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Exploring Relationships Between Financial Literacy And Environmental Sustainability Among The Tribals Through Structural Equation Modelling

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Abstract

Financial literacy is indispensable for sustainability. This study explores the relationship between financial literacy and environmental sustainability among the tribals of Northeast India. An extended theory of planned behaviour was established by adding financial awareness, knowledge and environmental sustainability into the model. The primary data was collected from Mao-Naga tribals through a structured questionnaire, and the sample size consisted of 1110. This research used the partial least square structural equation modelling (PLS-SEM) to test the hypothesis and other statistical analyses. The findings revealed that individuals with financial awareness, knowledge, attitude and behaviour could contribute to climate change promotion, reduce pollution, protect the environment, consciously use natural resources, reuse materials, and invest in green products. Financial behaviour and attitude play a dominant role in determining environmental sustainability. It has been found that being financially literate can promote environmental sustainability. Therefore, governments and regulators should sensitise people through campaigns and educational institutions to develop responsible behaviour for sustainability.

Keywords- financial attitude, financial awareness, financial behaviour, financial knowledge, tribals, environmental sustainability

I Introduction

In recent decades numerous national and international organisations are shifting their attention to curbing CO^2 emissions and other pollutants to subside climate change through the financial system (Bethlendi et al., 2022). They recommend countries to transit behaviour toward a sustainable approach. Eco-friendly investments and green banking are some explicit initiatives undertaken by financial institutions to improve environmental quality (Bethlendi et al., 2022). Global warming has become a challenge to economic stability for every economy (Marx, 2020). This instability can be reduced if individuals learn to save and invest in non-renewable resources sustainably, which is possible when one is financially literate. The financial system can provide industries with innovative green technologies and divert investments to less-polluting sectors (Nathaniel, 2021). Consumers with financial literacy have more awareness of environmental-related issues and have the advantage of quick recuperation from natural disasters (Asbi et al., 2020) than those without financial literacy. For Yong and Tan (2017), financial literacy is an advanced form of education.

Education is required to handle environmental-related issues (Sinha &

Bhattacharya, 2016), enhance pro-environmental behaviour (Chakraborty et al., 2017) and enlighten sustainable behaviour (Kumari & Harikrishnan, 2021). Whatever form may be the literacy, the higher the literacy better the contribution to achieving sustainability (Filippini et al., 2022). In this background, the authors adopt the OECD approach to financial literacy, which is a combination of financial attitude, knowledge, awareness, skills and behaviour required to make sound financial decisions for future well-being (OECD, 2018). Financial literacy is not an end; it aims at sustainability.

Anthropogenic jeopardises ecology's equilibrium and impacts well-being (Danso et al., 2019). The natural disaster resulting from climate change can stress individuals and strain them emotionally, financially, and psychologically (Asbi et al., 2020). Financial literacy can influence sustainability (Jais & Asokumar, 2020), renewable investments (Brent & Ward, 2018), and manage resources without compromising environmental conditions (Warner & Agnello, 2012). Sustainability maximises present benefits without compromising future generations' needs (Brundtland, 1987). Recently, topics on energy-related financial literacy have been emerging for efficient-energy investment with cost consciousness (Blasch et al., 2021). It is necessary to foster individuals' knowledge, awareness, attitude, and behaviours concerning environmental sustainability (Yusliza et al., 2020), which are also components of financial literacy (Candiya Bongomin et al., 2017). Climate change effects urgently invite changing attitudes and behaviour to minimise consequences, which is possible through proper knowledge. In recent decades, economic scientists recommend to seriously look into the psychological and behavioural aspects of consumers (Bethlendi et al., 2022; Ingale & Paluri, 2022). She et al. (2022) proposed that policy-makers and regulators concentrate the financial literacy and its outcome from a psychological perspective while formulating policies to implement effective financial education programmes. Therefore, the current paper anlayse individuals' financial literacy and environmental sustainability from psychological and behavioural perspectives and assesses the individual's view.

1.1 Objectives of the study

This study explored the indirect and direct influence of financial knowledge on financial awareness and attitude, financial awareness and attitude on financial behaviour and financial behaviour on environmental sustainability. It should be noted that after reviewing financial literacy literature concerning financial knowledge, attitude and behaviour (Garg & Singh, 2018; Santini et al., 2019), investment behaviour (Akhtar & Das, 2019), self-efficacy (Amagir et al., 2020), socio-economic factors (Kadoya & Rahim Khan, 2020), financial inclusion (Çera et al., 2021), financial awareness (Eniola & Entebang 2017), natural resource (Chodkowska-Miszczuk et al., 2021), food waste reduction (Szafrańska et al., 2020), and climate change awareness (Rai et al., 2018) no past research were found to be similar with the present model. In addition, past literature on energy-related financial literacy (Brent & Ward, 2018; Filippini et al., 2020), environmental stock investments (Anderson & Robinson, 2021), and sustainable investments (Mavlutova et al., 2022) have been conducted in different backgrounds but not in a tribal context. Therefore, this research proposes a unique standpoint which is justified below:

1) To the best of the authors' knowledge, it is the first to include financial awareness with other financial literacy components and analyse them empirically.
2) The past literature on environmental-related financial literacy concentrated mainly at the industrial and organisational levels, and no research has been found among indigenous tribals individual level.
3) Considering the non-existence of empirical evidence at the individual level, the authors explored the

relationship between financial literacy components and the environmental sustainability of the indigenous Mao-Naga tribe of Northeast India, whose sustenance revolves around ecology.

Thus, the primary objective of this research is to fill these literature gaps. The study used the partial least squares structural equation modelling (PLS-SEM) with a mediation analysis.

2 Literature review and hypothesis development

2.1 An extended theory of planned behaviour

Numerous factors can influence individuals' behaviour, and to identify those factors, Widyastuti et al. (2021) propagate the theory of planned behaviour (TPB), relevant for attitude, knowledge, behaviour, and awareness. The TPB was proposed by Ajzen (1991), and it is one of the most effective models for financial literacy (C. C. Yong et al., 2018; Raut, 2020) and environmental studies (Karimi et al., 2021; Saari et al., 2021). However, Ajzen (1991) and researchers like Aziz et al. (2021) opined to the modification and extension of TPB by adding or omitting external constructs due to its limitations in explaining individuals' actual behaviours so as to improve its predictive power. Therefore, the authors modified TPB structural model by replacing constructs with financial knowledge, awareness and environmental sustainability in the present conceptual framework, as depicted in figure 1

2.2 Financial knowledge

Knowledge is one of the most vital factors influencing risk perception and the ability to judge future risk (Saari et al., 2021). Similarly, financial knowledge is managing financial risks, saving for emergencies, planning for long-term retirement, and purchasing insurance to achieve financial goals (Dewi et al., 2020). Financial knowledge is an imperative antecedent of financial literacy (She et al., 2022). Subjective financial knowledge can affect financial management (Riitsalu and Murakas, 2019), impact financial behaviour (Carpena and Zia, 2020) and can enhance well-being (She et al., 2022). Financial knowledge is the art of managing expenditure, income, and savings in a safety measure (Potrich et al., 2016) and can determine individuals' attitudes towards the ecology and intensify sustainability awareness (Martins et al., 2020). Given the significant role played by financial knowledge in explaining financial awareness and financial attitude, this study formulates the following hypotheses:

$H1_a$: Financial knowledge is positively related to financial attitude

$H1_b$: Financial knowledge is positively related to financial awareness

2.3 Financial attitude

Attitude can be a positive or negative foundation for behavioural outcome (Raut, 2020). So also, 'financial attitude is the choice of determining favourable and adverse beliefs about a specific financial object and matter which can transform into action' (Khan et al., 2020). Financial attitude is the psychological inclination manifesting personal financial skills, evaluation of the economic concept, event or objects and pivotal for financial behaviour and decision-making (She et al., 2022). According to Kadoya and Rahim Khan (2020), financial attitude looks at future benefits and financial matters in the long-term well-being (Białowolski et al., 2020). Financial attitude and knowledge are the essential antecedents of financial behaviour (Çera et al., 2021). Authors try to comprehend the financial attitudes of tribals with other financial components by examining the following relationships:

$H2_a$: Financial attitude is positively related to financial behaviour

$H2_b$: Financial attitude positively mediates between financial knowledge and financial behaviour

2.4 Financial awareness

Financial awareness is one of the dimensions of financial literacy. It is the knowledge of financial products (George-Jackson & Jones Gast, 2014) responsible for achieving financial goals and handling financial strategies and outcomes (Eniola & Entebang, 2017). Financial awareness is individuals' familiarity with household budgets, bank accounts, insurance, loan avenues, inflation, unit trust funds, employee provident funds, and other financial services (Carpena and Zia, 2020). Financial awareness can contribute to human capital and influence personal finance (Huston, 2015) and financial behaviour (C. C. Yong et al., 2018). Lack of financial awareness can result in low confidence and poor competency in financial decision-making and lead to risky investment behaviour (Sunderaraman et al., 2020).

