International Journal of Education, Vocational and Social Science
https://e-journal.citakonsulindo.or.id/index.php/IJEVSS
E-ISSN : 2963 4954
IJEVSS

The Effect of Family Assistance Team (TPK) Cadres' Self-Efficacy on Stunting-Risk Family Assistance Effectiveness in Temanggung District

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abstract

This study examined the association between Family Assistance Team (Tim Pendamping Keluarga/TPK) cadres' self-efficacy and their perceived effectiveness in assisting families at risk of stunting in Temanggung District. Previous studies have addressed cadre training, knowledge, and capacity, but fewer have directly examined the association between self-efficacy and perceived assistance effectiveness in this local context. A quantitative cross-sectional survey was conducted with 130 cadres selected from a population of 192 using Slovin's formula and simple random sampling. Data were collected by questionnaire in October 2026 and analyzed using descriptive statistics and simple linear regression. Self-efficacy was positively associated with perceived assistance effectiveness (B = 0.906, p < 0.001), and the model explained 67.5% of score variation (R^2 = 0.675). The association remained significant using HC3 robust standard errors (SE = 0.082; t = 11.03; 95% CI [0.743, 1.068]). The findings suggest that practical guidance, supportive supervision, and opportunities to practise problem-solving may be useful components of cadre development. Because the study was cross-sectional and both measures were self-reported, the result indicates association rather than causation.

Keywords: self-efficacy; TPK cadres; assistance effectiveness; stunting; Temanggung

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INTRODUCTION

Stunting prevention requires more than health services: families also need accessible information, follow-up, and support adapted to their circumstances. Joint estimates from UNICEF, WHO, and the World Bank indicate that 150.2 million children under five (23.2%) were affected by stunting worldwide in 2024 (WHO, UNICEF, & World Bank Group, 2025). Community-based workers can connect households with services through education, monitoring, home visits, and referrals (Miranda et al., 2023).

In Indonesia, the Family Assistance Team (Tim Pendamping Keluarga/TPK)—comprising midwives, PKK cadres, and family-planning cadres or extension workers—supports efforts to accelerate stunting reduction (BKKBN, 2021). Cadres must communicate clearly, identify family needs, encourage service use, and coordinate with local partners. Yet community health workers may face heavy workloads, uneven training, limited supervision, and unclear role boundaries (Miranda et al., 2023; Nida et al., 2024). Sripanggung records show 7,931 assistance entries in Temanggung District from January to September 2026: 168 for prospective brides and grooms, 1,150 for pregnant women, 746 for women in childbirth, and 5,867 for mothers with children under two (Sripanggung, 2026). These figures describe recorded activity, but do not establish whether follow-up was timely, education understood, referrals completed, or coordination effective. Assistance effectiveness therefore needs to be considered alongside activity counts.

Self-efficacy—the belief that one can organize and perform actions required in a situation—may shape effort, persistence, and responses to difficulty (Bandura, 1997, 2004). For TPK cadres, confidence may help them continue through complex tasks, but it cannot substitute for competence, resources, organizational support, or favorable family circumstances. Earlier studies have examined cadre training and efficacy (Haryanti et al., 2021), capacity strengthening (Manalu et al., 2024), and TPK cadres' knowledge and self-efficacy (Tsuroyya et al., 2025). Other research connects self-efficacy with workplace behavior (Fida et al., 2025) and cadre participation in stunting prevention (Andriyani & Werdani, 2021). Research also identifies practical skill gaps and the workload and personal costs borne by cadres (Widiasih et al., 2025; Miranda et al., 2025). Together, these findings suggest that confidence should be considered alongside capacity and working conditions.

This study addresses a local empirical gap by testing whether TPK cadres with higher self-efficacy scores also report more effective assistance to families at risk of stunting in Temanggung District. The focus is the association between a personal belief and a perceived implementation outcome, not a claim that self-efficacy is the sole determinant of effective assistance.

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LITERATURE REVIEW

Self-Efficacy of TPK Cadres

Bandura (1997) describes self-efficacy through level (the difficulty of tasks a person believes they can manage), generality (whether confidence extends across tasks and situations), and strength (how firmly confidence persists under obstacles). In this study, six items assessed confidence in entering Sripanggung data under high workloads, responding to application updates, recording information during network interruptions, explaining nutrition data, retrying failed submissions, and completing reports on time. Scores thus reflect confidence in these selected tasks rather than every interpersonal skill required for family assistance.

