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The Effect of Livelihood Assets Conditions on the Well-being of the Ketapanrame Tourism Village Community, Mojokerto Regency

Hashfian Ardhana[1], Gunawan Prayitno[1*], AR. Rohman Taufiq Hidayat[1], Masamitsu Onishi[2], Christopher L. Atkinson[3]

[1] Urban and Regional Planning Department, Faculty of Engineering, Universitas Brawijaya, Malang 65145, Indonesia
[2] Urban Management Department, Graduate School of Engineering, Kyoto University, Kyoto 606-8501, Japan
[3] Department of Administration and Law - Public Administration Program, University of West Florida, West Florida 32514, United States

Corresponding Author Email: gunawan_p@ub.ac.id

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ABSTRACT

Rural tourism is highly dependent on local communities as well as natural and built environments. While tourism's impact is widely studied, there remains a research gap in how the five livelihood assets interact collectively as a holistic system to influence community well-being, particularly in award-winning tourism villages. This study bridges this theoretical fragmentation by integrating the Sustainable Livelihood Framework with the subjective well-being construct to examine how these five types of capital (physical, financial, natural, social, and human) affect community flourishing. The research was conducted in Ketapanrame Village, which was awarded the title of Best Tourism Village in 2023 by the Ministry of Tourism of Indonesia. This study employs a quantitative approach using Structural Equation Modeling–Partial Least Squares (SEM-PLS) analysis to assess the condition of livelihood assets and their influence on community well-being. The findings reveal that tourism development in Ketapanrame Village significantly reshapes livelihood assets, where financial and social capital emerge as the primary predictors of life satisfaction and emotional well-being, with R-square values reaching 0.752 and 0.840 respectively. This suggests that the management of institutional trust and inclusive financial systems is more critical for community well-being in service-based tourism models than traditional natural resource extraction.

1. INTRODUCTION

Tourism represents a strategic sector in national economic development, particularly in enhancing community well-being within rural areas. To this end, the government consistently promotes the development of tourism villages as a cornerstone of locally-based economic strategies. These initiatives serve as vital rural development instruments designed to foster prosperity through job creation, economic diversification, and the optimization of local assets, ultimately mitigating the migration pressures that drive rural populations to seek livelihoods in urban centers [1, 2]. However, the development of tourism in villages still faces various challenges, such as unequal distribution of economic benefits, limited human resources, and negative environmental impacts [3]. To support this sector, the Indonesian government has allocated a substantial budget in the State Budget (APBN).

Opportunities in the tourism sector should be utilized by village governments to increase village income, reduce unemployment rates, and alleviate poverty. Moreover, the government is also giving special attention to tourism development so that it can become a source of income for communities in tourist destinations [4]. One of the villages that has seized this opportunity is Ketapanrame Village. Ketapanrame Village is a village whose tourism development involves community participation. In 2023, Ketapanrame Village received the Best Tourism Village Award 2023 in the Indonesian Tourism Village Award (ADWI), organized by the Ministry of Tourism.

It should be noted that tourism, especially rural tourism, is highly dependent on local communities and the natural as well as built environments [5]. Therefore, tourism can generate both positive and negative impacts on local communities and their surrounding environments [6]. This is also true for the tourism development experienced by the community of Ketapanrame Village. These impacts can influence the community in various aspects such as economic, social, physical, and environmental dimensions [6]. In fact, some tourism projects in rural areas also affect the human capital of local communities [7]. These five aspects are among the key components in the Sustainable Livelihood Framework [8], where physical capital, financial capital, natural capital, social capital, and human capital may undergo changes in traditional rural lifestyles due to shifts in assets, access to those assets,

and changes in social and political structures within the community. Thus, tourism development always affects changes in existing community livelihood systems [9]. Rural tourism development often coincides with land-use transitions, particularly the conversion of agricultural land into tourism-related infrastructure, which can significantly reshape livelihood structures and community well-being [10].

Livelihood assets are considered to be capable of improving living standards and quality of life, which in turn influence well-being status [11]. For example, if a person has ownership rights to their physical assets, such as a house, they are considered to be better off than those who rent or have no ownership rights to their homes. The designation of Ketapanrame Village as a tourism village is expected to have an impact on the condition of its livelihood assets, which will in turn directly affect the well-being of the community. People involved in tourism have greater opportunities to gain access to new assets that can improve their well-being [12].

However, despite extensive literature on tourism, livelihood assets, and subjective well-being, existing studies tend to treat both frameworks separately, resulting in a fragmented theoretical linkage. Most tourism development research in rural areas focuses on only one or two assets—typically financial or physical capital—without integrating all five livelihood assets as a holistic system influencing community well-being. This creates a research gap regarding how these assets interact collectively within a tourism village context.

The uniqueness of this study lies in positioning livelihood assets not merely as descriptive indicators, but as a comprehensive analytical lens for understanding tourism-driven development. This approach is important because village governments often make planning decisions by prioritizing only one dimension (e.g., infrastructure), while overlooking other crucial assets such as human or social capital. By integrating all five assets into a unified framework, this paper aims to provide evidence-based insights that can serve as a planning reference for Ketapanrame Village and other tourism villages in Indonesia.

Furthermore, previous empirical research has demonstrated that livelihood assets significantly shape subjective well-being, as access to resources, skills, networks, and natural environments influences people's evaluations of their life satisfaction, emotional conditions, and psychological flourishing [13-15]. Munanura et al. [12] showed that livelihood capital contributes to household resilience and subjective well-being. Similarly, Dehghani Pour et al. [16] emphasized that changes in asset access directly determine livelihood strategies and eventually affect well-being outcomes. These studies support the theoretical argument that livelihood assets are not independent constructs but function as multidimensional predictors of subjective well-being.

Given these conditions, this study seeks to bridge the theoretical fragmentation by explicitly linking the Sustainable Livelihood Framework with the subjective well-being construct in the context of a tourism village. This integration is intended to build a stronger narrative on how tourism development influences community well-being through changes in livelihood assets.

This study was conducted to examine the condition of the livelihood asset aspects of the Ketapanrame Tourism Village community, which include Physical Capital, Financial Capital, Natural Capital, Social Capital, and Human Capital, as well as how these five assets influence community well-being. This study employs a quantitative analysis using Structural Equation Modeling–Partial Least Squares (SEM-PLS) to assess the condition of livelihood assets and their influence on the well-being of the Ketapanrame Tourism Village community.

2. LITERATURE REVIEW

2.1 Livelihood assets

Livelihood assets refer to an approach based on the belief that people require a variety of assets to achieve improved living outcomes [8]. These assets are internal factors that influence and play a crucial role in the decision-making mechanisms of households in engaging with livelihood strategies [16]. A livelihood is considered sustainable when people are able to cope with and recover from stresses and shocks, maintain or enhance their capabilities and assets, and do so without undermining the natural resource base [17]. Community access to these assets is also influenced by shocks, trends, and seasonality—factors considered exogenous, as they lie beyond the community's control [18].

