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Exploring the Relationship between Perceived Cooperative Impact, Financial Literacy, and Demographic Factors in the Rural Community of Kampung Tuba, Sarawak, Malaysia

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ABSTRACT

This paper examines the connection between perceived cooperative impact, financial literacy and demographic characteristics in the context of rural tourism in Kampung Tuba, Pantu, Sarawak, Malaysia. A quantitative correlational design was utilised, and data were collected in April 2025, during a cooperative community event, where 100 questionnaires were distributed using a convenience-assisted random sampling approach. Out of the 80 questionnaires returned, 76 complete responses were retained for analysis. The respondents received a structured questionnaire designed to capture their demographic background and their views on the role of cooperatives and financial literacy. These views were assessed using a series of five-point Likert-scale statements ranging from strongly disagree to strongly agree. Data analysis showed that the cooperative contributed positively to their members' socio-economic well-being. The analysis revealed that member participation was associated with the strongest overall perceptions of cooperative impact and confidence in handling financial matters. The findings indicated that gender and age were not significantly correlated with perceived cooperative impact and financial literacy. Further, there was a strong positive correlation between cooperative impact and financial literacy ($r = .72$, $p < .001$). The findings of the research revealed that cooperatives play both economic and educational roles. It is implied that the cooperatives help in the promotion of the Sustainable Development Goals (SDGs) like poverty eradication, gender equality and rural development.

1. INTRODUCTION

Cooperatives function as collective management entities that empower rural communities to take a leading role in production and consumption decisions. They provide a vital platform for local populations to engage meaningfully in tourism while safeguarding environmental and cultural values. Across Malaysia and worldwide, cooperatives consistently function as crucial instruments, bridging the gap between local

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entrepreneurs, artisans, and households and tourism markets that would otherwise exclude individual operators (Aktürk & Demir, 2021; Mbokazi, 2024).

Rural tourism is widely regarded as a catalyst for strengthening and revitalising local communities, particularly when it is based on local culture, natural resources and collective governance (Sharpley, 2023). Furthermore, it fosters the diversification of rural economies through initiatives such as homestays, cultural tours, handicrafts, and eco-based activities. A practical illustration of this model is the management of a local homestay program and the Wong Radak waterfall tourism site by a cooperative in Pantu, Sarawak, Malaysia. These initiatives attract visitors, generate employment, and provide supplementary income for rural residents. Furthermore, shared community assets such as trails, signage, and tourism accommodation can be collectively financed to secure direct, localised benefits for residents. Through cooperative management of the natural attraction of Wong Radak, this cooperative preserves the environment and its culture. According to the Rural Development Policy (2023), creating tourism cooperatives increases the involvement of the community in economic activities.

For decades now, cooperatives have served as a means of empowerment for communities, especially in rural areas which lack access to finance and markets. By harnessing diverse and multifaceted resources, cooperatives facilitate collective decision-making and shared understanding, ultimately securing better livelihood opportunities for their members. This financial self-sufficiency serves to strengthen the broader community, while rural tourism cooperatives act as vital catalysts for sustainable development by blending culture, entrepreneurship, and environmental stewardship (International Labour Organization [ILO], 2024; World Bank, 2023b).

In some disadvantaged regions, rural cooperatives have been elevated from just being economic structures to institutions of learning and society. Primarily, rural cooperatives equip members with financial literacy, management competencies, and a collective learning avenue that ultimately cultivates lasting self-reliance. According to the International Cooperative Alliance (ICA, n.d.), education and training are key elements of cooperative values and provide people with the ability to play significant roles in their governance and development, thereby helping them to make sound judgements. One of the features of cooperatives, financial literacy, is deemed particularly important because it helps in managing members' incomes, savings, and investments effectively (Erokhin & Gao, 2020). Rural cooperatives in some poor areas have changed from being economic organisations into educational and social organisations.

While Joseph et al. (2025) provide insightful information about Kampung Tuba's socio-cultural tourism, little is known about the cooperative's internal financial management and economic governance system. Significant issues concerning community involvement and financial responsibility were not addressed. Building on Joseph et al. (2025), this paper analyses empirical survey data to examine how cooperative participation interacts with members' financial literacy to produce measurable socio-economic empowerment. In doing so, it introduces a concrete financial governance perspective to balance prior socio-cultural research.

Primarily, the initiative aims to create a financially diversified business environment and a financially stable, resilient community. Also, existing research often addresses situations that feature characteristics such as concentration of power within a small oligarchy or group of leaders (Mtapuri & Giampiccolli, 2023). Ignorance of the financial world can cause friction and scepticism among key stakeholders. Such distrust can spread to the entire situation and poison it. Moreover, cooperatives cannot reasonably be argued to have any connections with formal financial institutions and investment channels, which would otherwise be their means of attracting funds for their tourism product innovation (Amahorseya, 2025).