Social cognitive theory situates self-efficacy alongside goals, expected outcomes, and environmental barriers or support (Bandura, 2004). Practice, feedback, and training can help cadres build confidence; studies have reported improvements in cadre knowledge, attitudes, and efficacy following training and have highlighted the value of capacity-building and collaboration (Haryanti et al., 2021; Manalu et al., 2024). Self-efficacy should not be treated as interchangeable with knowledge or actual skill. Accordingly, self-efficacy in this study means cadres' reported confidence in completing the six task-related activities represented in the questionnaire, particularly when workload or practical obstacles arise.

Effectiveness of Assistance to Families at Risk of Stunting

Perceived assistance effectiveness refers to cadres' assessment of how well their activities support families at risk of stunting. Relevant activities include prioritizing visits, providing education, facilitating referrals and interventions, and coordinating with midwives and community health centers. National guidance and research on community health workers emphasize role clarity, training, supervision, coordination, and institutional support (BKKBN, 2021; Miranda et al., 2023; Nida et al., 2024).

Previous studies have examined TPK assistance in relation to stunting-prevention behavior (Hernayanti et al., 2025), implementation strategies (Sukmawati et al., 2024), and empathetic communication (Khairani et al., 2026). Partnership performance may also relate to motivation, competence, training, coordination, and public trust (Kismoyo & Wiandani, 2026). These studies illuminate implementation but do not directly test the relationship examined here.

The six effectiveness items asked whether supplementary food assistance matched risk recommendations, data helped prioritize visits, education increased parental awareness, referrals were facilitated, assistance contributed to prevention, and cadres coordinated with midwives and

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community health centers. The score represents cadres' perceptions of selected implementation aspects; it does not measure stunting prevalence or independently verify outcomes for each family. Effectiveness is therefore understood as multidimensional and shaped by cadre effort, practical capacity, organizational resources, service access, coordination, and family responses. A cadre's perception that assistance contributes to prevention is not proof of a causal reduction in stunting.

The Relationship Between Self-Efficacy and Assistance Effectiveness

Self-efficacy may support effort, persistence, and adaptive responses when tasks become difficult (Bandura, 1997, 2004). Cadres who believe they can manage assigned duties may be more likely to begin tasks, seek alternatives when problems arise, and continue until completion. Nevertheless, confidence does not guarantee success; skills, resources, supervision, and environmental conditions also matter. A positive association is theoretically plausible in TPK work. Here, self-efficacy items emphasize digital tasks and reporting, while effectiveness items address perceived family-assistance activities. The analysis therefore tests the association between these specific measures and interprets the result within their scope.

Empirical Evidence and Research Position

Studies of stunting prevention report that self-efficacy may be strengthened through family-based interventions and training in web-based communication media (Setiawan et al., 2026; Yuliati et al., 2025). Other work highlights appropriate technology, cadre capacity, interpersonal communication, and empathetic communication as relevant to community prevention (Sunarsih et al., 2026; Syamsuddin et al., 2025; Khairani et al., 2026). These studies provide context but do not establish that TPK cadres' self-efficacy is associated with their perceived assistance effectiveness.

Prior research has focused variously on training, knowledge, self-efficacy, communication, and implementation capacity (Haryanti et al., 2021; Manalu et al., 2024; Tsuroyya et al., 2025; Hernayanti et al., 2025). The present study complements this work by testing the relationship between cadres' self-efficacy and perceived assistance effectiveness in Temanggung District.

RESEARCH METHOD

Research Approach and Design

A quantitative cross-sectional explanatory design examined the association between self-

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efficacy (X) and perceived assistance effectiveness (Y). Both constructs were measured numerically, and their relationship was tested statistically.

Population and Sample

The population comprised 192 TPK cadres across 25 villages and urban wards in Temanggung District. The sample size was calculated using Slovin's formula with a 5% margin of error:

$$n = \frac{N}{1 + Ne^2}$$

Where
n = sample size,
N = population size, and
e = margin of error.