2.1.1 Human capital

Human capital typically refers to an individual's "mixture of skills, knowledge, experience, habits and personality that can be put to productive use" [19]. A commonly analyzed indicator of human capital is education, particularly the quality of community education. This includes not only formal education, but also how knowledge is developed in the village, how it is shared and expanded, and how it is utilized [8]. At the household level, human capital refers to the quantity and quality of labor available. This varies based on household size, skill levels, leadership potential, health status, and other factors. Access to varying levels of quality and quantity of human capital differentiates livelihood strategy participants [16]. For instance, low education levels and lack of skills weaken a household's ability to adopt more profitable and better-paying occupations.

2.1.2 Physical capital

Physical capital comprises basic infrastructure and producer goods needed to support livelihoods. Infrastructure refers to modifications in the physical environment that help people meet their basic needs and become more productive. Essential infrastructure includes transportation, clean water and adequate sanitation, safe housing and buildings, affordable and clean electricity, and access to information, all of which are considered physical capital [20]. Producer goods are tools and equipment used by people to be more productive [8]. Physical capital is one of the essential livelihood assets, as participatory poverty assessments have often found that lack of certain types of infrastructure is a core dimension of poverty [8].

2.1.3 Social capital

Recent studies in Indonesian tourism villages demonstrate that social capital, comprising trust, norms, and social networks, serves as a primary resource for solving life problems and facilitating collective action [21, 22]. In these communities, households are connected through social obligations, reciprocal exchanges, trust, and mutually beneficial support, particularly in times of crisis [23]. These characteristics form what is known as social capital, an important livelihood asset. Households with higher levels of

social capital show greater food security compared to those with lower levels of social assets. This suggests that neighbors serve as a fundamental support network in ensuring household food security during times of urgent need [24]. Similarly, Prayitno et al. [25] concluded that social capital within communities has a positive and significant effect on improving overall well-being. Strong social ties enhance a community's ability to access and distribute long-term economic, social, and environmental benefits. Thus, beyond its immediate functions, social capital serves as a key driver of sustained community well-being.

2.1.4 Natural capital

Natural capital refers to the stock of natural resources from which flows of useful resources for livelihoods are derived. These resources vary widely, ranging from intangible public goods like the atmosphere and biodiversity to divisible assets directly used in production (trees, land, etc.) [8]. Clearly, natural capital plays a crucial role for those whose livelihoods depend partly or entirely on natural-resource-based activities such as agriculture, fishing, forest product collection, mineral extraction, and others [26]. The way people access resources—whether through ownership, leasing, collection, and so forth—must be considered, along with the condition of the resources themselves, their productivity, and how they change over time [23].

2.1.5 Financial capital

Financial capital represents the financial resources that people use to achieve their livelihood goals [8]. Rural households may obtain financial capital by selling production outputs to earn cash, which can be used to cope with periods of low production or to invest in other activities. These households may also rely on both formal and informal credit to supplement their financial resource reserves [18, 23]. Household income, savings, access to credit, and cash flows such as pensions, remittances, and money transfers are the primary sources of financial capital [20]. Once household income is positively related to savings, an increase in income improves savings and thereby enhances financial security [27]. Most studies have shown that financial assets have a positive impact on the ability of the poor and vulnerable to sustain their livelihoods [20].

2.2 Subjective well-being

Subjective well-being is a concept that refers to an individual's assessment of their quality of life based on personal experiences [28]. It is considered important as it offers a more comprehensive picture of a person's life quality than objective measures such as income or health status. A high level of subjective well-being generally indicates that individuals perceive their lives as satisfying, meaningful, and full of happiness. The assessment of subjective well-being includes both emotional and cognitive evaluations of one's life, which comprise: Life Satisfaction, measuring how content a person is with their life; emotional well-being, evaluating the frequency and intensity of positive and negative emotions; and psychological well-being, focusing on factors such as life purpose, personal growth, and the quality of social relationships [28].

2.2.1 Life satisfaction

Life satisfaction is a cognitive component of subjective well-being that refers to an individual's evaluation of their overall life based on their own standards or criteria. According to Diener, life satisfaction is subjective and evaluative, where individuals make a global assessment of their life, not just specific domains like work or family. This evaluation process reflects the integration of past experiences, current conditions, and future expectations. One of the most common measurement tools is the Satisfaction with Life Scale (SWLS), consisting of five items designed to assess how satisfied a person is with their life overall.

Assessment of life satisfaction involves indicators such as feeling that life is close to ideal, fulfillment of hopes and desires, and few major regrets. This scale avoids evaluating specific aspects like economic conditions or health, allowing individuals the freedom to determine what is important to them. Thus, these indicators are holistic, flexible, and heavily influenced by cultural context and personal values. Research indicates that while this scale exhibits good temporal stability, it is also sensitive enough to detect changes due to psychological interventions or significant life events.

2.2.2 Emotional well-being

Emotional well-being reflects the affective component of subjective well-being and consists of two primary dimensions: the frequency of positive emotional experiences and the low frequency of negative emotions. Diener emphasizes that high well-being is not necessarily associated with the intensity of positive emotions, but rather with the frequency and duration of positive emotions experienced in daily life. In this context, a person who often feels calm, content, and joyful—even in the absence of intense euphoria—can still possess a high level of emotional well-being. The variables measured include feelings such as happiness, contentment, anger, anxiety, and sadness experienced over a specific period of time. While these subjective factors are often viewed as elusive, they can be empirically evaluated as significant, albeit intangible, manifestations of wellbeing [12]. Therefore, emotional well-being provides insight into a person's mood and the emotional quality of their life within a given temporal context. This individual-level perspective is further reinforced by Prayitno et al. [29], who highlight that emotional well-being extends beyond personal experience and carries collective implications for community welfare. Emotionally healthy individuals tend to be more motivated, productive, and positively engaged within their communities, whereas a lack of emotional well-being can hinder social and economic progress.

2.2.3 Psychological well-being

Psychological well-being encompasses an individual's perception of how well they are functioning in life, particularly in social, emotional, and existential domains. Diener introduced the psychological well-being scale (later known as the flourishing scale) as a tool to measure essential functions such as interpersonal relationships, sense of purpose in life, optimism, and self-acceptance. Unlike life satisfaction, which is evaluative and global in nature, psychological well-being focuses on the quality of an individual's functioning across various life domains. Indicators of psychological well-being include eight key aspects, such as having a meaningful life, feeling that one contributes to the lives of others, maintaining positive relationships, and feeling valued and respected. As such, this dimension complements the emotional and cognitive aspects, contributing to a comprehensive understanding of subjective well-being.