By addressing these challenges, both cooperative governance structures and member financial education need to be strengthened. Thus, community engagement and financial literacy are interdependent. When cooperative members possess strong financial knowledge, they are more confident in participating in governance discussions, overseeing expenditures, and proposing ideas to improve tourism products (Mutana & Madzonga, 2021). The proposals for homestay packages and sustainable tours in Wong Radak

were proposed during the community meetings held by the cooperative group. The financial knowledge of the cooperative helps to promote economic development in the community and to improve women's agency and rural tourism development in general. Therefore, the current research examines the impact of the community's perception of the cooperative's positive effects, the financial literacy of members and the demographic features of the villagers on the process of developing rural tourism in Kampung Tuba, Sarawak, Malaysia.

Theoretically, within institutional settings, social capital operates through the networks, shared norms and mutual trust built. In order to have access to such resources, there is a necessity to have enough social capital in the corresponding settings (Dorkas Rambu Atahau et al., 2023; Prayitno et al., 2022). Yet, such a resource is not distributed evenly and is strongly related to the demographic features, namely age and gender. Meanwhile, financial self-efficacy does not emerge spontaneously; Bandura (1997) highlights that mastery experiences and social modelling within educational programs drive individuals' confidence, which is critical, as financial literacy fundamentally shapes long-term economic capabilities and decision-making resilience in rural communities (Lusardi & Mitchell, 2014).

1.1 Problem Statement

Rural tourism cooperatives are recognised as important catalysts for community empowerment and sustainable development. However, we still know comparatively little about how their internal financial governance and economic accountability act as catalysts for community empowerment and sustainable development. Significant gaps still remain in understanding how these cooperative structures actually operate from within to ensure sustained economic accountability. In community-based initiatives such as Kampung Tuba in Sarawak, Malaysia, prior research has largely focused on socio-cultural dynamics, leaving the quantitative mechanisms of financial administration underexplored. Many rural co-operatives face issues with the governance structure. These cooperatives face three operational obstacles, namely, decision-making power in a group of a few people, limited member financial literacy causing member mistrust whenever financial matters arise, and poor integration with mainstream financial and investment institutions, denying them the funds that they need to launch innovative and creative tourist products.

In spite of the existence of several theoretical approaches that show how social capital and self-efficacy theory influence the governance of co-operatives, members usually are not able to access these cognitive and social resources because of their demographic characteristics (e.g., age, gender). Lack of information about the connection between demographic characteristics, financial literacy, and the perception of the cooperative among its members does not allow policymakers and co-operative leaders to develop effective ways to govern the cooperative, improve the financial literacy of members, and foster tourism's contribution to the development of the economy of rural areas.

1.2 Objectives and Significance of the Study

The key objective of this study is to examine the relationships between community perceptions of cooperative impact, levels of financial literacy, and demographic characteristics within the context of rural tourism in Kampung Tuba, Sarawak, Malaysia.
Specifically, the study aims to:

i. analyse the demographic profile of cooperative members, focusing primarily on gender and age distribution;

ii. assess the perceived impact of the cooperative on members' economic opportunities, knowledge acquisition, and community confidence;

iii. evaluate the financial literacy levels among cooperative members;

iv. examine the relationships between members' perceived cooperative impact, financial literacy levels, and demographic characteristics (gender and age).

Hence, the presented study fills a gap in contemporary studies on the empowerment-oriented management of community tourism in rural areas, which has been characterised by a deficiency in empirical evidence on the implementation of this management in the context of developing countries and rural tourism. Furthermore, by offering. In addition to this, grounded empirical data from Sarawak, Malaysia, a place rich in natural and cultural resources and confronting issues related to rural development. The study contributes to the body of knowledge on community-based tourism in Southeast Asia.

The results provide Sarawak state agencies, rural development professionals, and cooperative leadership with practical solutions to maximise local tourism enterprises, such as homestays and eco-attractions. This study offers policymakers with a clear framework for integrating local community enterprises into larger regional tourism networks by examining financial governance, member literacy, and demographic dynamics. The United Nations Sustainable Development Goals (SDGs) of gender equality (SDG 5), equitable economic growth (SDG 8), and local poverty mitigation (SDG 1) are all directly advanced in Sarawak by this cooperative approach.