For N = 192 and e = 0.05, the estimate was 129.73, rounded to 130 respondents.

$$n = \frac{192}{1 + (192)(0,05)^2}$$

$$n = \frac{192}{1,48} = 129,73$$

Respondents were selected using simple random sampling, giving each member of the population an equal chance of selection.

Data Collection and Instrument

Primary data were collected through a Google Forms questionnaire in October 2026. The instrument used a five-point Likert scale and included six self-efficacy items and six perceived assistance-effectiveness items. Self-efficacy items represented Bandura's (1997) dimensions of level, generality, and strength; effectiveness items covered selected implementation activities.

Instrument Validity and Reliability

The questionnaire was piloted with 25 TPK cadres who were excluded from the main

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sample. Item validity was assessed using Corrected Item-Total Correlation and internal consistency using Cronbach's alpha. Pilot results informed review of item clarity and relevance before the main survey. The final scales were used to calculate total scores for the association analysis. Reliability in the main sample was assessed for both constructs and is reported with the descriptive results.

Data Analysis

Descriptive statistics summarized respondent characteristics and scale scores. Simple linear regression tested the association between self-efficacy and perceived assistance effectiveness using $Y = a + bX + \varepsilon$, where Y is the effectiveness score, a is the constant, b is the regression coefficient, X is self-efficacy, and ε is the error term. Model checks considered linearity, residual normality, homoscedasticity, and independence. Statistical significance was assessed at $\alpha = 0.05$. HC3 heteroskedasticity-consistent standard errors were used as a robustness check when interpreting the coefficient.

Result

Respondent Characteristics

The analysis included 130 respondents who completed all 12 scale items and represented 25 villages and urban wards. The largest age group was 50–59 years (42.3%), followed by 40–49 years (31.5%). Most had senior high/vocational education (56.9%), more than four years of cadre service (56.9%), attended TPK training (96.2%), and participated in digital/online training (84.6%).

Table 1. Respondent characteristics (n = 130)

Characteristic	Category	n	%
Age	< 30 years	3	2,3
	30–39 years	17	13,1
	40–49 years	41	31,5
	50–59 years	55	42,3
	≥ 60 years	14	10,8
Education	SD	4	3,1
	Junior high school	18	13,8
	Senior high/vocational school	74	56,9
	Diploma/Bachelor's degree	34	26,2

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Characteristic	Category	n	%
Years as a cadre	< 1 year	5	3,8
	1–2 years	10	7,7
	3–4 years	41	31,5
	> 4 years	74	56,9
TPK training	Yes	125	96,2
	No	5	3,8
Digital/online training	Yes	110	84,6
	No	20	15,4

Mean self-efficacy was 24.72 (SD = 3.23) and mean perceived assistance effectiveness was 25.10 (SD = 3.56), on a possible range of 6–30. Per-item means were 4.12 and 4.18, respectively. Main-sample Cronbach's alpha was 0.881 for self-efficacy and 0.931 for perceived assistance effectiveness.

Table 2. Descriptive statistics and internal reliability

Variable	Number of items	Total mean	SD	Mean per item	Cronbach's alpha
Self-efficacy (X)	6	24,72	3,23	4,12	0,881
Assistance effectiveness (Y)	6	25,10	3,56	4,18	0,931

Simple linear regression yielded a positive self-efficacy coefficient (B = 0.906). The model was significant, F (1, 128) = 265.48, $p < 0.001$, with $R^2 = 0.675$; thus, 67.5% of observed variation in perceived effectiveness scores was accounted for by the one-predictor model. Residuals deviated from normality on the Shapiro–Wilk test ($p < 0.001$). The Breusch–Pagan test did not indicate statistically significant heteroskedasticity ($p = 0.088$). With HC3 robust standard errors, the coefficient remained significant (SE = 0.082, $t = 11.03$, $p < 0.001$, 95% CI [0.743, 1.068]).