2.3 The effect of livelihood assets on community well-being

Well-being is one of the livelihood outcomes within the Sustainable Livelihood Framework [8]. It refers to a state of physical, mental, and social well-being encompassing various aspects such as health, education, security, and happiness. Within this framework, improved well-being indicates that the livelihood strategies implemented have successfully enhanced the quality of life for individuals or households. DFID explains that by understanding and optimizing the interactions among assets, individuals and communities can develop more effective strategies to achieve positive livelihood outcomes, including enhanced well-being. The relationship between livelihood assets and well-being has also been discussed by Tao and Wall [9] in their research, which states that greater access to capital or assets can contribute to improved well-being, particularly subjective well-being. However, in contrast to organic livelihood strategies that evolve over generations, tourism-driven changes often introduce rapid shifts from extractive activities (agriculture) to service-based economies [30]. In this context, subjective well-being may become less dependent on the physical ownership of natural resources and more reliant on access to social networks and financial instruments [12]. This shift creates a unique well-being profile where social inclusivity and institutional trust replace traditional land-based security as the primary pillars of life satisfaction [31]. This relationship serves as the theoretical foundation for the hypotheses in this study, as illustrated in Figure 1.

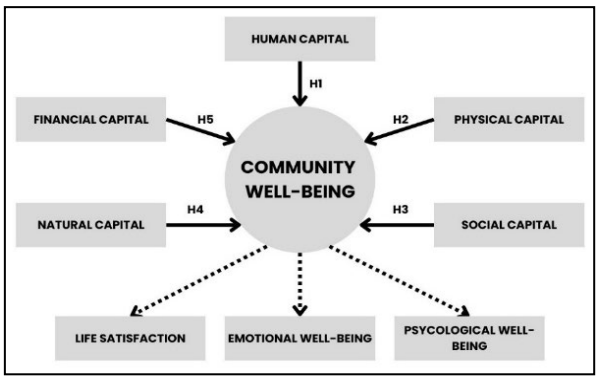

Figure 1. Hypotheses model

3. METHOD

3.1 Data collection and sampling

This study uses primary data obtained through direct interaction with respondents. The primary survey was conducted in Ketapanrame Village, Trawas Sub-district, Mojokerto Regency, to determine the influence of livelihood assets on community well-being. Primary surveys in this study were carried out through interviews, questionnaires, and observations. Prior to distributing the questionnaire to the community, this study conducted a questionnaire trial by distributing it to several individuals (3–5 people) in each hamlet of Ketapanrame Village. This trial serves as a basis for determining whether the prepared questionnaire is understandable to the community and relevant to the local context. After the trial is completed, the questionnaire is distributed to respondents in each hamlet proportionally to the determined sample size.

This study uses samples from the population of households (Kartu Keluarga or KK) residing in Ketapanrame Village, Trawas Sub-district, Mojokerto Regency. The use of households as the sample unit is based on the rationale that livelihood assets are internal factors influencing and playing a significant role in household decision-making mechanisms for engaging in livelihood strategies [14, 16]. The sampling technique used in this study is Probability Sampling. The type of Probability Sampling used is Simple Random Sampling. The advantage of Simple Random Sampling is its ability to produce unbiased, representative samples in which every member of the population has an equal probability of selection [32]. The sampling size in this study is determined using the table developed by Krejcie and Morgan [33], which provides a 95% confidence level with a 5% margin of error.

Based on population data obtained from the official village website (ketapanrame.desa.id), the number of households in the village profile of Ketapanrame, Trawas Sub-district, Mojokerto Regency is 1,968, rounded up to 2,000 households, with a total population of 5,591. Therefore, the sample size used in this study is 322 households. The determination of this sample size considers population representation so that the study results can accurately and reliably describe the village tourism conditions. Data for this study were collected through a structured survey administered to a total of 350 respondents. The sample size was rounded upward to avoid statistical bias and to ensure adequate representation of households across all hamlets in Ketapanrame Village. In addition, sample selection considers factors such as socio-economic diversity, level of involvement in the tourism sector, and geographic distribution within the village. This aims to ensure that the obtained data reflects the diverse characteristics of the tourism village community. The variables considered in this study are presented in Table 1.

The data collection process was carried out over a period of approximately three weeks using a simple random sampling technique, allowing each household an equal probability of being selected as a respondent. To facilitate efficient data distribution, several trained local youths were recruited to assist in administering the questionnaires. Prior to fieldwork, these assistants received a short briefing explaining the meaning and intent of each questionnaire item to ensure consistency in administering the survey and clarifying respondent questions during data collection. On average, each respondent required approximately 10–15 minutes to complete the questionnaire. This approach enabled the researchers to gather data that were both reliable and evenly distributed across different hamlets within the village. To protect research subjects, this study was conducted under official administrative permission from the village government. Informed consent was obtained from all respondents prior to data collection, ensuring that their participation was entirely voluntary. All collected data, including personal information, are treated with strict confidentiality and used exclusively for academic purposes to ensure the privacy and safety of the participants.

3.2 Structural Equation Modeling–Partial Least Squares

In this study, hypothesis testing uses SEM analysis, specifically the SEM-PLS method. SEM-PLS does not require a large sample size and allows for measurement scales such as nominal, ordinal, and continuous. PLS-SEM is used to

examine predictive relationships between 22 constructs of livelihood assets and 19 constructs of subjective well-being (Table 1) and determining whether a relationship or influence exists among them determining whether a relationship or influence exists among them [34]. SEM-PLS analysis consists of the following stages.

Table 1. Variables, sub variables, and indicators considered in this study

Variable	Sub Variables	Indicators	Source
Livelihood assets	Human capital	Community knowledge in utilizing tourism potential in the village to increase income (M1)	[35]
		Availability of skills training or job training, especially related to tourism activities (M2)	[35, 36]
		Community ability to use skills to increase income (M3)	[37]
		Health insurance ownership (M4)	[35, 38]
	Physical capital	Status of homeownership of the community (F1)	[37, 38]
		Number of vehicles per household (F2)	[37]
		Ease of accessing healthcare facilities (F3)	[35, 37]
		Ease of accessing educational facilities (F4)	[38]
		Household access to water (F5)	
		Household access to electricity (F6)	[26, 35]
		Condition of roads used by the community for activities and work (F7)	
	Social capital	Benefits felt from joining organizations and/or communities (S1)	[37]
		Community participation in village tourism (S2)	[35]
		Community trust in the village government (S3)	[35]
		Community trust in the government agency managing tourist destinations (BUMDES) (S4)	[35]
	Natural capital	Utilization of natural wealth potential to improve well-being (A1)	[37]
		Utilization of land for business development (A2)	[37]
		Quality of village cleanliness due to tourism development (A3)	[38, 39]
	Financial capital	Main income of a household (K1)	[40]
		Side income of a household (K2)	[37]
		Intensity of saving in one year (K3)	[40]
		Ease and intensity of investment in one year (K4)	[40]
Well-being	Life satisfaction	In many ways, the community's life has approached an ideal state (L1)	[11, 12, 28]
		The living conditions of the village community are very good (L2)	
		The community is satisfied with their life (L3)	
		The community has achieved the important things they desire so far (L4)	
		The community will not change their current living conditions they align with expectations (L5)	
	Emotional well-being	In the last year, the community has felt good emotions (E1)	
		In the last year, the community has felt positive emotions (E2)	
		In the last year, the community has felt pleasant emotions (E3)	
		In the last year, the community has felt joyful emotions (E4)	
		In the last year, the community has felt happy emotions (E5)	
		In the last year, the community has felt satisfied emotions (E6)	
	Psychological well-being	The community feels they have lived a purposeful and meaningful life (P1)	
		Social relationships among the community are supportive and beneficial (P2)	
		The community feels engaged and interested in their daily activities (P3)	
		The community actively contributes to the happiness and well-being of others (P4)	
		The community is competent and has skills in activities that are important for other members of the community (P5)	
		The community feels that they are good people and have a good life (P6)	
		The community is optimistic about their future (P7)	
		The community feels respected by people around them (P8)	