2. LITERATURE REVIEW

As an integrated socioeconomic paradigm, cooperatives combine direct community benefits with commercial viability. By virtue of their collective governance structures, these organisations enable rural residents and vulnerable populations to navigate market forces and realise the economic returns on their assets (Birchall, 2011; Wanyama, 2014). Furthermore, the ICA (n.d.) underscores that prioritising education and training builds essential human capital, fosters adaptability, and strengthens community resilience. In this way, cooperatives are not only commercial entities but also social institutions that, through their activities, foster unity and diversity, cultural identity, and fair economic growth in society.

Recent empirical findings show the fact that cooperatives keep on being a major factor in the empowerment of community participation obstructed by long distances through verifiable "shared decision-making" and "democratic governance" (Shao et al., 2023; Kipkorir Walter & Juma, 2025; Saz-Gil et al., 2021). By virtue of their ability to create a strong bond among the members, cooperatives are viewed as the mainstay for community integration, leading to sustainable rural tourism that is based on the locality's cultural and natural resources, which are thus preserved and managed collectively.

2.1 Cooperatives and Community Empowerment

Numerous studies have consistently shown that cooperative participation leads to both economic and psychosocial empowerment. According to Majee (2011), enhancing self-confidence, empowerment, and leadership skills among cooperative members is a key objective of grassroots empowerment and is directly achieved through active involvement in cooperatives. Just as mutual trust and reconciliation shape a community's capacity to adapt, cooperative-led social capital fosters the enduring resilience emphasised by Costantini and Pastorelli (2021). By converting social relationships into inclusive entrepreneurship, this directly supports institutional development priorities; cooperatives further the primary goals of the International Labour Organization (ILO), which are poverty alleviation, gender equality and human-centered economic-growth. Cooperatives will directly advance these priorities, serving as practical drivers to deliver the broader United Nations Sustainable Development Goals (SDGs).

In rural tourism, cooperatives serve as principal financial engines that directly and indirectly sustain local culture and heritage. Building on this, Levi (2024) identifies cooperatives as an essential mechanism to link municipal authorities and private enterprise, driving civic participation through cultural programmes that sharpen the overall competitiveness of the destination. The prolonged involvement of the elder members, particularly the women, even after their best years have passed, proves the key role of women in community life and is a clear indication of the sustainability of the cooperatives. This finding supports Costantini & Pastorelli (2021), who assert that social capital and organisational capabilities of women form the basis of the vitality of the cooperatives.

Majee (2011) and Costantini and Pastorelli (2021), among other scholars, have contended that cooperatives are able to develop leadership qualities and decrease the complexity of switching from psychological empowerment to local leadership through higher self-efficacy. Through community participation in the whole process, there is a feeling of "ownership" created by the process that is strengthened by a collective identity and solidarity (Costantini & Pastorelli, 2021). Good governance is often discussed since it helps ensure that the profits are being reinvested in the community and thus maintaining the constructive cycle of accountability, transparency, and public trust (Majee, 2011; Levi, 2024).

Involvement of communities in rural tourism cooperatives is beneficial not only for stimulating economic growth and psychosocial empowerment but also for developing social capital, leadership qualities, and resilience (Costantini & Pastorelli, 2021; Majee, 2011). As critical elements for finance and organisation, cooperatives are helpful in developing the competitiveness of destinations while keeping the cultural heritage of the area intact, with great assistance provided by women (Levi, 2024; Costantini & Pastorelli, 2021). Grounded in transparent governance, cooperative models foster individual self-efficacy and shared ownership, ensuring tourism gains are equitably distributed for sustainable community development (ILO, 2024).

2.2 Financial Literacy and Cooperative Participation

Cooperative financial resilience and effective participation among the communities are undoubtedly reliant on financial literacy. The World Bank (2023c) claims that those possessing better financial knowledge tend to be the ones who make better decisions regarding their investments, budgets, and savings. In cooperatives, financial literacy serves as both input and output and enhances leadership, decision-making and participation (Erokhin & Gao, 2020).

The outcomes of the policy research carried out by ILO (2013) and the World Bank (2023c) indicate that financial education as part of cooperative frameworks, such as training on bookkeeping, budgeting, and credit management, not only enhances the performance of the institution but also builds trust among the parties involved. In this connection, Schmit et al. (2021) assert that the adoption of the practice of keeping transparent accounts has a credibility-building effect on the cooperative and increases the participation of the members in the engagement process. Financial knowledge in the context of rural tourism allows cooperatives to set prices for their services that are competitive, control their costs well, and even market their services by reinvesting the profits made from their operations.

