Family-based Development Model

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Abstract. Family has become the foundation of the achievement of development goals, global security and world prosperity for Indonesian generations. It is evidently necessary to formulate a family-based development model. This study aims to analyze 1) the indicators of factors affecting family resilience and adaptability, 2) the influence of social, cultural, economic, environmental and security factors to family adaptability. The research method used was Structural Equation Modeling. Data was obtained from mothers and children of 482 families in Pasuruan Regency. Data analysis employed smart Part Least Square (smart PLS). The result showed that 1) social variable positively and significantly affected family resilience, 2) social variable positively and significantly affected family adaptability, 3) economic variable had no significant effect on family resilience, 4) economic variable negatively and significantly affected family adaptability, 5) Cultural variable positively and significantly affected family resilience, 6) Cultural variable did not significantly affect family adaptability, 7) Environmental variable positively and significantly affected family resilience, 8) Environmental variable had no significant effect on family adaptability, 9) The family security variable positively and significantly affected family adaptability. This research concludes that family resilience is a strong mediator through social, cultural and environmental variables in dealing with family adaptability. The positive relationship between family resilience and adaptability shows that the policy is implementing gender and development (GAD) paradigm.

Keywords: Family Resilience, Family Adaptability, Women in Development (WID), Gender in Development (GID), Gender and Development (GAD).

1 Introduction

Family is the smallest unit of a society. Family development will create a quality family living in a healthy environment, characterized by being prosperous, healthy, progressive, independent, having an ideal number of children, forward-looking, responsible, harmonious and devoted to God [1].

Family-based development must be conducted professionally and optimally. The concept of family-based development must be socialized as early as possible. It may begin with an improvement in education and training, which results in productive human resources capable to manage existing potential and resources. Family-based development shall maintain socio-cultural values and the context of local wisdom.

Family-based development in Pasuruan Regency refers to the system model by White and Klein [2], incorporating the individual model by Hill and Duvall [3]. Pasuruan Regency not only puts forward secular social values, including the level of education, health, economy and so on, it also considers religious values important. Hence the needs for an in-depth study of how secular values are integrated with religious values and how integrated values penetrate

and are internalized in a family. How successful the internalization of these values is measured by utilizing development indicators such as HDI, participation rates, MMR/IMR, unemployment rates, and regional economic growth.

The number of households in Pasuruan Regency in 2017 was 438,580 (East Java BPS, 2017). This large number places Pasuruan Regency in the sixth place out of 38 Regencies/Cities in East Java.

2 Research Objectives

a) To analyze the indicators of social, economic, cultural, environmental, family resilience and family adaptability variables.
b) To analyze the relationships among social, economic, cultural, environmental variables on family resilience.
c) To analyze the effect of the relationships among social, economic, cultural, environmental and family resilience variables on family adaptability.
d) To formulate a family-based development model.

3 Research methods

This research used structural equation modeling, requiring a theory-based conceptual model to be tested. The model resulted from the literature review is presented below:

3.1 Theory-based model
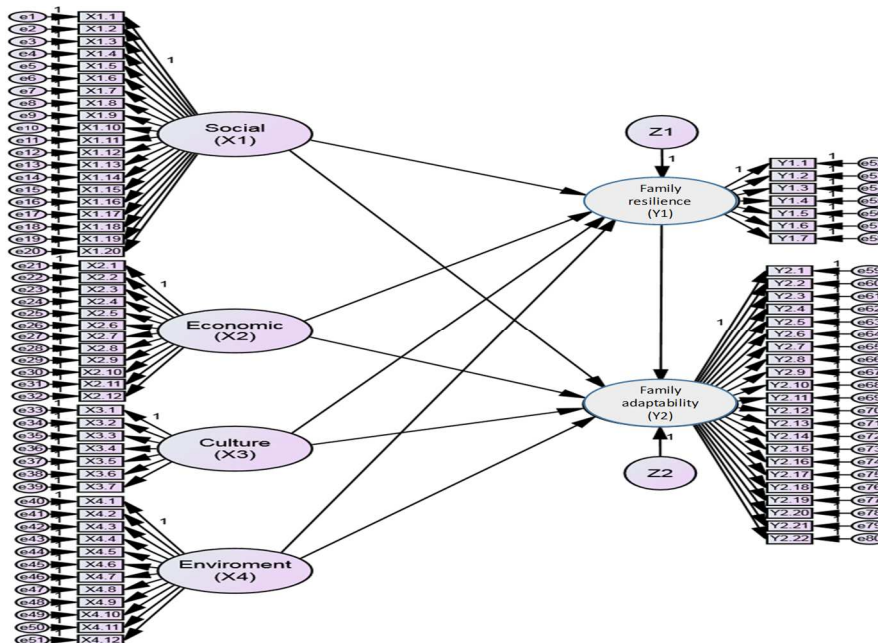
3.2 Research Design

This study used an explanatory research design which provides an elaboration of the causal relationship among variables through hypotheses testing using a quantitative approach. Causal relationships occur between 2 or more variables [4]–[6].

3.2.1 Population, Sample and Sample Selection Technique

a) Population and Sample

The population in this study included all residents of Pasuruan Regency. The sample included mothers and children and sub-district heads from each district in Pasuruan Regency. According to Ferdinand [7], the total sample is the number of indicators multiplied by 5-10. The number of indicators was 80. The minimum total of samples was 80 x 5 = 400.

b) Sample Selection Technique

The sample selection used stratified random sampling based on the number of villages in each sub-district. The composition of samples per each district according to the modification formula, between the minimum sample size for structural and strata model is described as follows:

Sample Percentage = (number of villages per sub-district: total number of villages) x 100%
Minimum number of samples = 5 x number of indicators = 5 x 80 = 400 people
Number of samples per district = percentage of samples x minimum number of samples
Total number of villages = 366

The number of questionnaires filled out by 482 respondents indicated that the number of respondents had fulfilled the rule as it exceeded the minimum number of samples.