3.2.1 Validity and reliability of measurement instruments

The validity and reliability of instruments in SEM-PLS in this study are evaluated using outer model analysis. This analysis ensures that the measurement instruments used are valid and reliable. In the outer model analysis for reflective indicators, the following calculations must be considered:

a. Convergent validity or loading factor values between latent variables and their indicators must be > 0.7.
b. Composite reliability, which measures the reliability of a construct. If the reliability value > 0.7, the construct is considered highly reliable.
c. Average Variance Extracted (AVE), which should be at least 0.5.
d. Cronbach's Alpha, which confirms composite reliability results, should be at least 0.7.

3.2.2 Model fit and suitability evaluation

The next stage is evaluating the goodness and fit of the model. The measurements used in this study to assess model acceptability include collinearity statistics (VIF), path coefficient, R^2, Q^2, and Goodness of Fit (GoF) Index. Before assessing structural relationships, VIF must be examined to ensure no bias in regression results [41]. After assessing model collinearity, bootstrapping and blindfolding are conducted. Bootstrapping is used to calculate path coefficient values and determine the degree of influence among latent variables. In this study, bootstrapping is used to determine the path coefficient and R^2 values in the model. Blindfolding is used to evaluate the model's predictive ability. The adequacy of blindfolding is based on the predictive relevance value (Q^2) of the model. The final step is evaluating the overall model using the GoF Index [42].

3.3 Research hypotheses

This study employs directional hypotheses, as it has a clear

focus on examining the influence of livelihood assets on the well-being of the Ketapanrame Village community, supported by strong theoretical foundations. Based on the research objective, this study uses associative hypotheses, aiming to identify the presumed relationships between two or more variables. The hypotheses in this study are as follows:

H_1: Human Capital has a significant influence on the well-being of the Ketapanrame Tourism Village community, Mojokerto Regency.

H_2: Physical Capital has a significant influence on the well-being of the Ketapanrame Tourism Village community, Mojokerto Regency.

H_3: Social Capital has a significant influence on the well-being of the Ketapanrame Tourism Village community, Mojokerto Regency.

H_4: Natural Capital has a significant influence on the well-being of the Ketapanrame Tourism Village community, Mojokerto Regency.

H_5: Financial Capital has a significant influence on the well-being of the Ketapanrame Tourism Village community, Mojokerto Regency.

4. RESULT

4.1 Validity and reliability of measurement instruments

The validity and reliability of instruments in SEM-PLS are assessed using outer model analysis. The outer model analysis in this study is divided into two stages: convergent validity and discriminant validity. This is the first analysis conducted when using SEM-PLS. It serves to test the validity of an indicator/construct with respect to its latent variable. The following is the outer model calculation conducted in this study.

4.1.1 Convergent validity

Convergent validity analyzes the model based on the loading factor value of each indicator/construct toward its latent variable. If there is a value below the minimum threshold for loading factors, then the corresponding indicator/construct will be eliminated. In addition to loading factor values, this analysis also calculates the AVE, Cronbach's Alpha, and Composite Reliability in the model. The following is the calculation of convergent validity analysis in this study.

A. Outer Model Stage 1

In this first stage, the model calculates the loading factor value for each construct toward its latent variable. A loading factor value is considered valid if it is ≥ 0.7. The following is the calculation of loading factor values for each construct toward its latent variable.

Figure 2 shows the model for calculating loading factors. In this model, it can be seen that the variables of human capital, physical capital, social capital, natural capital, and financial capital are independent variables that influence the well-being variable. Thus, the well-being variable can be considered as a dependent variable. However, the well-being variable also acts as a dependent variable that influences other variables, namely life satisfaction, emotional well-being, and psychological well-being. Therefore, the well-being variable can be considered as functioning both as an independent and a dependent variable in the structural model of this study.