Table 3. Simple linear regression results with HC3 robust standard errors

Predictor	*b*	SE robust HC3	*t*	*p*	95% CI
Constant	2,719	2,080	1,307	0,194	−1,397 to 6,834
Self-efficacy (X)	0,906	0,082	11,030	< 0,001	0,743 to 1,068
Model summary	R^2 = 0,675	R^2 terkoreksi = 0,672	*F* = 265,48	*p* < 0,001	*n* = 130

Note. X and Y are total scores based on six items each. HC3 robust standard errors were used as a robustness check. Given the cross-sectional design and self-reported measures, the coefficient

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indicates association, not causation.

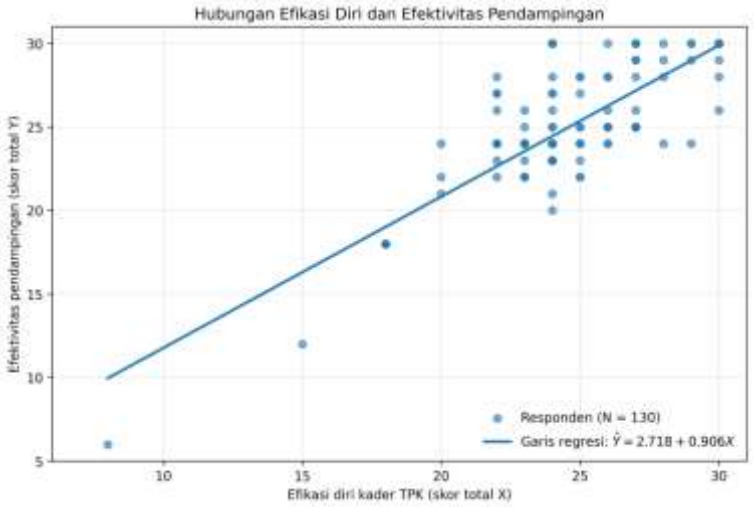


Figure 1. Scatterplot and regression line

The scatterplot shows that higher self-efficacy scores tended to accompany higher perceived assistance-effectiveness scores, consistent with the positive coefficient. It illustrates association, not causation.

DISCUSSION

Self-efficacy was positively associated with perceived assistance effectiveness (B = 0.906; HC3 SE = 0.082; $p < 0.001$). A one-point difference in self-efficacy score corresponded to an estimated 0.906-point difference in effectiveness score. The model explained 67.5% of score variation, but this does not mean self-efficacy alone determines effectiveness; practical competence, workload, service access, organizational support, and family responses were not included as predictors. The result is consistent with social cognitive theory, which links efficacy beliefs to effort, persistence, and responses to obstacles (Bandura, 1997, 2004). In this setting, confidence may help cadres continue entering reports in Sripanggung, respond to application updates or network interruptions, and retry unsuccessful submissions. Because several self-efficacy items concern digital reporting, the finding should be interpreted as an association between the measured task-specific confidence and cadres' perceptions of assistance effectiveness—not as a complete measure of interpersonal capability. The finding complements

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studies of cadre training and efficacy (Haryanti et al., 2021), self-efficacy among TPK cadres (Tsuroyya et al., 2025), and cadre capacity strengthening (Manalu et al., 2024). It adds subdistrict-level evidence that cadres reporting greater confidence also tended to report more effective assistance. It does not exclude other explanations or establish direction of causality.

The sample largely comprised experienced cadres, and most had attended TPK and digital training. This profile provides context for the favorable mean scores but does not itself explain the relationship. The result is based on self-reports and may be affected by shared-method bias or respondents' interpretation of the items. Although residual normality was not supported, the coefficient remained significant with HC3 robust standard errors. Robust standard errors do not correct every possible model limitation; therefore, findings should be interpreted cautiously. Future studies could combine questionnaire data with field observations and assistance records and include organizational and contextual predictors.

CONCLUSION

Among 130 TPK cadres in Temanggung District, higher self-efficacy scores were associated with higher perceived effectiveness of assistance to families at risk of stunting ($B = 0.906$, $p < 0.001$; $R^2 = 0.675$). The finding supports attention to task-specific confidence alongside practical competence, workload, and organizational support. Cadre development may include hands-on technical guidance, supportive supervision, problem-solving practice, and better coordination. Because the study was cross-sectional and used self-reported measures, it cannot establish causation. Future research should combine self-reports with field observations and service records.

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