$H3_a$: Financial awareness is positively related to financial behaviour

$H3_b$: Financial awareness positively mediates between financial knowledge and financial behaviour

2.5 Financial behaviour

Financial behaviour is an essential element of financial literacy (Potrich et al., 2016) and can be defined as any behaviour relevant to money management and planning, such as investing, insuring, saving, borrowing, and spending (She et al., 2022). It can measure consumers' financial skills (Kadoya & Rahim Khan, 2020) and indicate actions that can shape their financial well-being (NCFE, 2019). Past research has shown that it is one of the determining constructs for individuals' financial well-being and psychological factors (She et al., 2022). Simultaneously, poor financial behaviour can affect the consumers' environmental behaviour (Scherer et al., 2018). Thus, the authors try to analyse its relationship with environmental sustainability by examining the following hypothesis.

H_4: Financial behaviour is positively related to environmental sustainability

2.6 Environmental sustainability

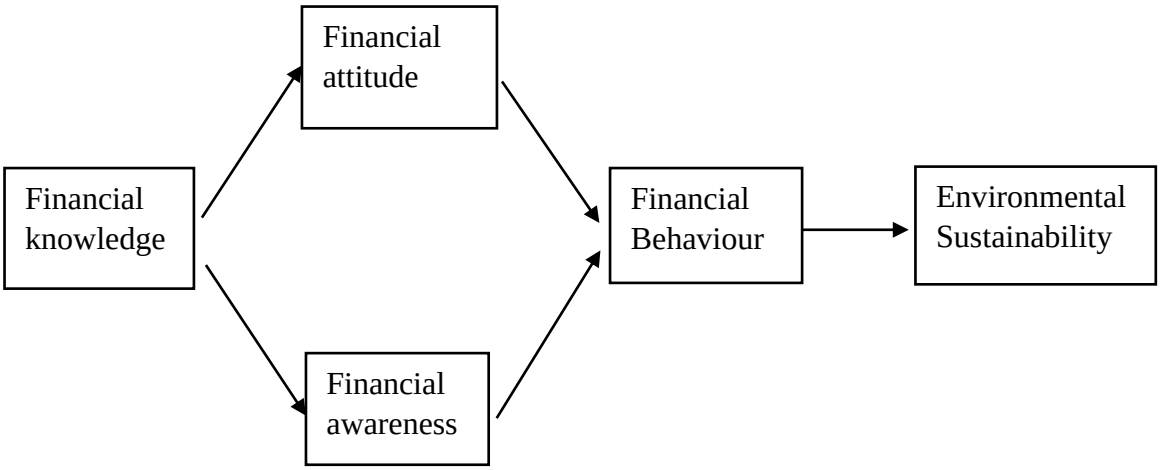
Sustainability has social, economic and environmental dimensions (Hervani et al., 2017) with complex coverage, and every country is bound to implement their regulated strategies (Allen et al., 2019). Environmental sustainability revolves around responsible interactions with resources that support long-term ecological quality (Dhahri et al., 2021). Consciously utilising resources can alleviate environmental quality and stimulates non-renewable consumption (Dogan & Seker, 2016). When one is environmentally sustainable in behaviour, they spend no additional costs but learn to modify personal habits (Khan et al., 2020). With susceptible climate change, financial literacy is vital for an emerging economy like India as their socio-economy revolves around agriculture (Sharma et al., 2021) which depends on monsoon fed-rain and gets affected due to global warming. Financial system development can reduce environmental degradation and carbon emissions (Dogan & Seker, 2016). Environment sustainability is not an oxymoron but achievable through simultaneous intensification (Marx, 2020). Recently financial systems started implementing strategies addressing environmental issues and encouraging individuals to make sustainable investments (Shanmugam et al., 2022), and green banking is one such approach (Ziolo et al., 2017). This study embraces sustainable development goals 7,9,12, and 13 like that of Oláh et al. (2020) for environmental sustainability in the Indian context. Considering the importance of stated theory and constructs, we developed the conceptual model for empirical analysis, as shown in figure 1.

H_5: Financial attitude and financial behaviour sequentially mediate between financial knowledge and environmental sustainability

H_6: Financial awareness and financial behaviour positively mediate between financial knowledge and environmental sustainability

Figure 1

Research model



3 Methodology

3.1 Design and sample

This study applied cross-sectional and structured questionnaires were administered to Mao-Naga tribes of Northeast India prominently settled in Nagaland and Manipur states, aged above 18 years and willing to participate in the research. The study employed a simple random and convenient sampling method. The first part of the questionnaire demonstrated respondents' demographic profiles such as age, gender, level of education and income in Indian currency. The second part consisted of statements for respondents to self-assess their financial knowledge, financial awareness, financial attitude, financial behaviour and environmental sustainability. The pilot study was carried out among 210 adults to ensure consistency. After screening the outliers, 1110 data were considered for the research. PLS-SEM was used to examine the hypothesis and other statistical power. The sample comprises 560 (50.5%) females and 550 (49.5%) males. The majority belong to the age group of 18-29 (71%). The students represented the highest (43.7%) in occupation. As most of them are students with no side income or do not avail of any scholarships, 56.6% represented the no-income group indicating low income among the tribals. Table 1 depicts the respondents' profiles.