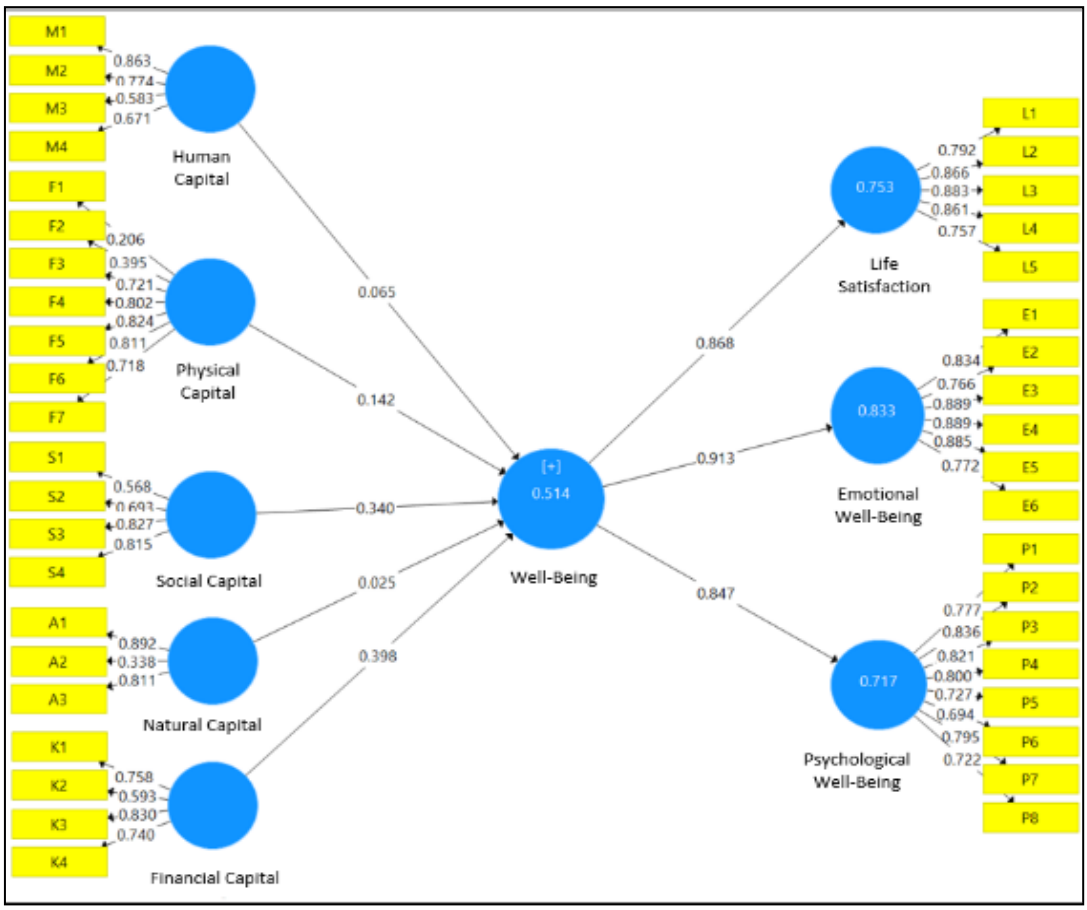

Figure 2. Structural Equation Modeling (SEM) model Stage 1

In addition to conducting validity testing, reliability testing also needs to be carried out. Reliability testing aims to ensure the accuracy, consistency, and precision of the instrument in measuring a construct. Table 2 presents the values of Cronbach's Alpha, Composite Reliability, and AVE for the first stage of the model. It can be seen that all latent variables have a Composite Reliability value greater than 0.7. Among the livelihood assets variables, the highest Composite Reliability value is found in physical capital, which is 0.841, while among the well-being variables, the highest value is found in emotional well-being, which is 0.935. Although the Composite Reliability values in the first stage model are generally valid, the AVE values indicate that one latent variable—physical capital—is not valid, as it only has a value of 0.459. This indicates the need for the elimination of constructs that have a loading factor value of less than 0.7.

Table 2. Test of composite reliability and average variant extracted (AVE) Stage 1

Variable	Sub Variable	Cronbach's Alpha	Composite Reliability (≥ 0.7)	AVE (≥ 0.5)
Livelihood assets	Human capital	0.701	0.818	0.534
	Physical capital	0.786	0.841	0.459
	Social capital	0.701	0.820	0.537
	Natural capital	0.491	0.744	0.523
	Financial capital	0.718	0.823	0.540
Well-being	Well-being	0.944	0.950	0.501
	Life satisfaction	0.889	0.919	0.694
	Emotional well-being	0.916	0.935	0.707
	Psychological well-being	0.903	0.922	0.598

B. Outer Model Stage 2

In this second stage, indicators/constructs with loading factor values below 0.7 from the previous stage will be eliminated. The indicators/constructs eliminated or removed from the model are M3, M4, F1, F2, S1, S2, A2, K2, and P6. The following is the SEM model after eliminating the indicators/constructs that did not meet the required loading factor values.

Figure 3 shows the SEM model after elimination. It can be seen in the image that the human capital variable retains two indicators, M1 and M2. The physical capital variable retains five indicators, F3-F7. The social capital variable has two remaining indicators, S3 and S4. For natural capital, there are two indicators, A1 and A3. Meanwhile, the financial capital variable has three indicators: K1, K3, and K4. As for the well-being variable, which includes life satisfaction and emotional well-being, the number of indicators remains unchanged. However, psychological well-being has a reduction in indicators/constructs to seven indicators: P1, P2, P3, P4, P5, P7, and P8. The number of indicators/constructs in each latent variable in the model has met the calculation standards, even though some were eliminated, as each latent variable must have at least two indicators/constructs.

Figure 3 shows that in this second stage, all indicators/constructs have met the minimum loading factor value of ≥ 0.7. For human capital, the highest loading factor is M1, with a value of 0.925. For physical capital, the highest loading factor is F5, with a value of 0.851. In social capital, the indicators/constructs S3 and S4 have almost the same values, 0.923 and 0.922, respectively. For natural capital, the highest value is A1, with a loading factor of 0.926. In financial capital, the highest loading factor is for the K3 indicator, which is 0.854. Finally, looking at the well-being indicators, the highest value for life satisfaction is on the indicator L3, with a value of 0.883. For emotional well-being, the indicators E3 and E4 have the same value of 0.889. Lastly, for psychological well-being, the largest value is found in indicator/construct P2, with a value of 0.852. In this second stage, Table 3 shows that the Cronbach's Alpha, Composite Reliability, and AVE values all exceed the required thresholds.

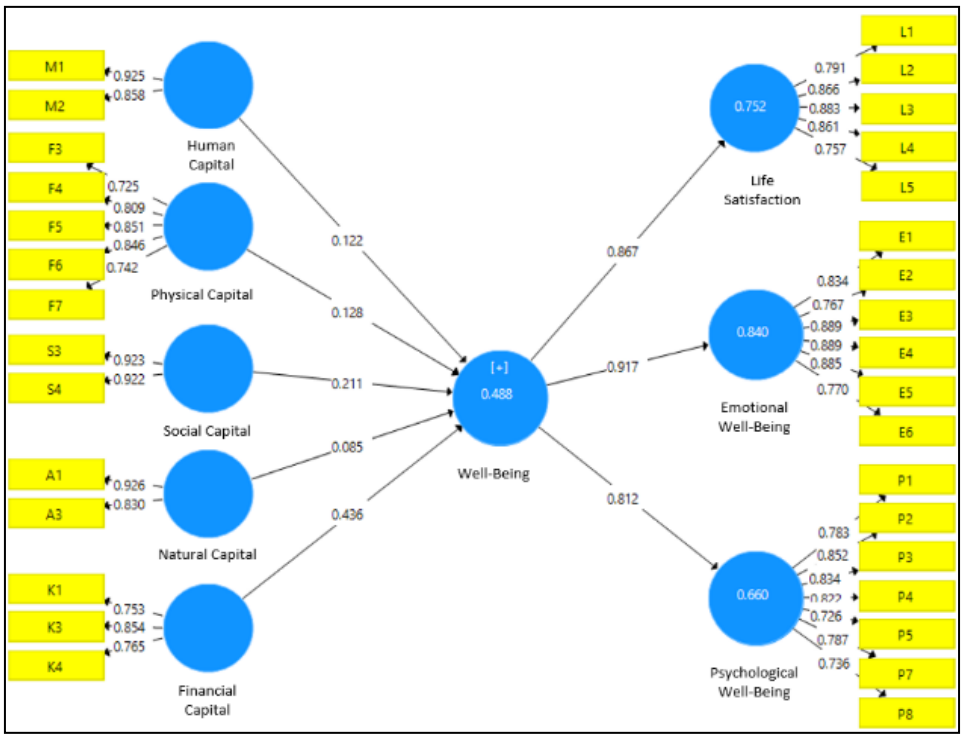

Figure 3. Structural Equation Modeling (SEM) model Stage 2

Table 3. Test of composite reliability and average variant extracted (AVE) Stage 2