3.3 Classification of Research Variables

This study discusses five types of variables, including:
a) Social Variable (X_1), as an exogenous variable (*Independent Variable*)
b) Economic Variable (X_2), as an exogenous variable (*Independent Variable*)
c) Economic Variable (X_3), as an exogenous variable (*Independent Variable*)
d) Environmental Variable (X_4), as an exogenous variable (*Independent Variable*)
e) Family resilience Variable (Y_1), as an endogenous variable (*Dependent variable*)
f) Family adaptability Variable (Y_2), as an endogenous variable (*Dependent variable*)

3.3.1 Operational Variable Definition

a) Social (X_1)
Social Variable (X_1), was measured by utilizing 20 indicators, including security ($X_{1.1}$), peace ($X_{1.2}$), hope for a better future ($X_{1.3}$), prosperity ($X_{1.4}$), Health ($X_{1.5}$), Progress ($X_{1.6}$), Independence ($X_{1.7}$), Ideal number of children ($X_{1.8}$), Responsibility ($X_{1.9}$), Harmonious living ($X_{1.10}$), Devotion ($X_{1.11}$), Self-reliance ($X_{1.12}$), physical and mental happiness ($X_{1.13}$),

education ($X_{1.14}$), spiritual ($X_{1.15}$), division of roles ($X_{1.16}$), support for progress ($X_{1.17}$), family time ($X_{1.18}$), social interaction ($X_{1.19}$), and problem solving ($X_{1.20}$).

Each indicator was a measurement of the responses or opinions of respondents (mothers, children and village and sub-district officials/staff) recorded in the questionnaire. Measurement of these indicators used an interval scale with a score of 1-10.

b) Economic (X_2)

Economic variable (X2) was measured by utilizing 12 indicators, including salary ($X_{2.1}$), bonus ($X_{2.2}$), savings ($X_{2.3}$), livelihood ($X_{2.4}$), job opportunity ($X_{2.5}$), unemployment ($X_{2.6}$), entertainment ($X_{2.7}$), clothing ($X_{2.8}$), food ($X_{2.9}$), home ($X_{2.10}$), transportation ($X_{2.11}$), business state ($X_{2.12}$),

c) Cultural (X3)

Cultural variable (X_3) was measured by utilizing 7 indicators, including family's capability to overcome non-physical problems ($X_{3.1}$), physical emotional control ($X_{3.2}$), positive self-image ($X_{3.3}$), spousal care ($X_{3.4}$), children respecting parents ($X_{3.5}$), work ethic ($X_{3.6}$), positive activities ($X_{3.7}$).

d) Environmental (X4)

Environmental variable (X_4) was measured by utilizing 12 indicators, including family's capability in dealing with air quality ($X_{4.1}$), water quality ($X_{4.2}$), soil quality ($X_{4.3}$), forest quality ($X_{4.4}$), beach, sea quality ($X_{4.5}$), rice field quality ($X_{4.6}$), superior product quality ($X_{4.7}$) disasters ($X_{4.8}$), waste generation ($X_{4.9}$), waste management ($X_{4.10}$), refuse generation ($X_{4.11}$), refuse management ($X_{4.12}$)

e) Family resilience (Y1)

Family resilience variable (Y_1) was measured by utilizing 7 indicators, including trying to do something for others ($Y_{1.1}$), doing and walking together ($Y_{1.2}$), family maintenance ($Y_{1.3}$), creating a positive atmosphere ($Y_{1.4}$), protecting shared dignity and celebrating life together ($Y_{1.5}$), the ability of individuals or families to explore their potential to face life's challenges ($Y_{1.6}$), the ability of families to manage problems utilizing the resources they have to meet needs ($Y_{1.7}$).

f) Family adaptability (Y2)

Family adaptability variable (Y_2) was measured by utilizing 22 indicators, including: No abandoned <5-year-old children ($Y_{2.1}$), no abandoned children ($Y_{2.2}$), no 'bad' children ($Y_{2.3}$), no homeless children ($Y_{2.4}$), no socially and economically vulnerable women ($Y_{2.5}$), no victims of violence ($Y_{2.6}$), no abandoned elderly people ($Y_{2.7}$), no abandoned, disabled family members ($Y_{2.8}$), no unemployed family members ($Y_{2.9}$), no beggars in the family ($Y_{2.10}$), no homeless family members ($Y_{2.11}$), no ex-convicts ($Y_{2.12}$), no drug abuse ($Y_{2.13}$), no poor family members ($Y_{2.14}$), no family members living in unhabitable homes ($Y_{2.15}$), no family members with social and psychological problems ($Y_{2.16}$), no remote indigenous communities ($Y_{2.17}$), no victims of natural disasters ($Y_{2.18}$), no victims of social disasters/refugees ($Y_{2.19}$), no migrant workers with social problems ($Y_{2.20}$), no family members with HIV/AIDS ($Y_{2.21}$), no vulnerable family members ($Y_{2.22}$).

