, which consists of academic, social, athletic, art, and compliance domains, into an Indonesian version of the Educational Attitude Scale using Rasch analysis. This study provides evidence that this scale has adequate psychometric properties, especially for the academic domain. All domains show very good to excellent item reliability; however, the social, athletic, art, and compliance domains require further study, particularly regarding person reliability. The item separation index across all domains indicates that participants varied widely in their educational expectations, ranging from very low to very high. This work aims to support early childhood practitioners by offering alternative ways to measure parental expectations regarding children's education.

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