Variable	Sub Variable	Cronbach's Alpha	Composite Reliability (≥ 0.7)	AVE (≥ 0.5)
Livelihood assets	Human capital	0.749	0.886	0.796
	Physical capital	0.855	0.896	0.634
	Social capital	0.825	0.920	0.851
	Natural capital	0.716	0.872	0.773
	Financial capital	0.703	0.834	0.627
Well-being	Well-being	0.941	0.947	0.502
	Life satisfaction	0.889	0.919	0.694
	Emotional well-being	0.916	0.935	0.707
	Psychological well-being	0.901	0.922	0.628

4.1.2 Discriminant validity

Discriminant validity testing in this study can be done by examining the cross-loading values, where these values should be greater than 0.70 for each variable. In addition to the cross-loading values, a model is considered to have good discriminant validity if the square root of the AVE for each construct is greater than the correlation between that construct and other constructs in the model.

As shown in Table A1, the cross-loading values of each indicator/construct have exceeded 0.7, with the highest cross-loading value being for indicator/construct A1 at 0.926, and the lowest cross-loading value being for indicator/construct F3 at 0.725. Since all indicators/constructs have cross-loading values greater than 0.7, the next step is to determine the square root of the AVE for each correlation between latent constructs.

A model has good discriminant validity if the square root of the AVE for each construct is greater than the correlation between that construct and other constructs in the model. Table A2 shows the square root of the AVE values based on the Fornell-Lacker table. This table indicates that all the square root of the AVE values for each construct are greater than the correlations between the constructs with other constructs. Since the discriminant validity values meet the required standards, the model can proceed to the inner model calculation.

4.2 Model fit and suitability evaluation

The next step in analyzing the SEM in this study is conducting an inner model analysis, which connects latent variables using bootstrapping. Bootstrapping is used to calculate the path coefficient values, allowing us to determine the strength of the relationships between latent variables. In this study, bootstrapping is used to find the path coefficients and the R^2 values in the model.

4.2.1 Collinearity statistics

Before evaluating the model fit and goodness, it is important to check for collinearity to ensure it does not affect the regression results. A VIF value exceeding 5 suggests a potential collinearity problem among predictor constructs, although issues can also arise with VIF values between 3 and 5. Ideally, VIF values should be close to 3 or lower [41].

Table 4 shows the collinearity values of the five latent variables, namely natural capital, physical capital, financial capital, human capital, and social capital, in relation to well-being. The data in the table indicates that the collinearity values of the five assets with respect to well-being are all below 3. This indicates that the model created in this study does not have significant collinearity issues. Therefore, it can be concluded that the relationships between the predictor variables in the regression model do not exhibit excessively high correlations, meaning that the regression estimates are more reliable and not distorted by multicollinearity.

Table 4. Collinearity statistics (VIF) value

	Well-being
Natural capital	1.615
Physical capital	1.143
Financial capital	1.456
Human capital	1.513
Social capital	1.528

4.2.2 Path coefficient

The path coefficient is used to determine the significance of the relationships between latent variables in the model through the P-values. A model is considered good if the P-values between latent variables are not greater than 0.05. Additionally, based on the P-values, the significance of the model can be observed from the T-statistics, which must be greater than the T-table value (1.989).

Based on Table A3, it can be concluded that most of the relationships between latent variables in this model are significant, except for the relationship between natural capital and well-being. This can be seen from the P-value greater than 0.05 and the T-statistics value greater than the T-table value (1.989) for it to be considered a significant relationship. The significance values for other variables show significant relationships. For example, the relationship between well-being and life satisfaction, emotional well-being, and psychological well-being all have a P-value of 0.000 and very high T-statistics values, indicating strong and significant relationships. However, the relationship between natural capital and well-being, which shows an insignificant relationship, explains that the impact of natural capital on the well-being of the community in Ketapanrame Village is not significant.

4.2.3 R-Square evaluation

The next step is to look at the R-square value during the bootstrapping process in SEM-PLS. If the R-square value > 0.67, it is categorized as strong; if the R-square value > 0.33 and < 0.67, it is categorized as moderate; and if the R-square value > 0.19 and < 0.33, it is categorized as weak.

Table 5. R^2 value

	R^2	Interpretation
Life satisfaction	0.752	Strong
Well-being	0.488	Moderate
Emotional well-being	0.840	Strong
Psychological well-being	0.660	Strong

Based on the R^2 calculation results presented in Table 5, the endogenous variable values show varied results. The life satisfaction variable has an R-square value of 0.752, which is considered strong. This means that the exogenous variables in the model can explain 75.2% of the variation in the life satisfaction variable. Next, the well-being variable has an R-

square value of 0.488, which is considered moderate, indicating that the exogenous variables can explain 48.8% of the variation in this variable. Meanwhile, the emotional well-being variable has an R-square value of 0.840, indicating a very strong relationship, with a contribution of 84.0% from the exogenous variables. Finally, the psychological well-being variable has an R-square value of 0.660, which is also considered strong, where the exogenous variables explain 66.0% of the variation in this variable. The high R-square values for emotional well-being and life satisfaction suggest that the majority of variance in community well-being can be addressed through strategic management of livelihood assets. For planners, this confirms that interventions in social and financial capital are primary drivers of community flourishing. Therefore, this model demonstrates a significant level of association between the exogenous variables and each endogenous variable.

4.2.4 Q-Square value

To evaluate the predictive ability of the PLS-SEM model, the Q^2 value is based on the PLS Predict calculation. This technique compares the PLS-SEM model's predictions with predictions from naïve benchmarks (random or simple models). One of the naïve benchmarks is by observing the Q^2 Predict value. If the Q^2 Predict value is greater than 0 (positive), then the PLS-SEM model is considered to have superior predictive ability [43]. Below is the Q^2 Predict table for the model in this study.

Table 6 shows that the Q^2 Predict value has been greater than 0 (positive). For life satisfaction, it has a Q^2 Predict value of 0.379; Well-being has a Q^2 Predict value of 0.468; Emotional well-being has a Q^2 Predict value of 0.440; and finally, psychological welL-being has a Q^2 Predict value of 0.236. From these results, it can be concluded that the model has superior predictive ability.