The availability of microcredit and cooperative savings plans increases the financial capacity of the members; hence, income diversification and the establishment of new businesses (Chauhan et al., 2022; Keh et al., 2024). If the community is aware of the credit mechanisms and financial accountability, then the likely scenario is that the profits will be reinvested in social welfare, conservation, and community projects (Rahim & Nasir, 2022). These patterns echo the findings highlighted by ILO (2024) and Wong and Guggenheim (2018). The authors highlight that cooperatives extend crucial financing mechanisms and shared assets to rural producers who lack individual market access.

Financial literacy is one of the key factors that contribute to the resilience of a cooperative and its communities, being at the same time a stimulus and a result of active involvement of its members (Erokhin & Gao, 2020; World Bank, 2023c). Financial education programmes that include budgeting, accounting, and credit management increase institutional legitimacy and confidence due to transparent governance (ILO, 2013; Schmit et al., 2021). Within rural tourism, financial literacy allows for achieving competitive prices, proper management of expenditures, and reinvesting profits in marketing, social services, and conservation projects (Chauhan et al., 2022; Rahim & Nasir, 2022). Moreover, access to microcredit and pooled resources of cooperative members allows for diversification of revenue sources and financial development in markets where there is limited access to the formal market (ILO, 2024; Keh et al., 2024; Wong & Guggenheim, 2018).

2.3 Demographic Influences on Cooperative Outcomes

The demographic factors have a powerful impact on the cooperative's rate and quality of participation, with gender and age being the most predominant ones. Abdullah et al. (2021) and Othman and Kari (2017) contend that integrating women into cooperative structures fosters enhanced governance, strengthens organisational trust, and promotes a more equitable distribution of resources. Women's stable engagement in cooperatives acts as a source of life and unity for the cooperatives, a finding corroborated by Costantini and Pastorelli (2021). They assigned women the role of social capital creators and community organisers.

Even though the normative goal of participatory approaches is to promote social equity, some empirical studies conducted in Southeast Asia have discovered conflicting relationships associated with demographic factors. There are multiple agrarian and rural communities within ASEAN where decisions in cooperatives are centralised by older male members who own land. This process is known as elite capture. The studies of rural cooperative governance in Malaysia and more general regional cases demonstrate that despite considerable female participation in cooperatives, the decisions about finances and executive management are made mostly by older males (Huang et al., 2015; Mtapuri & Giampiccoli, 2023). Such organisational features may lead to women and younger people being marginalised and thus decrease their self-efficacy and participation in management.

According to Majurin (2012), participation of women in cooperatives in Africa improves the governance structures due to governance processes becoming clear, financial stability being enhanced and improved household welfare. Likewise, Birchall (2011) highlights that cooperatives have democratic features regardless of the different levels of membership participation that are marked with longevity and efficiency in meeting the requirements of the community.

Age is another factor influencing participation in cooperatives. The older ones usually take on the roles of leaders, mentors and institutional memory, while the younger ones are the ones who are bringing the technological changes and are the most responsive to the current market demands (Rahman & Ismail, 2019). Crucially, however, there is currently a need for empirical data regarding how demographic factors and financial literacy interact, as well as how cooperatives are seen to have an impact. In light of the World Bank (2023b) and the ILO (2024), collaborative models need to be closely examined in order to determine the effective ways to reduce persistent demographic skill disparities.

The distribution of tangible resources among rural cooperatives, the effectiveness of governance, and participation are all largely determined by gender and generational differences. In Southeast Asian rural settings, structural issues like elite capture frequently limit executive decision-making to older male cohorts (Huang et al., 2015; Mtapuri & Giampiccoli, 2023), even though female involvement increases social capital, financial resilience and organisational trust (Abdullah et al., 2021; Costantini & Pastorelli, 2021; Majurin, 2012). Within these cooperatives, age introduces a distinct distribution of functions. While younger members are more technologically savvy and accessible to the market, older members usually protect leadership and institutional memory (Rahman & Ismail, 2019). To close demographic skill gaps and guarantee fair, long-term cooperative growth, capacity-building and inclusive governance frameworks are crucial. (Birchall, 2011; ILO, 2024; World Bank, 2023b).

2.4 Training and Capacity Building

The primary factor that determines the success of cooperatives is training, and in the case of the tourism sector, quality of service, professionalism, and digital skills have been established as the main concerns. The ongoing training in areas such as hospitality, marketing, and environmental sustainability that people-centred cooperatives provide is one of the main reasons for their excellent performance (Torabi et al., 2023). The Jom@Coop training program, which is supported by the government in Sarawak, is an excellent example of how government support can contribute to the development of cooperative skills (Sarawak Tribune, 2025). The program aimed to close the local skills gap and improve competitiveness in the tourism sector.