Table 1 Respondents' profile

Profile		N	%
Gender	Male	550	49.5
	Female	560	50.5
Age	18-29	788	71
	30-39	206	18.6
	40-49	72	6.5
	50-59	30	2.7
	60 Above	14	1.3
Education	No formal education	11	1
	Primary school/up to class 6	17	1.5
	Lower secondary/class 7-9	41	3.7
	Higher Secondary/Class 10-12	221	19.9

	Undergraduate	470	42.3
	Postgraduate	345	31.1
	PhD	5	0.5
Occupation	Self-employed/ work for yourself (agriculture)	145	13.1
	Looking for work/ unemployed	187	16.8
	Student	485	43.7
	Government salaried	59	5.3
	Private Salaried	151	13.6
	Housewife/ homemaker	61	5.5
	Retired	22	2
Income in Indian Rupee	10000	88	7.9
	10000-50000	192	17.3
	50001-200000	119	10.7
	200001-500000	52	4.7
	Above 500001	31	2.8
	No income	628	56.6

3.2 Measures

Financial knowledge is measured by four statements adopted from (Sivaramakrishnan et al., 2017; Bongomin et al., 2018). Respondent's financial products and services awareness were measured on five statements adopted from Eniola and Entebang (2017) and Carpena and Zia (2020). Eight statements were adopted for financial attitude from Potrich et al. (2015) and Bongomin et al. (2018). A five-item scale from (Potrich et al., 2015 and Bongomin et al., 2018) was adopted to assess the individual's financial behaviour. Five-statements scales (Lafortune et al., 2018; Ando et al., 2019; Berglund et al., 2020) were used to assess the sustainable environmental behaviour of participants. All these responses were measured on a seven-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree).

3.3 Data analysis

The present study used the variance-based PLS-SEM to estimate the construct relationships, which is preferred over conventional CB-SEM due to its prediction feature (Joseph F. Hair & Sarstedt, 2019; Chin et al., 2020) and is also suitable for mediation analysis (Beckers et al., 2018). PLS-SEM is a multivariate technique appropriate for management, accounting, finance, and marketing research (Joe F. Hair et al., 2012) and can yield robust results for a small sample size above 100 (N=1110) (Hair et al., 2019; Yang et al., 2021). The PLS-SEM is a two-stage procedure comprising measurement and structural models (J. E. Hair et al., 2014). In the measurement model, the internal consistency and reliability were evaluated by Cronbach's alpha (α) and composite reliability (CR); all these values should be greater than 0.7. The average variance extracted (AVE) metric is used to confirm convergent validity, and all values should be greater than 0.5 but lesser than their respective CR values
(J. E. Hair et al., 2014; She et al., 2022). The discriminant validity specifies how the empirical result of one construct is distinct from the other (Joseph F. Hair et al., 2019). The Fornell-Lacker and the Hetrotrait-Monotrait (HTMT) criteria reveal these results. In the case of the Fornell-Lacker ratio, the diagonal result should be higher than all other corresponding values, and on the other hand, the obtained HTMT ratio should be less than 0.85 (Henseler et al., 2015). The current paper reported both the results of Fornell-Lacker and the HTMT ratio. Collinearity must be investigated for biased free regression results before assessing

the structural model by a variation inflation factor (VIF), and values lesser than 3 are recommended (Joseph F. Hair et al., 2019). The bootstrapping technique with 5000 sampling iterations, blindfolding, and IPMA (post hoc analysis) were used to test proposed hypotheses and other structural results.

4 Results

4.1 Measurement results

According to Hair et al. (2019), the first step in assessing the measurement model is to examine the factor loadings for items' reliability, and those greater than 0.50 are considered. In the present paper, factor loading ranges from 0.674 to 0.869. All constructs have strong internal consistency and reliability as indicated by (α) ranging from 0.825 to 0.906 and CR from 0.825 to 0.904. The AVE values ranged from 0.531 to 0.618, which are higher than 0.50 and meet the given threshold, establishing convergent validity. Table 3 demonstrates discriminant validity results where all the diagonal values are greater than the corresponding value in the case of Fornell Lacker, and for the HTMT ratio, all values are lower than 0.85, indicating discriminant validity evidence. There is no multicollinearity issue among the endogenous constructs as all VIF values are below 3. The measurement assessment is robust and relevant in proceeding with the structural evaluation. Figure 2 demonstrates constructs' diagrammatical relationship and their algorithm, and Table 2 shows the measurement results.