3.4   Research Instrument

3.4.1 Type of Instrument

The instrument used in this study was a questionnaire with answers in the interval data scale of 1 to 10 as shown in the following table:

Table 1. Family-Based Development Research Questionnaire

	Indicator (Quantitative)	1	2	3	4	5	6	7	8	9	10
I	Social (X1)										
1	Security (X1.1)										
2	Peace (X1.2)										
3	Hope for a better future in realizing physical well-being and inner happiness (X1.3)										
4	Prosperity (X1.4)										
5	Health (X1.5)										
6	Progress (X1.6)										
7	Independence (X1.7)										
8	Ideal number of children (X1.8)										
9	Responsibility (X1.9)										
10	Harmonious living (X1.10)										
11	Devotion (X1.11)										
12	Self-reliance (X1.12)										
13	Physical/mental happiness (X1.13)										
14	Education (X1.14)										
15	Spiritual (X1.15)										
16	Division of roles (X1.16)										
17	Support for progress (X1.17)										
18	Family time (X1.18)										
19	Social interaction (X1.19)										
20	Problem solving (X1.20)										
II	Economic (X2)										
1	Salary (X2.1)										
2	Bonus (X2.2)										
3	Savings (X2.3)										
4	Livelihood (X2.4)										
5	Job opportunity (X2.5)										
6	Unemployment (X2.6)										
7	Entertainment (X2.7)										
8	Clothing (X2.8)										
9	Food (X2.9)										
10	Home (X2.10)										
11	Transportation (X2.11)										
12	Business state (X2.12)										
III	Cultural (X3)										
1	Family's capability to overcome non-physical problems (X3.1)										
2	Physical emotional control (X3.2)										

3	Positive self-image (X3.3)									
4	Spousal care (X3.4)									
5	Children respecting parents (X3.5)									
6	Work ethic (X3.6)									
7	Positive activities (X3.7)									
IV	Environmental (X4)									
1	Air quality (X4.1)									
2	Water quality (X4.2)									
3	Soil quality (X4.3)									
4	Forest quality (X4.4)									
5	Beach, sea quality (X4.5)									
6	Rice field quality (X4.6)									
7	Superior product quality (X4.7)									
8	Disaster (X4.8)									
9	Waste generation (X4.9)									
10	Waste management (X4.10)									
11	Refuse generation (X4.11)									
12	Refuse management (X4.12)									
V	Family resilience									
1	Trying to do something for others (Y1.1)									
2	Doing and walking together (Y1.2)									
3	Family maintenance (Y1.3)									
4	Creating a positive atmosphere (Y1.4)									
5	Protecting shared dignity and celebrating life together (Y1.5)									
6	The ability of individuals or families to explore their potential to face life's challenges (Y1.6)									
7	The ability of families to manage problems utilizing the resources they have to meet needs (Y1.7)									
VI	Family security									
1	There are no abandoned <5-year-old children (Y2.1)									
2	There are no abandoned children (Y2.2)									
3	There are no 'bad' children (Y2.3)									
4	There are no homeless children (Y2.4)									
5	There are no socially or economically vulnerable women (Y2.5)									
6	There are no victims of violence (Y2.6)									

7	There are no abandoned elderly people (Y2.7)										
8	There are no abandoned, disabled family members (Y2.8)										
9	There are no unemployed family members (Y2.9)										
10	There are no beggars in the family (Y2.10)										
11	There are no homeless family members (Y2.11)										
12	There are no ex-convicts (Y2.12)										
13	There is no drug abuse in the family (Y2.13)										
14	There are no poor family members (Y2.14)										
15	There are no family members in uninhabitable homes (Y2.15)										
16	There are no family members with social/psychological problems (Y2.16)										
17	There are no remote indigenous communities (Y2.17)										
18	There are no victims of natural disasters (Y2.18)										
19	There are no victims of social disasters, or refugees (Y2.19)										
20	There are no migrant workers with social problems (Y2.20)										
21	There is no family member with HIV/AIDS (ODHA) (Y2.21)										
22	There are no vulnerable family members (with problems accumulated from several indicators) (Y2.22)										

Source: Republik Indonesia (1992).

3.4.2 Test of Validity and Reliability of the Instrument

Testing the validity and reliability of the instrument was done through a confirmatory factor analysis. The indicators of a variable may be considered valid if they show a significant loading factor with $\alpha = 5\%$. A research instrument is considered unidimensional valid if it has a value of goodness of fit index (GFI) >0,90 and is considered reliable if it has a value of *construct reliability* (ρ_η) >0,70.

The instrument validity and reliability tests were carried out in stages if the result of the confirmatory factor analysis was GFI <0,90 or if the loading factor of a small indicator (< 0,30), then the relevant indicator.

3.5 Data Analysis Technique

The answers obtained from the respondents are in accordance with the predetermined variable values. The analysis was carried out using the Structural Equation Model (SEM) and the smart PLS program package. SEM allows analysis on a series of relationships simultaneously to provide statistical efficiency.

This study used smart PLS 3.2.7 software for data processing. Structural Equation Modeling (SEM) is a method used to cover weaknesses contained in the regression method. According to experts, Structural Equation Modeling (SEM) research methods are divided into two approaches: Covariance Based SEM (CBSEM) and Variance Based SEM or Partial Least Square (PLS) approaches. Partial Least Square is a powerful analysis method as it is not based on many assumptions.

Parameter estimates obtained with PLS can be categorized as follows: First category is the weight estimate used to create a latent variable score. The second reflects the path estimate connecting connects the latent variables, and between the latent variable and indicator block (loading). The third category is related to the means and location of parameters (regression constant values) for indicators and latent variables.

To obtain the three estimates, PLS uses a three-stage iteration process, and each stage results in the following:
a) Generating *weight estimate.*
b) Generating estimates for *inner model* and *outer model.*
c) Generating means and location estimates (constant).