The projects for capacity building not only bring forth business skills but also empower the leaders of the community and the community itself (Suyatna, 2024; Hoque et al., 2022). People in rural areas are taught to acquire the skills needed for the operation of guesthouses, tourist guiding, and the start-up of very small businesses through training (Hidayati et al., 2022). These measures not only make locals skilful but also promote education across generations that enables the continuity of cooperative management and the area of innovation.

At its core, cooperative resilience is an investment in people. Well-established training programmes and active member education are the operational drivers of successful cooperatives, as Birchall (2011). Human capital is very important for cooperative survival. According to Birchall (2011) and Torabi et al. (2023), developing member competencies and long-term development is completely unattainable. Therefore, rather than being an afterthought, ongoing training needs to be an operational standard. In addition to service quality, cooperatives that offer intensive training in hospitality, digital marketing, tour guiding, and environmental sustainability actively empower local leaders and small-scale business owners (Hidayati et al., 2022; Suyatna, 2024).

Initiatives like Sarawak's government-supported Jom@Coop programme demonstrate how state-backed capacity building can effectively bridge regional skill gaps and foster intergenerational knowledge transfer, ensuring sustainable cooperative governance and ongoing tourism innovation (Hoque et al., 2022; Sarawak Tribune, 2025).

2.5 Summary of Literature Gaps

The literature shows that the cooperatives create both economic and social value through the creation of trust, finance and empowerment. However, there are considerable gaps in theory and practice with regard to the interactions between demographic factors and capacity-building impacts in rural ASEAN countries. First, while conventional cooperatives are based on the assumption that there is no exclusion from skills transfer, financial literacy programmes prove to be either unproductive or have very low retention rates if baseline formal education is insufficient. Low levels of literacy and numeracy create cognitive barriers to the extent that rural members cannot turn their knowledge of basic accounting into budgeting and record-keeping skills. Second, widespread elite capture threatens demographic equity, as internal governance mechanisms and financial resources are frequently benefiting senior male members. Little research exists as to whether CBT cooperatives in East Malaysia can effectively address the problem of demographic inequalities and limitations imposed by education level.

2.6 Theoretical Framework

This study links Putnam's (2000) Social Capital Theory with Bandura's (1997) Self-Efficacy Theory moderated by local demographic dynamics (Figure 1).

Through the lens of social capital theory, cooperative governance supplies the structural networks, mutual trust, and shared norms necessary for community members to pool resources and finance shared assets, including local homestays and eco-attractions. However, structural relationships alone do not guarantee successful management. According to Bandura (1997) in the self-efficacy model, these networks also need to develop personal agency.

Peer learning and direct mastery experiences foster financial confidence in community-based tourism. In addition to regular cooperative duties, interventions such as the Jom@Coop programme assist members in developing fundamental skills, moving from daily operational record-keeping (Items G1 - G2) to strategic budgeting and profit calculation (Item G3 - G4).

Gender and generational cohorts(ages 20-49 versus 50+) influence this process, as the conceptual framework illustrates (Figure 1). Instead of functional consistency, operational functions specialise along demographic lines: younger members supervise digital marketing channels, senior women oversee daily record-keeping, whereas senior male cohorts mostly oversee executive governance. When taken as a whole,

these complementary viewpoints show how collaborative engagement turns social connections and hands-on learning into useful financial skills, ultimately promoting inclusive, community-led tourism development and furthering the Sustainable Development Goals (SDGs 1, 5 and 8).

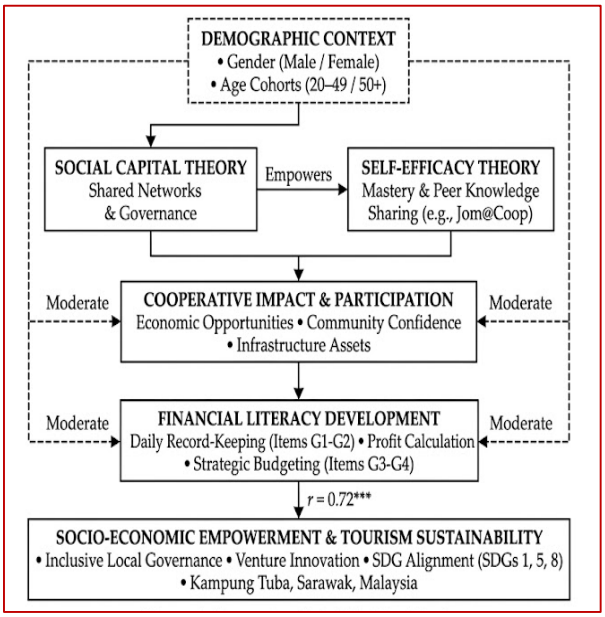


Fig. 1. Conceptual Model of the Study

3. METHOD

3.1 Research Design

A quantitative correlational research design was adopted in this study to clarify the relationship between the cooperatives' impact and financial literacy, considering different demographic factors for rural communities and their members in Kampung Tuba, Pantu, Sarawak, Malaysia. This design was selected, as it allows the application of statistical techniques to test associations between continuous variables like perception scores and financial literacy levels (Field, 2018). The methodology is especially suited for investigating whether higher participation in cooperative activities and perceived benefits are associated with increased financial knowledge and confidence among members.