Figure 2 Measurement model with factor loadings, path coefficient and Cronbach's alpha

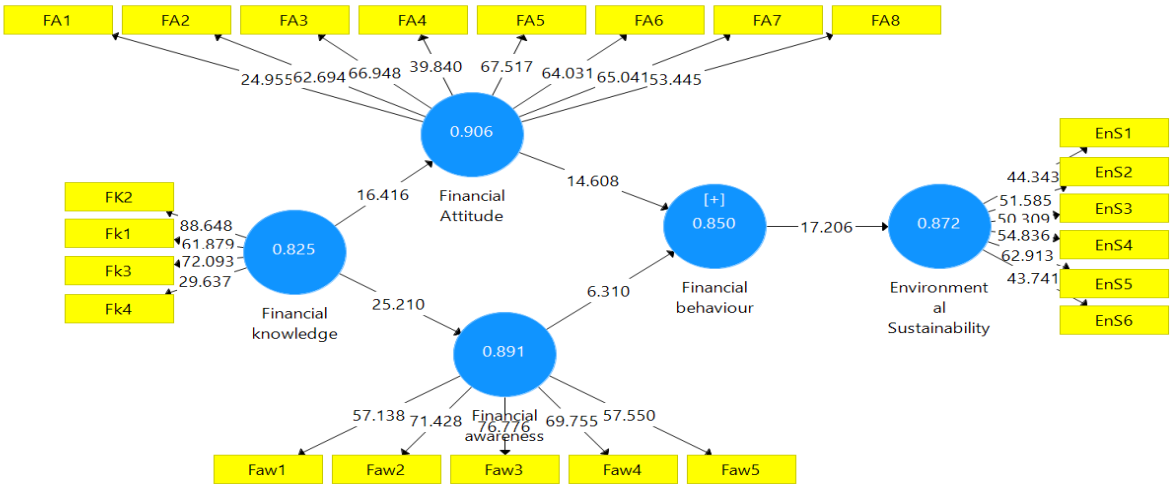


Table 2 Measurement results

Construct	Items	Loadings	VIF	α	CR	AVE
Environmental sustainability	EnS1	0.689	2.008	0.872	0.904	0.610
	EnS2	0.774	1.963			
	EnS3	0.742	1.795			
	EnS4	0.699	2.046			
	EnS5	0.718	2.208			
	EnS6	0.745	1.771			
Financial attitude	FA1	0.775	1.330	0.906	0.925	0.609
	FA2	0.708	2.488			
	FA3	0.777	2.172			

	FA4	0.810	1.753			
	FA5	0.717	2.896			
	FA6	0.695	2.891			
	FA7	0.674	2.829			
	FA8	0.719	2.270			
Financial awareness	Faw1	0.770	2.367	0.891	0.920	0.696
	Faw2	0.731	2.971			
	Faw3	0.752	2.500			
	Faw4	0.869	2.135			
	Faw5	0.802	2.007			
Financial behaviour	FB1	0.695	1.752	0.850	0.893	0.625
	FB2	0.774	2.502			
	FB3	0.764	2.451			
	FB4	0.730	1.882			
	FB5	0.681	1.694			
Financial knowledge	FK1	0.714	1.945	0.825	0.885	0.661
	FK2	0.739	2.497			
	Fk3	0.756	2.161			
	Fk4	0.735	1.321			

Note: EnS: Environmental sustainability, FA: Financial attitude, Faw: Financial awareness, FB: Financial behaviour, FK: Financial knowledge, VIF: Variation inflation factor, α: Cronbach's alpha, CR: Composite reliability, AVE: Average variance extracted

4.2 Structural model assessment

The structural model demonstrates constructs' relationships (Joseph F. Hair et al., 2019). Hair et al. (2017) stated that for PLS-SEM analysis, the t-value equal to or above 1.96 is considered significant. Table 4 tabulates the standardised path coefficient, t-values, and confidence-biased interval levels. In evaluating the direct effect, this study revealed significant relationships between financial knowledge and financial attitude (β= 0.448, t-value=16.39, p-value =0.000), financial knowledge and financial awareness (β= 0.587, t-value= 25.556, p-value =0.000), financial attitude and financial behaviour (β= 0.448, t-value= 14.971, p-value =0.000), financial awareness and financial behaviour (β= 0.206, t-value= 6.472, p-value =0.000), and financial behaviour and environmental sustainability (β= 0.463, t-value= 17.067, p-value =0.000). Thus, supporting hypotheses $H1_{a,}$ $H1_{b,}$ $H2_{a,}$ $H3_{a,}$ and H4. Moreover, in assessing the mediation effect, there is a significant mediating relationship between financial knowledge and financial behaviour through financial attitude (β= 0.201, t-value= 10.033, p-value =0.000) and financial knowledge and financial behaviour through financial awareness (β= 0.121, t-value= 5.936, p-value =0.000). Thus, supporting the hypothesis $H2_b$ and H3a. However, H5 and H6 reveal serial mediations, where financial knowledge and environmental sustainability are sequentially mediated by financial attitude and behaviour (β= 0.093, t-value= 7.827, p-value =0.000) and financial awareness and financial behaviour (β= 0.056, t-value= 5.488, p-value =0.000). Thus, the present research model confirms the significance of direct and indirect relationships and supports all hypotheses (H1to H6), which is shown in Table 4.