The analysis technique in the PLS method is described as follows:

3.5.1 Outer model analysis

a) *Convergent Validity* is an indicator assessed based on the correlation between item scores/component scores and construct scores, which can be seen from the standardized loading factor illustrating the magnitude of the correlation. The individual reflexive magnitude is considered high if it correlates in >0.7 with the construct, whereas according to Chin, as quoted by Imam Ghozali, an outer loading value between 0.5-0.6 is considered sufficient.
b) *Discriminant Validity* is a measurement model with reflexive indicators assessed based on cross-loading measurements with constructs. If the correlation of a construct with a measurement item is greater than the size of other constructs, then the block size is better than other blocks.
c) *Composite reliability* is an indicator to measure a construct in the view of latent variable coefficients. There are two tools to evaluate composite reliability, including internal consistency and Cronbach's alpha. If the value achieved is >0.70, then it means the construct has a high reliability.
d) *Cronbach's Alpha* is a reliability test to strengthen the result of composite reliability. A variable is declared reliable if it has a Cronbach's alpha value >0.7. The test conducted above is a test on the outer model for reflective indicators.

Different tests for formative indicators include:
a) Significance of weights

b) Multicollinearity.

Note: in this study, all indicators are reflective.

3.5.2 Inner model analysis

This analysis can be evaluated using R-square for the dependent construct, Stone-Geisser Q square test for predictive relevance and t-test for the significance of the structural path parameter coefficients. Evaluation of the inner model using PL is done by looking at R-square for each dependent latent variable. Changes in the value of the R-square are used to assess the effect of certain independent latent variables on a dependent latent variable, to find out a substantive effect. Its evaluation can also be done by looking at the predictive value of Q-square relevance for the constructive model. Q-square measures how well the observational values generated by the model and its estimated parameters. >0 Q-square value indicates that the model has a predictive relevance value, whereas <0 Q-square value indicates that the model lacks predictive relevance.

In testing the hypotheses, t-statistic value and probability value can be considered. To test a hypothesis, the t-statistic value is 1.96 for alpha of 5%. Ha is accepted and H0 is rejected when t-statistic value is >1.96. In a probability test, Ha is accepted if the value of p is <0.05.

3.5.3 Hypothesis

As this is a theory-based model, and the result has not been tested, then theoretically, the following hypotheses apply:

a) Hypothesis 1

It is assumed that the social variable is reflected in these 20 indicators, including security $(X_{1.1})$, peace $(X_{1.2})$, hope for a better future $(X_{1.3})$, prosperity $(X_{1.4})$, Health $(X_{1.5})$, Progress $(X_{1.6})$, Independence $(X_{1.7})$, Ideal number of children $(X_{1.8})$, Responsibility $(X_{1.9})$, Harmonious living $(X_{1.10})$, Devotion $(X_{1.11})$, Self-reliance $(X_{1.12})$, physical and mental happiness $(X_{1.13})$, education $(X_{1.14})$, spiritual $(X_{1.15})$, division of roles $(X_{1.16})$, support for progress $(X_{1.17})$, family time $(X_{1.18})$, social interaction $(X_{1.19})$, and problem solving $(X_{1.20})$.

b) Hypothesis 2

It is assumed that the economic variable is reflected in these 12 indicators, including salary $(X_{2.1})$, bonus $(X_{2.2})$, savings $(X_{2.3})$, livelihood $(X_{2.4})$, job opportunity $(X_{2.5})$, unemployment $(X_{2.6})$, entertainment $(X_{2.7})$, clothing $(X_{2.8})$, food $(X_{2.9})$, home $(X_{2.10})$, transportation $(X_{2.11})$, business state $(X_{2.12})$.

c) Hypothesis 3

It is assumed that the cultural variable is reflected in these 7 indicators, including family's capability to overcome non-physical problems $(X_{3.1})$, physical emotional control $(X_{3.2})$, positive self-image $(X_{3.3})$, spousal care $(X_{3.4})$, children respecting parents $(X_{3.5})$, work ethic $(X_{3.6})$, positive activities $(X_{3.7})$.

d) Hypothesis 4

It is assumed that the environmental variable is reflected in these 12 indicators, including family's capability in dealing with air quality $(X_{4.1})$, water quality $(X_{4.2})$, soil quality $(X_{4.3})$, forest quality $(X_{4.4})$, beach, sea quality $(X_{4.5})$, rice field quality $(X_{4.6})$, superior product quality

($X_{4.7}$) disasters ($X_{4.8}$), waste generation ($X_{4.9}$), waste management ($X_{4.10}$), refuse generation ($X_{4.11}$), refuse management ($X_{4.12}$).

e) Hypothesis 5

It is assumed that the family resilience variable is reflected in these 7 indicators, including: trying to do something for others ($Y_{1.1}$), doing and walking together ($Y_{1.2}$), family maintenance ($Y_{1.3}$), creating a positive atmosphere ($Y_{1.4}$), protecting shared dignity and celebrating life together ($Y_{1.5}$), the ability of individuals or families to explore their potential to face life's challenges ($Y_{1.6}$), the ability of families to manage problems utilizing the resources they have to meet needs ($Y_{1.7}$).

f) Hypothesis 6

It is assumed that the family adaptability variable is reflected in these 22 indicators, including No abandoned <5-year-old children ($Y_{2.1}$), no abandoned children ($Y_{2.2}$), no 'bad' children ($Y_{2.3}$), no homeless children ($Y_{2.4}$), no socially and economically vulnerable women ($Y_{2.5}$), no victims of violence ($Y_{2.6}$), no abandoned elderly people ($Y_{2.7}$), no abandoned, disabled family members ($Y_{2.8}$), no unemployed family members ($Y_{2.9}$), no beggars in the family ($Y_{2.10}$), no homeless family members ($Y_{2.11}$), no ex-convicts ($Y_{2.12}$), no drug abuse ($Y_{2.13}$), no poor family members ($Y_{2.14}$), no family members living in inhabitable homes ($Y_{2.15}$), no family members with social and psychological problems ($Y_{2.16}$), no remote indigenous communities ($Y_{2.17}$), no victims of natural disasters ($Y_{2.18}$), no victims of social disasters/refugees ($Y_{2.19}$), no migrant workers with social problems ($Y_{2.20}$), no family members with HIV/AIDS (ODHA) ($Y_{2.21}$), no vulnerable family members ($Y_{2.22}$).

g) Hypothesis 7

It is assumed that there is a significantly positive effect of social, economic, cultural and environmental variables on family resilience variable.

h) Hypothesis 8

It is assumed that there is a significantly positive effect of social, economic, cultural and environmental variables on family adaptability variable.

i) Hypothesis 9

It is assumed that there is a significantly positive relationship between family resilience and family adaptability [8].