Table 6. Q^2 value

	RMSE	MAE	Q^2 Predict	Interpretation
Life satisfaction	0.793	0.608	0.379	Valid
Well-being	0.734	0.567	0.468	Valid
Emotional well-being	0.753	0.589	0.440	Valid
Psychological well-being	0.879	0.690	0.236	Valid

Note: RMSE = Root Mean Square Error; MAE = Mean Absolute Error.

4.2.5 Goodness of Fit Index

The GoF Index is an overall evaluation of the model, which includes both the measurement model and the structural model. The GoF Index can only be calculated from the reflective measurement model, which is the square root of the geometric average of the communality (square root of AVE) multiplied by the average R^2 [42]. The interpretation of the GoF Index values is as follows: 0.1 (Low); 0.25 (Moderate); and 0.36 (High). Below is the calculation of the GoF Index for the model used in this study.

Table 7. Goodness of Fit (GoF) Index value

Communality Average (Root of AVE)	Average R^2 Value	GoF Index
0.829	0.685	0.753

Note: AVE = Average Variance Extracted.

Based on the GoF Index analysis, the model in this study shows very good fit with a GoF Index value of 0.753 (Table 7). This value indicates that the model not only meets the fit standards but also has strong predictive and explanatory abilities. Therefore, it can be concluded that the proposed model has high global validity, both in terms of measurement (measurement model) and structural relationships (structural model).

5. DISCUSSION

The results demonstrate that livelihood assets particularly social and financial capital serve as strong predictors of community well-being in Ketapanrame. While the cross-sectional nature of this study precludes a definitive temporal sequence, the strong association suggests that tourism-driven asset shifts are central to the village's development trajectory. Future longitudinal research is recommended to map these changes over time. Based on these associations, the SEM-PLS analysis findings regarding the state of livelihood assets and their relationship with the well-being of Ketapanrame tourism village residents are as follows:

- The first-stage validity results indicate that 9 indicators—8 from livelihood assets and 1 from well-being—were invalid due to loading factor values below 0.7. These include: the community's ability to use skills to increase income (M3), health insurance ownership (M4), homeownership status (F1), the number of vehicles per household (F2), perceived benefits from participating in organizations/communities (S1), community involvement in village tourism (S2), land use for business development (A2), and supplementary household income (K2). This suggests these eight indicators do not significantly influence well-being in Ketapanrame Village.
- Other indicators in livelihood assets, however, exhibit a significant impact on well-being. For instance, in human capital, community knowledge in leveraging village tourism potential to increase income (M1) and the availability of skills or vocational training related to tourism (M2) notably enhance well-being. This aligns with Aazami and Shanazi's [35] findings, where improving knowledge and skills contributed to economic opportunities and overall quality of life. Similarly, Setiawan et al. [36] emphasized the critical role of skills training in sustaining village tourism development.
- In physical capital, indicators such as access to healthcare (F3), education (F4), water (F5), electricity (F6), and road conditions (F7) show positive values in the model, confirming their influence on well-being. Aazami and Shanazi et al. [35] corroborated this, noting that enhanced infrastructure and transportation directly support household well-being and reduce vulnerability. Pradnyaswari et al. [38] also found that physical assets like education and healthcare facilities, utilities, and roads have high sustainability value, indirectly boosting well-being.
- For social capital, trust in the village government (S3) and the tourism management body (BUMDES) (S4) significantly affect well-being. Interviews with

residents revealed that the village head and BUMDES Mutiara Welirang are highly trusted due to their achievements and tangible impact on livelihoods. Aazami and Shanazi et al. [35] similarly identified trust in government and tourism institutions as pillars of sustainable destination management, indirectly fostering community well-being.

- Valid indicators in natural capital include leveraging natural resources for well-being (A1) and environmental cleanliness due to tourism (A3). Despite valid loading factors, the path coefficient analysis deemed natural capital insignificant (significance > 0.05). This contrasts with prior research [12], stating that natural assets like land and resources form a livelihood foundation. This may occur because the results of the primary survey indicate that not all residents have direct access to, or derive economic benefits from, natural assets—either due to limited land ownership or restricted involvement in the tourism sector.
- In financial capital, primary household income (K1), savings frequency (K3), and investment ease/frequency (K4) influence well-being. The village head's initiative to encourage investments in tourism facilities has enabled residents to build financial assets beyond primary income. This aligns with Sari et al. [40], who found that tourism development boosts financial capital through new opportunities.
- The R^2 values demonstrate a robust influence of livelihood assets on well-being: life satisfaction (0.752), emotional well-being (0.840), and psychological well-being (0.660).

The relationship between livelihood assets and the well-being of Ketapanrame Village community shows significant interdependence. Social capital and financial capital are statistically the most influential factors on community well-being, as indicated by their respective p-values of 0.000. Social capital reflects the strength of interpersonal relationships within the community and trust levels in village institutions such as the Village-Owned Enterprises (BUMDES), which encourage active participation in tourism activities and community investments. Meanwhile, financial capital indicates residents' ability to access and manage income sources, including through tourism share systems that provide regular passive income. Both factors underscore how relational and practical financial aspects form the foundation for building stable emotional satisfaction and meaning in everyday community life. In this context, active community involvement in the village's economic and social structure serves as a crucial bridge to improving quality of life.

The statistical insignificance of natural capital ($p = 0.105$) offers a crucial insight into the Ketapanrame model. First, the village has transitioned toward a service-based tourism economy, where well-being is derived from labor and capital investment rather than direct natural resource extraction. Second, natural assets in Ketapanrame function as 'common-pool resources'; while they provide the aesthetic backdrop for tourism, they are not perceived as individual assets that directly contribute to personal household well-being in the same way as private savings or skills. Lastly, the rise of artificial tourism attractions may be offsetting the perceived value of raw natural capital among the local community. Conversely, social and financial capital exhibit more tangible and directly measurable benefits distributed among a majority of the community. In this structural context, while natural capital appears substantial, its influence on well-being is not as pronounced as that of the other two capitals. Therefore, village managers must not solely rely on physical potential and landscape but also strengthen social inclusivity and economic access to enhance well-being more broadly and equitably felt throughout the community—a view that echoes [44], who implicitly argues that the availability and effective management of diverse livelihood assets are the fundamental pillars of community well-being.

6. CONCLUSIONS

Based on the SEM-PLS analysis, tourism development in Ketapanrame Village is strongly associated with community livelihood assets, which collectively explain a substantial portion of community well-being, specifically 84.0% of emotional well-being and 75.2% of life satisfaction. These high R^2 values indicate that asset-based management is a primary driver of community flourishing in this context. Hypotheses H1, H2, H3, and H5 were supported with significant path coefficients, while H4 (Natural Capital) was rejected ($p = 0.105$), likely due to the village's transition toward a service-based tourism model that reduces direct reliance on extractive natural resources.