Table 3 Discriminant validity results

Fornell-Lacker	EnS	FA	Faw	FB	FK

Environmental Sustainability	**0.781**				
Financial Attitude	0.395	**0.780**			
Financial awareness	0.351	0.452	**0.834**		
Financial behaviour	0.462	0.539	0.408	**0.791**	
Financial knowledge	0.431	0.449	0.586	0.518	**0.813**
HTMT					
Environmental sustainability	-				
Financial attitude	0.439	-			
Financial awareness	0.394	0.500	-		
Financial behaviour	0.536	0.608	0.464	-	
Financial knowledge	0.507	0.514	0.678	0.618	

Table 4 Structural results

Paths	β	t-value	confidence intervals
Direct effect			
Financial knowledge→ Financial attitude	0.448	16.39***	(0.395, 0.502)
Financial knowledge→ Financial awareness	0.587	25.556***	(0.542, 0.366)
Financial knowledge→ Financial behaviour			
Financial attitude →Financial behaviour	0.448	14.971***	(0.39, 0.248)
Financial awareness →Financial behaviour	0.206	6.472***	(0.144, 0.267)
Financial behaviour →Environmental sustainability	0.463	17.067***	(0.41, 0.182)
Mediation effect			
Financial knowledge →Financial attitude → Financial behaviour	0.201	10.033***	(0.163, 0.240)
Financial knowledge→ Financial awareness→ Financial behaviour	0.121	5.936***	(0.082, 0.162)
Financial knowledge→ Financial attitude→ Financial behaviour→ Environmental sustainability	0.093	7.827***	(0.071, 0.117)
Financial knowledge→ Financial awareness→ Financial behaviour→ Environmental sustainability	0.056	5.488***	(0.037, 0.077)

Note: β**:** path coefficient, t-value; T-statistics, ***p<0.001, **p<0.01, *p<0.05

In structural measures, the model's explanatory power can be determined by the coefficient of determination (R^2). This R^2 evaluates the variance explained by predicting constructs of financial behaviour on environmental sustainability, and obtained results indicate that the model was adequate as it explained more than 34.4 %. In fact, the R^2 value can vary depending on the context and field of the research; values of 0.02, 0.13, and 0.27 can be considered weak, moderate and substantial for social science studies (Cohen, 1988). Also, the effect size (f^2) metric can assess how removing a predictor construct affects an endogenous construct's value (Joseph F. Hair et al., 2019). All the f^2 have substantial effect sizes except for the relationship between financial awareness and financial behaviours with low f^2. The technique of blindfolding was used to calculate the model's path accuracy of the predictive relevance (Q^2) (Joseph F. Hair et al., 2019). The present model has a predictive relevance as all Q^2 values are higher than zero. Thus, financial literacy components do have a predictive relevance for environmental sustainability, as shown in Table 5.