4   Result and Discussion

4.1   Analysis of Confirmatory Factor of the Measurement Model (Outer Model)

4.1.1 Social Variable

Table 3 shows that the cross-loading values of the X1.1 indicator to X1.20 indicator are the greatest. This suggest that the indicators meet the discriminant validity. Therefore, X1.1 – X1.20 as indicators are valid. Additionally, the CR value of this measurement model is 0.953, which is 0.70, indicating that X1.1 indicator until X1.20 indicators are valid and reliable in

reflecting the X1 variable. Therefore, they fit to be used in the analysis of structural model (inner model).

Based on Table 2, the outer loading values of all X1 indicators are more than 0.50, except for X8 (ideal number of children). Thus, the research instrument is considered meeting the requirements of convergent validity. The following are the indicators, from the most to the least dominant and significant: X1.13 (Physical and mental happiness), X1.6 (progress), X1.10 (harmonious), X1.5 (health), X1.9 (responsibility), X1.12 (self-reliance), X1.11 (devotion), X1.3 (hope for a better future), X1.17 (support for progress), X1.7 (independence), X1.4 (prosperity), X1.15 (spiritual), X1.1 (security), X1.2 (peace), X1.16 (division of roles), X1.14 (problem solving), X1.18 (education), X1.19 (family time). X1.8 (ideal number of children).

X1.13 (physical and mental happiness) is the most dominant indicator with the largest value of outer loading. This does not imply that people do not feel physical and mental happiness. This indicator means a strong social state. Society needs a lot of motivational programs as the most dominant social indicator is inner and outer happiness.

Table 2. Convergent Validity (Outer Loading) of Social Variable Indicator

Indicator	Outer Loading (O)	Ranking	Indicator name
	Significant		
X1.13	0.810	1	Physical and mental happiness
X1.6	0.806	2	Progress
X1.10	0.799	3	Harmonious living
X1.5	0.795	4	Health
X1.9	0.782	5	Responsibility
X1.12	0.777	6	Independence
X1.11	0.770	7	Devotion
X1.3	0.763	8	Hope for a better future in realizing physical well-being and inner happiness
X1.17	0.762	9	Support for progress
X1.7	0.748	10	Self-reliance
X1.4	0.728	11	Prosperity
X1.15	0.723	12	Spiritual
X1.1	0.717	13	Security
X1.2	0.714	14	Peace
X1.16	0.695	15	Division of roles
X1.20	0.650	16	Problem solving
X1.14	0.631	17	Education
X1.18	0.628	18	Family time
X1.19	0.628	19	Social interaction
	Insignificant		
X1.8	0.117	20	Ideal number of children (insignificant)

Table 3. Discriminant Validity (Cross Loading) and Reliability (Composite Reliability) of Social Variable

	X1	X2	X3	X4	X5	X6	CR
X1.1	0.717	0.338	0.516	0.322	0.475	0.340	0.953
X1.2	0.714	0.324	0.505	0.305	0.510	0.370	
X1.3	0.763	0.409	0.548	0.330	0.590	0.299	
X1.4	0.728	0.427	0.482	0.331	0.457	0.292	
X1.5	0.795	0.425	0.560	0.350	0.551	0.368	
X1.6	0.806	0.473	0.579	0.385	0.558	0.372	
X1.7	0.748	0.428	0.520	0.327	0.504	0.315	
X1.8	0.117	0.009	0.077	0.088	0.046	0.031	
X1.9	0.782	0.407	0.647	0.307	0.601	0.331	
X1.10	0.799	0.402	0.574	0.325	0.574	0.349	
X1.11	0.770	0.330	0.572	0.342	0.556	0.383	
X1.12	0.777	0.421	0.560	0.342	0.531	0.275	
X1.13	0.810	0.410	0.596	0.340	0.591	0.335	
X1.14	0.631	0.435	0.479	0.340	0.485	0.208	
X1.15	0.723	0.363	0.533	0.306	0.510	0.381	
X1.16	0.695	0.330	0.540	0.328	0.501	0.349	
X1.17	0.762	0.442	0.572	0.324	0.554	0.262	
X1.18	0.628	0.288	0.454	0.252	0.438	0.289	
X1.19	0.628	0.339	0.453	0.289	0.496	0.306	
X1.20	0.650	0.325	0.515	0.318	0.499	0.300	

4.1.2 Economic Variable (X2)

Table 4. Convergent Validity (Outer Loading) of Indicators of Institutional Variable (K)

Indicator	Outer Loading (O)	Ranking	Indicator Name
X2.9	0.851	1	Food
X2.8	0.825	2	Clothing
X2.10	0.773	3	Home
X2.7	0.742	4	Entertainment
X2.11	0.654	5	Transportation
X2.1	0.587	6	Salary
X2.6	0.524	7	Unemployment
X2.3	0.523	8	Savings
X2.2	0.518	9	Bonus
X2.4	0.514	10	Livelihood
X2.5	0.508	11	Job opportunity
X2.12	0.505	12	Business state

Based on Table 4, the outer loading values of all X2 indicators are greater than 0.50. This means that the research instrument has met the requirement of convergent validity. The following are the indicators from the most to the least dominant: X2.9 (food), X2.8 (clothing),

X2.10 (food), X2.7 (entertainment), X2.11 (transportation), X2.1 (salary), X2.6 (unemployment), X2.3 (savings), X2.2 (bonus), X2.4 (livelihood), X2.5 (job opportunity), X2.12 (business state).