3.2 Population and Sampling

The target population comprised approximately 250 registered members and active community participants of the rural tourism cooperative in Kampung Tuba, Pantu, Sarawak. The sample size determination framework of Krejcie and Morgan (1970), which states that a population of N = 250 requires a minimum sample size of s=152 for generalised survey research at a 95% confidence level, was used to assess the sampling strategy in order to determine the sample's representatives.

In addition, an a priori statistical power analysis was performed with G*Power 3.1 (Faul et al., 2007, 2009) for a two-tailed Pearson product-moment correlation (r). With a significance level of α=.05 assumed, a standard power of 1-β=.80, and an anticipated moderate-to-large effect size (r = .35), the minimum required sample size was determined to be N = 61.

In the course of the cooperative community event held in April 2025, 100 questionnaires were distributed through a convenience-assisted random sampling approach in order to maximise participant

reach. Eighty questionnaires were returned in total (an 80% response rate), of which 76 were retained for the final statistical analysis following screening and the removal of incomplete responses. This final sample of N = 76 meets the minimum required sample size of N = 61 for statistical power, represents 30.4% of all Kampung Tuba event attendees, and ensures adequate representation across gender, age cohorts, and residency durations. Within this sample (N = 76), 64 respondents were registered cooperative members, whereas 12 were non-members. The non-member participants were close relatives of cooperative members who actively participate in cooperative tourism activities and community operations; as a result, they offered insightful, outside viewpoints on the localised impact of the cooperative.

3.3 Research Instrument

A systematic, self-administered questionnaire based on the validated measures of community accounting literacy, governance and rural cooperative performance was used to gather data (Leite et al., 2023; Liu et al., 2024; Muslim et al., 2025; Zou & Wang, 2022). The instrument consisted of two main sections: Part A recorded demographic characteristics (gender, age, occupation, length of residence, and membership status), while Part B assessed core constructs using a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree).

Content and face validity were established through an expert review carried out by two senior academics specialising in accounting and rural development at Universiti Teknologi MARA (UiTM) Cawangan Sarawak; The experts revised the questionnaire for item relevance, clarity and suitability in relation to the study objectives and the local cooperative setting. Minor amendments were made to refine item clarity, considering their feedback. Internal consistency reliability for the Likert-scale constructs was assessed using Cronbach's alpha (α) coefficients in IBM SPSS Statistics (Version 25). Consistent with Hair et al. (2019) and Sekaran and Bougie (2016), Cronbach's alpha threshold of $\alpha \geq .70$ denotes acceptable construct reliability. The Cooperative Impact scale (Part B, Items F1–F10; 10 items) produced a robust Cronbach's alpha of $\alpha = 0.912$, indicating high internal consistency in capturing members' socio-economic, confidence, and infrastructure perceptions. The instruments demonstrated strong internal reliability across both primary scales. Likewise, the Financial Literacy scale (Part B, Items G1–G5; 5 items) recorded strong reliability with a coefficient of $\alpha = 0.864$, confirming high internal consistency in evaluating members' capabilities in financial record-keeping, profit calculation, and expense planning.

In this study, financial literacy is treated as a broader construct encompassing respondents' perceived confidence and capabilities in managing basic financial matters within the cooperative context. Financial recording represents one component of this construct, particularly in relation to daily income and expenditure documentation (Items G1–G2). The remaining items address wider financial management capabilities, including profit calculation, budgeting and expense planning (Items G3–G5). This distinction allows the study to examine both routine financial practices and respondents' perceptions of their broader financial management capabilities.

3.4 Data Collection Procedures

In April 2025, data collection took place in Kampung Tuba during a planned cooperative event. Ethical approval and institutional evaluation were conducted in alignment with the research ethics guidelines of Universiti Teknologi MARA (UiTM) Cawangan Sarawak and standard social research ethical standards (ILO, 2024).