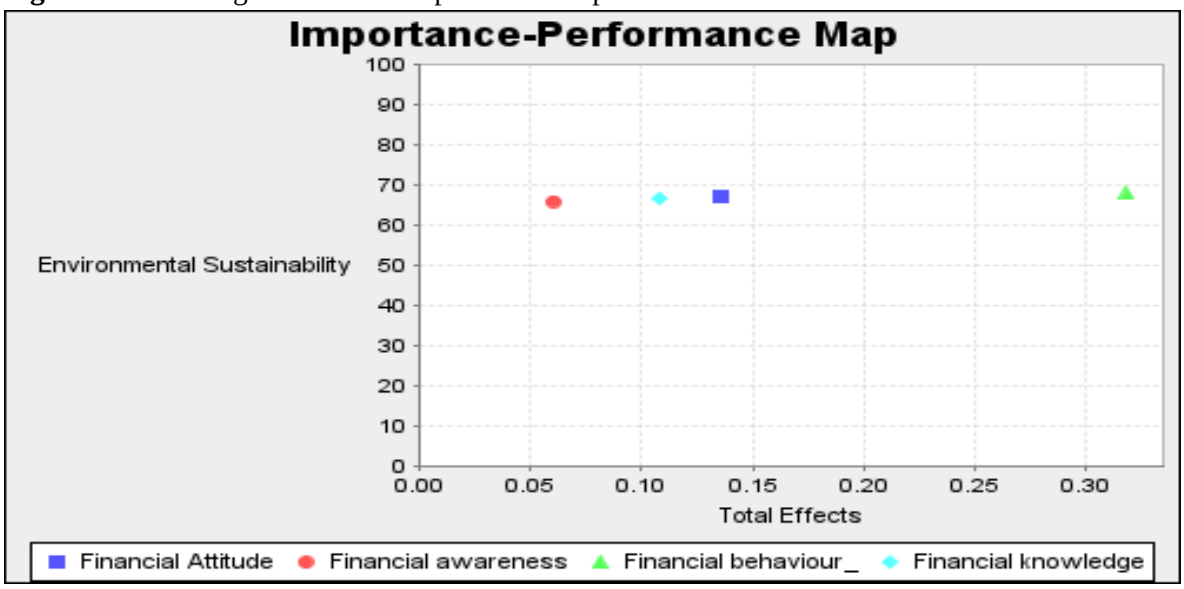
Table 5 Results of f^2 and Q^2

Constructs	R^2	f^2	Q^2
Environmental sustainability	.215		0.128
Financial attitude	.201		0.117
Financial behaviour	.344		0.202
Financial awareness	.326		0.235
Financial attitude →Financial behaviour		0.237	
Financial awareness →Financial behaviour		0.050	
Financial behaviour→ Environmental sustainability		0.273	
Financial knowledge → Financial attitude		0.252	
Financial knowledge → Financial awareness		0.526	

4.3 Importance-Performance Map Analysis (IPMA)

IPMA is the posthoc analysis of PLS-SEM, and the primary purpose is to identify predictors with high importance and performance yield for executive actions. Ringle and Sarstedt (2016) proposed IMPA to provide a profound managerial action by the predecessor constructs for the outcome construct and necessitates attention from policy-makers and researchers. In the current research, environmental sustainability is the target construct predicted by financial knowledge, financial awareness, financial attitude and financial behaviour. The results indicate that financial behaviour has the most significant importance score (0. 319), which predicts that if the tribal individuals improve their financial behaviour performance by a unit, they can improve their environmental sustainability by 68.786. Financial attitude scored (0.136) in importance with performance (66.999), and financial knowledge scored (0.108) in importance with performance (66.581). Further, it shows that the tribal individuals have the lowest financial awareness as importance scored only (0.060) and performance (65.928), indicating a considerable opportunity to improve in this area, as shown in Figure 3. IPMA gives managerial insights that improving financial behaviour and attitude among tribals can tremendously improve the environmental aspect of sustainability.

Figure 3 IPMA diagram with the importance and performance values



5 Discussion

The empirical results from this research established that the Mao-Naga tribe's personal perspective of financial literacy is positively related to environmental sustainability, in line with past studies (She et al., 2022). The result revealed that when one has knowledge of personal finance, their financial attitude and awareness will improve. On the other hand, financial attitude and financial awareness can positively impact financial behaviour and which in turn can sustain environmental sustainability.

The current result shows that financial knowledge and attitude can positively lead to financial behaviour among the tribal population, strengthening the past financial literacy studies (C. C. Yong et al., 2018; Çera et al., 2021). Financial awareness can augment financial behaviour for sustainability (Eniola & Entebang, 2017; Rajan Chauhan & Kaur Dhami, 2021). Tribal consumers with green knowledge, attitude and behaviour have sustainable environmental behaviour and can promote environmental sustainability. This research is pivotal for tribals, who mostly face financial challenges and difficulties in improving their living standard and maintaining a sustainable ecosystem. In these situations, sustainable behaviour is essential, and must realise their long-term well-being.

The findings indicate that Mao-Naga tribals with higher financial literacy indicate greater responsible and accountable behaviour for environmental protection. This result aligns with a study by Martins et al. (2022), who claimed that financial knowledge, attitude and behaviour can promote environmental sustainability. It is because tribal individuals with financial responsibilities have a deeper sense of ecological sustainability as their daily life rotates around the ecosystem for sustenance. This study confirms that the Mao-Nagas with financial literacy might be more proactive in economic decision-making, information, planning and managing money to protect and promote ecology quality, reduce pollution, increase sustainable investment, shift to clean energy and consciously use non-renewable energy. People with financial knowledge, attitude, awareness and behaviour have higher confidence in clean energy investments and promote environmentally sustainable products (Aristei & Gallo, 2021; Zahoor et al., 2022).