Table 5. Discriminant Validity (Cross Loading) and Reliability (Composite Reliability) of Economic Variable

	X1	X2	X3	X4	Y1	Y2	CR
X1.1	0.310	0.587	0.236	0.224	0.248	0.082	0.889
X1.2	0.132	0.518	0.085	0.141	0.106	-0.080	
X1.3	0.132	0.523	0.123	0.146	0.099	-0.059	
X1.4	0.177	0.514	0.150	0.152	0.137	-0.066	
X1.5	0.212	0.508	0.216	0.166	0.163	-0.046	
X1.6	0.257	0.524	0.279	0.336	0.292	0.129	
X1.7	0.380	0.742	0.406	0.250	0.406	0.203	
X1.8	0.483	0.825	0.488	0.336	0.447	0.238	
X1.9	0.514	0.851	0.504	0.314	0.438	0.210	
X1.10	0.429	0.773	0.401	0.260	0.368	0.185	
X1.11	0.334	0.654	0.281	0.234	0.309	0.104	
X1.12	0.130	0.505	0.154	0.105	0.183	-0.022	

Based on Table 5, the largest cross-loading value of X2.1-X2.12 is indicated by the X2 variable. This suggests that the indicators fulfill the requirement of discriminant validity. Thus, they are declared valid. Additionally, the CR value of this measurement model is 0.889, which is more than 0.70, hence their validity and reliability. The most dominant indicator reflected in economic variables is food.

4.1.3 Cultural (X3)

Based on Table 6, all indicators show values of more than 0.50, thus meeting the requirements of convergent validity. The most dominant indicators reflecting cultural variable include X3.3 and X3.7, for they have the largest outer loading values.

Table 6. Convergent Validity (Outer Loading) of Indication of Cultural Variabel (X3)

Indicator	Outer Loading (O)	Ranking	Indicator Name
X3.3	0.891	1	Positive self-image
X3.7	0.825	2	Positive activities
X3.2	0.823	3	Physical emotional control
X3.6	0.820	4	Work ethic
X3.1	0.755	5	Family's capability to overcome non-physical problems
X3.5	0.743	6	Children respecting parents
X3.4	0.671	7	Spousal care

Tabel 7. Discriminant Validity (Cross Loading) and Reliability (Composite Reliability)
of Cultural Variabel (X2)

	X1	X2	X3	X4	Y1	Y2	CR
X3.1	0.618	0.435	0.755	0.309	0.599	0.317	0.921
X3.2	0.609	0.433	0.823	0.368	0.673	0.361	
X3.3	0.634	0.451	0.891	0.395	0.652	0.378	
X3.4	0.511	0.352	0.671	0.320	0.493	0.271	
X3.5	0.567	0.291	0.743	0.321	0.549	0.345	
X3.6	0.564	0.459	0.820	0.365	0.604	0.313	
X3.7	0.559	0.390	0.825	0.417	0.626	0.348	

Table 7 shows that X2.1-X2.7 have great cross-loading values. This shows that the indicators fulfill discriminant validity requirement. Therefore, the indicators are valid and reliable. Additionally, the CR value of this measurement model is 0.921, which is more than 0.70.

4.1.4 Environmental Variable (X4)

Table 8. Convergent Validity (Outer Weights) of Indicators of Environmental Variable (X4)

Indicator	Outer Loading (O)	Ranking	Indicator Name	
X4.3	0.731	1	Soil quality	Significant
X4.10	0.702	2	Waste management	Significant
X4.11	0.676	3	Refuse generation	Significant
X4.9	0.672	4	Waste generation	Significant
X4.1	0.662	5	Air quality	Significant
X4.12	0.640	6	Refuse generation	Significant
X4.4	0.582	7	Forest quality	Significant
X4.6	0.567	8	Rice field quality	Significant
X4.5	0.508	9	Beach, sea quality	Significant
X4.2	0.505	10	Water quality	Significant
X4.8	0.494	11	Disasters	Insignificant
X4.7	0.456	12	Superior product quality	Insignificant

Based on Table 8, all outer loading values of indicators of X4 are more than 0.50, except for X4.8 and X4.7. Thus, all except X4.8 and X4.7 have met the requirement of convergent validity. The most dominant indicators include X4.3 and X4.10 for they have the largest outer loading values.

Table 9. Discriminant Validity (Cross Loading) of Environmental Variable (X4)

	X1	X2	X3	X4	Y1	Y2	CR
X4.1	0.377	0.236	0.380	0.662	0.402	0.199	0.872
X4.2	0.175	0.095	0.220	0.505	0.267	0.129	
X4.3	0.387	0.252	0.438	0.731	0.451	0.282	
X4.4	0.257	0.199	0.240	0.582	0.270	0.175	
X4.5	0.183	0.218	0.180	0.508	0.150	0.102	
X4.6	0.154	0.183	0.166	0.567	0.213	0.081	
X4.7	0.172	0.113	0.202	0.456	0.259	0.158	
X4.8	0.299	0.115	0.297	0.494	0.292	0.280	
X4.10	0.209	0.324	0.226	0.672	0.236	0.161	
X4.11	0.278	0.328	0.267	0.702	0.282	0.142	
X.12	0.280	0.333	0.239	0.676	0.298	0.172	

Table 9 shows that the cross-loading values of indicators X4.1-X4.12 are great. This indicates that the indicators fulfill the requirement of discriminant validity, hence its validity. Additionally, the CR value of this measurement model is 0.872, which is more than 0.70, declaring them valid and reliable.