An Informed Consent Form explaining the study objectives, participants' right to voluntary participation, and the survey's non-compensatory nature was given to participants prior to the survey's distribution. Respondents were informed that they could withdraw from the study at any moment without paying any expenses. No personally identifiable information, such as residential addresses, phone numbers, or personal identification numbers, was collected to ensure total anonymity and confidentiality. Only the principal team had access to password-protected digital repositories, including questionnaire response sheets, which were coded alphanumerically (e.g., R-01 to R-76).

3.5 Data Analysis

The analysis of the data was conducted using SPSS version 25 from IBM. Means, standard deviations, and frequencies were employed in descriptive statistics to illustrate the demographic and response trends. To achieve the study's objectives, correlation analysis, particularly Pearson's product-moment correlation coefficient, was used to test the relationship between cooperative impact and financial literacy scores in terms of direction and strength (Field, 2018).

Likewise, smaller group analyses were conducted to inspect how demographic traits influenced the differences. The $p < 0.05$ level was deemed statistically significant. A strong positive correlation would mean that better financial literacy is associated with stronger belief in the cooperative's impact, thus supporting cooperatives as a vehicle for economic and educational empowerment (Majee, 2011; Majurin, 2012; World Bank, 2023c).

The methodology framework is being used to analyse the multi-dimensional role of cooperatives in rural development. The study, which uses descriptive and correlational analysis, depicts the extent of cooperative influence and the relationship between members' financial knowledge and demographic characteristics. The empirical design is consistent with prior studies stressing the need to have evidence-based assessments of performance and member empowerment in cooperatives (Costantini & Pastorelli, 2021; Birchall, 2011).

4. RESULTS AND DISCUSSION

The findings from the study are presented and interpreted in this section. The relationship between cooperative impact and financial literacy, and demographic factors for a rural tourism cooperative member. The discourse includes a presentation of the descriptive statistics and correlation analyses linking them with relevant literature for a proper, thorough understanding of cooperative participation, inclusion and empowerment.

4.1 Membership Patterns and Inclusivity

The analysis of membership distribution revealed that genders participated quite consistently and evenly in accordance with the first research objective (Table 1). Of the total 76 respondents, 64 (84%) members were active cooperators, including 30 males and 34 females, while 12 (16%) were non-members. The non-members consisted of immediate family members and close relatives of cooperative members who actively assisted with daily community operations, event execution, and local tourism services, thus providing key auxiliary perspectives. Among cooperative members, the participation rate of females (85%) was slightly higher than that of males (83%), indicating that gender may not have been a key factor determining the characteristics of cooperatives. According to the ICA (n.d.), equality and democratic participation are essential characteristics of cooperatives. This finding demonstrates these characteristics. Likewise, Majee (2011) and Levi (2024) observed that a gender-balanced cooperative will lead to shared leadership, community building and equal access.

Table 1. Crosstabulation Between Gender and Membership

Gender	Member (A)	Non-member (B)
Male (M)	30	6
Female (F)	34	6
Total	64	12

To statistically evaluate whether cooperative membership is dependent on gender, a Pearson Chi-Square (χ^2) test for independence was conducted. The test confirmed no statistically significant association between gender and cooperative membership, $\chi^2(1, N = 76) = 0.038, p = .845, \phi = .022$. This validates that male and female residents participate in the cooperative at statistically equivalent figures.

Table 2. Crosstabulation Between Age Group and Membership

Age Group	Member (A)	Non-member (B)
20–29	8	4
30–39	6	1
40–49	16	3
50–59	20	1
60+	14	3
Total	64	12

Membership participation was closely tied to both age and length of residence in the community (Table 2). Participation peaked among those aged 50–59 years (95%), followed closely by the 40–49 and 60 and older brackets, whereas younger adults (ages 20–39 years) recorded lowest turnout. This trend mirrors broader from the findings of the World Bank (2023b) and the International Labour Organization (ILO, 2024), which note that older adults tend to form the backbone of the rural cooperatives, supported by their established social ties and relative economic stability. The limited participation of the youths could be due to a combination of factors such as urban migration, lack of exposure to cooperative initiatives or competing employment and educational opportunities (Ali et al., 2024; Pathma et al., 2025; Terrasi, 2018; International Cooperative Alliance, 2018).

A Chi-Square test for independence was also performed to examine the association between age categories and cooperative membership. The analysis indicated a statistically significant relationship, $\chi^2(4, N = 76) = 10.421, p = .034, Cramer's\ V = .370$, indicating that participation rates are significantly higher among older age cohorts (40+ years) compared to younger residents (20–39 years).