The findings highlight that financial capital is the strongest determinant of well-being ($p = 0.000$). To address the barrier identified by the elimination of indicator K2 (secondary income), the village government and BUMDES Mutiara Welirang must broaden the existing tourism investment share system. Specific actions should include (1) Implementing a more inclusive revenue-sharing mechanism that allows low-income households who currently lack the capital for large investments to participate through micro-investment schemes. (2) Institutionalizing financial literacy programs to ensure residents can manage the dividends from tourism units effectively, preventing the "shocks" associated with seasonal tourism fluctuations.

Social capital also plays a critical role, yet the elimination of indicator S2 (community participation) reveals a significant structural barrier: participation may currently be symbolic rather than substantive. To move beyond this, the village administration must (1) Shift from passive information disclosure to a collaborative governance model, where residents in each hamlet have a direct vote in the annual planning of BUMDES business units. (2) Strengthen local social networks, such as youth organizations (*Karang Taruna*), to act as intermediaries between the BUMDES management and the broader community to maintain the high levels of institutional trust (S3 and S4) identified in the model.

Regarding physical capital, while infrastructure is generally supportive, planners must address the elimination of F1 (homeownership status) and F2 (number of vehicles) as well-being predictors. This suggests that "upgrading infrastructure" should not focus on individual asset accumulation but on public-integrated facilities. Recommendations include prioritizing road quality and clean water supply (F5 and F7) that serve both the high-density tourism zones and the outlying agricultural hamlets to prevent resource competition between tourists and residents.

Finally, the rejection of Natural Capital (H4) and the

elimination of A2 (land utilization for business) suggest that residents with limited land ownership are being left behind in the nature-based value chain. Strategy should focus on developing communal agro-tourism schemes on village-owned land (*Tanah Kas Desa*) to provide landless residents with opportunities to benefit from the village's mountainous geographical location without requiring private land ownership.

7. SUGGESTIONS

This study serves as a reference for tourism-based village development planning, promoting sustainable management through community participation to enhance well-being in Ketapanrame Village. Regional planners can utilize these findings to design tourism strategies that strengthen human, physical, social, natural, and financial capital while maintaining environmental balance. This study is limited to analyzing the influence of livelihood assets on well-being; thus, future research could explore optimization strategies.

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APPENDIX

Table A1. Cross loading table

	Human Capital	Physical Capital	Social Capital	Natural Capital	Financial Capital	Life Satisfaction	Emotional Well-being	Psychological Well-being
M1	0.925	0.141	0.302	0.419	0.506	0.500	0.508	0.192
M2	0.858	-0.036	0.278	0.345	0.394	0.343	0.359	0.183
F3	0.140	0.725	0.254	0.170	-0.014	0.183	0.139	0.078
F4	0.054	0.809	0.190	0.159	-0.017	0.236	0.198	0.049
F5	0.044	0.851	0.283	0.296	0.034	0.189	0.221	0.050
F6	0.075	0.846	0.258	0.282	0.066	0.235	0.224	0.091
F7	-0.013	0.742	0.162	0.224	-0.033	0.168	0.237	0.031
S3	0.256	0.328	0.923	0.447	0.320	0.381	0.419	0.374
S4	0.345	0.202	0.922	0.533	0.344	0.389	0.410	0.366

A1	0.433	0.199	0.489	0.926	0.367	0.354	0.445	0.335
A3	0.309	0.336	0.444	0.830	0.193	0.256	0.323	0.189
K1	0.397	-0.009	0.261	0.218	0.753	0.471	0.445	0.237
K3	0.371	-0.026	0.306	0.274	0.854	0.404	0.470	0.557
K4	0.463	0.076	0.288	0.306	0.765	0.387	0.426	0.289
L1	0.520	0.227	0.278	0.386	0.413	0.791	0.614	0.397
L2	0.408	0.091	0.377	0.305	0.475	0.866	0.659	0.524
L3	0.373	0.288	0.405	0.291	0.406	0.883	0.624	0.421
L4	0.419	0.197	0.337	0.232	0.495	0.861	0.608	0.453
L5	0.293	0.274	0.335	0.267	0.401	0.757	0.667	0.361
E1	0.427	0.075	0.430	0.402	0.559	0.658	0.834	0.409
E2	0.363	0.155	0.352	0.297	0.515	0.575	0.767	0.552
E3	0.465	0.255	0.325	0.379	0.478	0.611	0.889	0.503
E4	0.416	0.166	0.387	0.384	0.488	0.658	0.889	0.588
E5	0.462	0.234	0.339	0.407	0.450	0.621	0.885	0.491
E6	0.364	0.419	0.437	0.380	0.356	0.719	0.770	0.434
P1	0.198	0.141	0.435	0.330	0.348	0.468	0.572	0.783
P2	0.153	0.157	0.368	0.277	0.382	0.450	0.522	0.852
P3	0.159	0.029	0.264	0.284	0.406	0.431	0.490	0.834
P4	0.101	0.052	0.280	0.188	0.411	0.364	0.363	0.822
P5	-0.001	-0.049	0.146	0.121	0.230	0.340	0.299	0.726
P7	0.298	0.164	0.427	0.218	0.421	0.507	0.581	0.787
P8	0.214	-0.156	0.238	0.283	0.414	0.276	0.385	0.736

Table A2. Square root value of Average Variance Extracted (AVE) with latent constructs

	Human Capital	**Physical Capital**	**Social Capital**	**Natural Capital**	**Financial Capital**	**Life Satisfaction**	**Emotional Well-being**	**Psychological Well-being**
Human capital	0.892							
Physical capital	0.073	0.796						
Social capital	0.325	0.288	0.923					
Natural capital	0.432	0.287	0.531	0.879				
Financial capital	0.511	0.013	0.360	0.334	0.792			
Life satisfaction	0.483	0.256	0.418	0.355	0.527	0.833		
Emotional well-being	0.496	0.258	0.449	0.446	0.564	0.761	0.841	
Psychological well-being	0.210	0.076	0.402	0.311	0.474	0.520	0.592	0.793

Table A3. Path coefficient value

	Original Sample (O)	**Sample Mean (M)**	**Standard Deviation (STDEV)**	**T Statistics (|O/STDEV|)**	**P Values**	**Interpretation**
Well-being -> Life satisfaction	0.867	0.868	0.016	53.346	0.000	Significant
Well-being -> Emotional well-being	0.917	0.917	0.007	125.589	0.000	Significant
Well-being -> Psychological well-being	0.812	0.813	0.025	32.155	0.000	Significant
Natural capital -> Well-being	0.085	0.089	0.052	1.626	0.105	Not Significant
Physical capital -> Well-being	0.128	0.132	0.039	3.248	0.001	Significant
Financial capital -> Well-being	0.436	0.436	0.050	8.685	0.000	Significant
Human capital -> Well-being	0.122	0.119	0.050	2.444	0.015	Significant
Social capital -> Well-being	0.211	0.211	0.046	4.622	0.000	Significant