4.1.5 Family Resilience Variable

Table 10. Convergent Validity (Outer Loading) of Indicators of Family Resilience Variable (Y1)

Indicator	Outer Loading (O)	Ranking	Indicator Name
Y1.3	0.879	1	Family maintenance
Y1.2	0.874	2	Doing and walking together
Y1.5	0.863	3	Protecting shared dignity and celebrating life together
Y1.7	0.852	4	The ability of families to manage problems utilizing the resources they have to meet needs
Y1.6	0.840	5	The ability of individuals or families to explore their potential to face life's challenges
Y1.4	0.809	6	Creating a positive atmosphere
Y1.1	0.792	7	Trying to do something for others

Based on Table 10, all outer loading values of indicators of family resilience (Y1) are greater than 0.50, hence their eligibility for further analysis.

Table 11. Discriminant Validity (Cross Loading) and Reliability (Composite Reliability) of Family Resilience Variable (Y1)

	X1	X2	X3	X4	Y1	Y2	CR
Y1.1	0.532	0.415	0.633	0.413	0.792	0.380	0.946
Y1.2	0.632	0.387	0.682	0.472	0.874	0.422	
Y1.3	0.619	0.390	0.613	0.408	0.879	0.411	
Y1.4	0.595	0.312	0.614	0.455	0.809	0.412	
Y1.5	0.655	0.406	0.672	0.393	0.863	0.497	
Y1.6	0.610	0.489	0.647	0.395	0.840	0.351	
Y1.7	0.590	0.478	0.632	0.396	0.852	0.336	

Table 11 shows that the cross-loading values of Y1.1-Y1.7 are great. This indicates that the indicators fulfill discriminant validity requirement, hence their validity. Additionally, the CR value of this measurement model is 0.946, which is more than 0.70, declaring them valid and reliable.

4.1.6 Family Adaptability Variable

Table 12. Convergent Validity (Outer Loading) of Indicators of Family Adaptability Variable (Y2)

Indicator	Outer Loading (O)	Ranking	Indicator Name
Y2.9	0.875	1	Unemployed family members
Y2.12	0.842	2	Ex-convicts
Y2.20	0.840	3	Migrant workers with social problems
Y2.16	0.837	4	Family members with social/psychological problems
Y2.6	0.836	5	Victims of violence
Y2.7	0.836	6	Abandoned elderly people
Y2.19	0.826	7	Victims of social disorder/refugees
Y2.1	0.820	8	Abandoned <5-year-old children
Y2.21	0.817	9	Family members with HIV/AIDS
Y2.11	0.815	10	Homeless family members
Y2.8	0.811	11	Abandoned disabled people
Y2.2	0.808	12	Abandoned child
Y2.13	0.801	13	Drug abuse
Y2.10	0.796	14	Beggars
Y2.4	0.773	15	Homeless children
Y2.3	0.758	16	'Bad' children
Y2.22	0.750	17	Vulnerable family members
Y2.5	0.741	18	Economically and socially vulnerable women
Y2.17	0.735	19	Remote indigenous communities
Y2.15	0.729	20	Family members in unhabitable homes
Y2.18	0.648	21	Victims of natural disasters
Y2.14	0.590	22	Poor family members

Based on Table 12, all indicators show outer loading values of above 0.50. This means that they can be used for further analysis. The most dominant indicators include Y2.9 and Y2.12 for they have the largest outer loading values.

Table 13. Discriminant Validity (Cross Loading) and Reliability (Composite Reliability) of Family Adaptability Variable

	X1	X2	X3	X4	Y1	Y2	CR
Y2.1	0.381	0.182	0.379	0.261	0.402	0.820	0.973
Y2.2	0.364	0.203	0.375	0.284	0.394	0.808	
Y2.3	0.353	0.161	0.361	0.227	0.363	0.758	
Y2.4	0.343	0.168	0.346	0.225	0.360	0.773	
Y2.5	0.369	0.192	0.349	0.297	0.392	0.741	
Y2.6	0.398	0.188	0.361	0.248	0.406	0.836	
Y2.7	0.374	0.175	0.370	0.302	0.424	0.836	
Y2.8	0.321	0.077	0.338	0.227	0.399	0.811	
Y2.9	0.391	0.140	0.377	0.230	0.424	0.875	
Y2.10	0.315	0.142	0.277	0.226	0.337	0.796	
Y2.11	0.289	0.127	0.276	0.174	0.315	0.815	
Y2.12	0.384	0.124	0.367	0.213	0.371	0.842	
Y2.13	0.345	0.129	0.323	0.264	0.357	0.801	
Y2.14	0.337	0.295	0.334	0.304	0.376	0.590	
Y2.15	0.392	0.241	0.366	0.299	0.446	0.729	
Y2.16	0.386	0.180	0.360	0.239	0.411	0.837	
Y2.17	0.323	0.158	0.278	0.189	0.335	0.735	
Y2.18	0.201	0.107	0.188	0.116	0.286	0.648	
Y2.19	0.284	0.097	0.264	0.209	0.335	0.826	
Y2.20	0.322	0.118	0.300	0.208	0.353	0.840	
Y2.21	0.349	0.100	0.328	0.227	0.364	0.817	
Y2.22	0.328	0.152	0.309	0.240	0.350	0.750	

Table 13 shows that the cross-loading values of Y2.1-Y2.22 are great. This shows that the indicators have met the requirement of discriminant validity, hence their validity. Additionally, the CR value of this measurement model is 0.973, which is more than 0.70, declaring them valid and reliable.