This finding can contribute something exciting to the extant literature and generate new insights, as we used PLS-SEM analysis. At the same time, the IPMA result reveals that financial behaviour and attitude can play a dominant role in environmental sustainability. Therefore, the results recommend that governments and regulators seriously consider the individuals' financial literacy to achieve sustainability, which is informative for their policy intervention and strategies. Helm et al. (2019) also stated that looking into consumers' financial education could sensitise the art of handling and managing natural resources, augment their well-being at the micro level, and simultaneously reduce resource demand at the macro level. Therefore, there is a coherent message for policy-makers, regulators, and financial service providers to set relevant strategies and develop policies to enhance financial literacy and endorse environmental sustainability, which is depleting due to irresponsible human behaviour.

6 Theoretical implications

The present research has extended TPB theoretical implications, as it established significant relationships between financial literacy components and environmental sustainability (self-assessment survey). From the psychological standpoint of view, personal conviction, ability to solve problems, and responsible behaviour are vital for development (She et al., 2022), consistent with our present finding signifying a substantial role of personal responsibility in environmental sustainability. This research can contribute new insights where knowledge and awareness can be added to the TPB model for future research. This research output can be helpful for both financial and environmental researchers from a multi-

disciplinary perspective and enlighten individuals for controlled behaviour based on informed knowledge, attitude and awareness.

7 Conclusion

Financial literacy is a fundamental foundation for people to tackle their daily financial needs and can prompt individuals to undertake sustainable decisions for future well-being. However, it is essential to understand the components of financial literacy from a psychological perspective through self-assessment. Thus, the authors examine financial knowledge, attitude, awareness and behaviour to explain the environmental aspect of sustainability among the Mao-Naga tribe in Northeast India. The conventional judgement of financial illiteracy among tribals, particularly in Northeast India, does not hold true, which is supported by Filipiak and Walle (2015). The present study proposes that the policy-makers and regulators should emphasise and target greater financial education coverage for financial literacy and its outcome. Mainstreaming financial education programmes through social and cultural platforms could also help disseminate financial literacy and sustainable environmental investments as the Northeast tribals have a strong socio-cultural affinity. They can also look for other alternatives of financial education in villages, educational institutions, informal financial instruction at home, and social-gathering platforms to enhance financial information and awareness. Kadoya & Rahim Khan (2020) stated in their findings that financial instruction received at home and in schools plays a vital role in greater financial literacy. Setting strategies to increase financial literacy for environmental sustainability in Northeast India can ultimately boost the infrastructural development of the region through eco-tourism.

Declaration

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Contribution by respective Authors

K. Katini undertook the work of conceptualisation, data analysis, methodology, software validation, writing the original draft and editing.

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Appendix A: Questions

Financial Attitude (Potrich et al., 2015**;** Bongomin et al., 2018)

No	Items
FA1	I have a good attitude towards saving money.
FA2	It is important to spend money responsibly.
FA3	I am always interested in financial news.
FA4	I have a good attitude towards financial matters.
FA5	It is important to control monthly expenses.
FA6	It is important to establish financial targets for the future.
FA7	It is important to save money monthly.
FA8	It is important to invest regularly to achieve financial targets in the long term.

Financial Awareness (Eniola and Entebang, 2017**;** Carpena and Zia, 2020)

FAw1	I am aware that there are different systems in the bank to deposit and save money.
FAw2	I am aware of provisions like home loans, car loans, and education loans provided by banks.
FAw3	I am aware of various insurance such as Health, Life, Motor Vehicle, etc.
FAw4	I am aware of the mutual fund market and products.
FAw5	I am aware of provisions such as the public provident fund (PPF).

Financial Behaviour (Potrich et al., 2015**;** Bongomin et al., 2018**)**

FB1	I try to save some of the money I get each month for future use.
FB2	I analyse my financial condition before a major purchase.
FB3	I always try to spend by sticking to my budget.
FB4	I try to save regularly to achieve financial goals in the long term
FB5	I try saving more when I have more money.

Financial knowledge (Sivaramakrishnan et al., 2017**;** Bongomin et al., 2018)

FK1	I have knowledge about financial risks.
FK 2	I know about the benefits associated with financial products /services.
FK 3	I know the costs associated with financial products/services.
FK 4	I know to handle financial matters.

Environment Sustainability (Lafortune et al., 2018; Ando, Baars and Asari, 2019; Berglund et al., 2020)

EnS 1	I am able to protect the environment and nature.
EnS 2	I am able to contribute to climate change promotion.
EnS 3	I always use water consciously.
EnS 4	My family uses more natural resources that do not threaten the health and well-being of people in the future.

EnS 5	I am able to change my lifestyle and reduce wastes (throwing less food or not wasting materials).
EnS 6	I am able to reuse things as much as I can.