4.2 Goodness-of-Fit of Structural Model (Inner Model)

After obtaining a valid and reliable latent variable measurement model, the measurement results are then used in the analysis of structural model or inner model. The goodness of fit of inner model of each endogenous latent variable is determined based on the R-square value or the coefficient of determination. The overall goodness of fit of structural model is measured by Q^2 predictive relevance. A structural model is declared good fit if its Q^2 predictive relevance is >0.50. R-square values of the structural model are presented in following table.

Table 14. R-Square of Endogenous Latent Variable of Structural Model

Endogenous Latent Variables	R Square
Family Resilience (Y1)	0,652
Family Adaptability (Y2)	0,261

Based on the R-square values of the two endogenous latent variables presented in Table 13, the following Q^2 predictive relevance is obtained:

$$Q^2 = 1 - (1 - 0.649)(1-0.253) = 0.738 \sim 73.8\%$$

This value indicates that approximately 73.8 of latent endogenous variable in the structural model can be explained by the model itself, while the remaining 26.2 shall be explained by other variables outside the model and error. The predictive relevance Q2 value obtained is more than 0.50, declaring it a good fit.

4.3 Testing the Path Coefficient Hypothesis and Interpretation

Based on the goodness of fit of the previous structural model, the structural model was a Good Fit. This means that the model is feasible to be used in hypotheses testing to determine the relationship between variables. An exogenous latent variable is considered influential on the endogenous latent variable if t-statistic is greater than 1.96 or less than -1.96. The result of hypotheses testing is presented in Table 15.

Table 15. Hypothesis Testing Result for the Effect Relationship among Latent Variables

Relationship of Latent Variables	Original Sample (O)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	Description
X1 -> Y1	0.303	0.050	6.076	Significant
X1 -> Y2	0.203	0.080	2.523	Significant
X2 -> Y1	0.041	0.036	1.128	Insignificant
X2 -> Y2	-0.111	0.050	2.222	Significant
X3 -> Y1	0.457	0.053	8.653	Significant
X3 -> Y2	0.080	0.071	1.122	Insignificant
X4 -> Y1	0.138	0.037	3.780	Significant
X4 -> Y2	0.046	0.048	0.951	Insignificant
Y1 -> Y2	0.303	0.087	3.472	Significant

Theory of structural equation model:

Endogenous Variable = Exogenous Variable + Endogenous Variable + Error
Family Resilience (Y1) = $\beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e_1$
Family Adaptability (Y2) = $\beta_5 Y_1 + \beta_6 X_1 + \beta_7 X_2 + \beta_8 X_3 + \beta_9 X_4 + e_2$

Where: β = path coefficient of each variable, e = error, X1 = social, X2 = economic, X3 = cultural, X4 = environmental, Y1 = family resilience and Y2 = family adaptability

The structural equation model resulting from the analysis:

$Y1 = 0,303\ X1 + 0,041\ X2 + 0,457\ X3 + 0,138\ X4 + e_1$
$Y2 = 0,303\ Y1 + 0,203\ X1 - 0,111\ X2 + 0,080\ X3 + 0,046 + e_2$

5 Conclusion and Suggestions

5.1 Conclusion

a) Hypothesis 1, only 1 indicator is not proven to reflect the social variable (the ideal number of children) ($X_{1.8}$)
b) Hypothesis 2, all indicators evidently reflect economic variable
c) Hypothesis 3, all indicators evidently reflect cultural variable
d) Hypothesis 4, 2 indicators do not evidently reflect environmental variable (superior product quality ($X_{4.7}$), disasters ($X_{4.8}$))
e) Hypothesis 5, all indicators evidently reflect family resilience variable
f) Hypothesis 6, all indicators evidently reflect family adaptability variable
g) Hypothesis 7, there is evidently a positive and significant relationship between social, economic, cultural and environmental variables and family resilience variable
h) Hypothesis 8, there is no evidence of positive and significant relationship between social, economic, cultural and environmental variables and family adaptability variable
i) Hypothesis 9, there is evidently a positive and significant relationship between family resilience and family adaptability.
j) Recommended model:

$Y1 = 0,297\ X1 + 0,045\ X2 + 0,456\ X3 + 0,0145\ X4 + e_1$
$Y2 = 0,292\ Y1 + 0,200\ X1 - 0,113\ X2 + 0,075\ X3 + 0,080\ X4 + e_2$

Where:
β = path coefficient of each variable, e = error, X1 = social, X2 = economic, X3 = cultural, X4 = environmental, Y1 = family resilience and Y2 = family adaptability

5.2 Suggestions

a) Cooperatives capable to develop savings and loan quickly need to be expanded Reviewing bonuses as good performance has become a regular program in various
b) companies, thus the regulations related to bonuses need to be prepared, as some kind of motivation to maximize HR potential
c) Creating livelihood in business while maintaining social and environmental balance
d) The Education Office to prepare a curriculum stimulating students to be skilled at creating jobs rather than looking for jobs. The future employment prospect is the industry-based 4.0.
e) Department of Industry and Trade to make a breakthrough for the export of superior products from Pasuruan. Indonesia export sector emphasizes on processed products.
f) The Department of Fisheries, Animal Husbandry, Forestry, etc. to adjust the economic recommendation under its authority and responsibility

g) The government through all Offices related to the performance of cultural aspects to maintain the implementation of their programs.

h) The local government with environmental agencies to improve waste management and handle waste generation by employing a monitoring report involving relevant stakeholders

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