Table 3: Crosstabulation Between Age Group and Gender

Age Group	Male	Female	Total
20–29	6	6	12
30–39	3	4	7
40–49	9	10	19
50–59	11	10	21
60+	7	10	17
Total	36	40	76

The analysis of cross-tabulation (Table 3) focused on the distribution of genders and revealed a slight majority of women (53%) over men (47%), especially in the older age groups. Women's continuous participation until the end of life makes their function in the process of community unification and cooperative continuity very important. This is in line with the views of Costantini and Pastorelli (2021), who claim that women play a significant role in the life-force of a cooperative through social capital and community organisation. The cooperative, in general, was most welcoming to all demographic groups, but it also depended most on the participation of the middle-aged and the elderly.

4.2 Cooperative Impact

The second objective was to evaluate how the cooperative was perceived to have an impact on members' economic opportunities, knowledge, and community confidence. The results suggest that the cooperative has a multidimensional effect (Figure 2) that consists of knowledge expansion, confidence building, economic improvement, infrastructure development, as well as collective identity.

The members indicated that they had gained large amounts of practical knowledge with respect to tourism and local enterprise, with a mean score of 4.16. This result reinforces the idea that cooperatives are informal learning spaces where the exchange of knowledge and skill development among the members

takes place. The ICA (n.d.) identifies education and training as fundamental cooperative principles that enhance human capital and community resilience. Members also reported feeling more confident and optimistic about their ability to get favourable results from the joint ventures (M=3.89).

According to Majee (2011) and Costantini and Pastorelli (2021), cooperatives are facilitators of local leadership and flexibility. In this sense, the feeling of empowerment, which has the characteristics of self-confidence and control over one's activities, aligns with their belief. The members' dedication to lifelong learning is further demonstrated by the extremely high score for the requirement for ongoing training (M = 4.59), which is consistent with Levi's (2024) claim that ongoing upskilling is essential for rural tourism to remain competitive.

Examples of the economic benefits that the respondents acknowledge as being real include the rise in income (M = 3.72), increased company likelihood (M = 3.58), and improved employment projections (M = 3.55). The results are in line with ILO (2024) and Wong and Guggenheim (2018), which attest to the fact that one benefit of cooperatives is that they give small producers access to markets, loans, and shared infrastructure that they would not otherwise have. In the context of tourism, this incorporates homestay, food manufacturing, artisanal commerce and tour guiding. Additionally, the participants highlighted infrastructural improvements (M = 4.12), mentioning improved area amenities, roads and community and tourist facilities. A localised vehicle for collective investment and social development is cooperatives, given the above example of place-based development.

Members expressed considerable pride in the cooperative's achievements (M=4.50) and strong trust in its leadership (M=4.22). This suggests that individuals may have been satisfied with the principles of democratic management, governance transparency, and equitable participation (ICA, n.d.). Because the local population fully owns the development processes, this pride factor strengthens local identity and community spirit (Costantini & Pastorelli, 2021). Good governance ensures that benefits are redistributed to the community, where trust is maintained, and accountability is upheld (Majee, 2011; Levi, 2014).

Overall, the findings indicate that the cooperative's perceived impact extends beyond economic benefits to four interrelated areas: knowledge and skills development, psychological empowerment, material improvement, and community solidarity. These results demonstrate the cooperative's dual function as an economic catalyst and a platform for education, community development and collective participation.

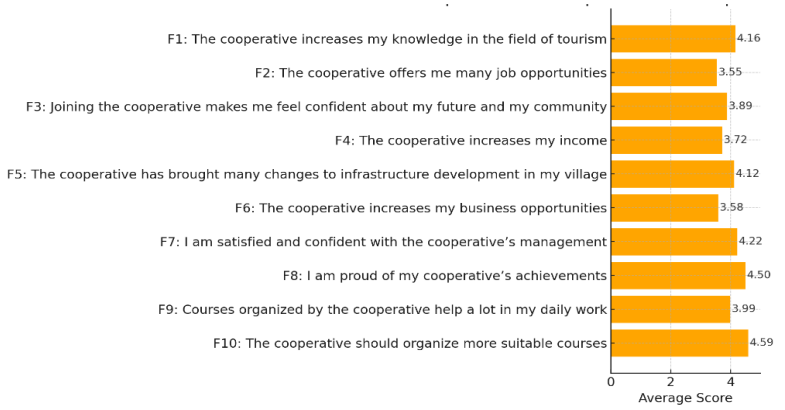


Fig. 2. Perception of Cooperative's Impact

4.3 Financial Literacy

This research measured cooperative members' financial literacy in accordance with the third research purpose, highlighting the cooperative's vital role in enhancing members' financial management skills despite their poor formal education and lack of formal training (Figure 2). All the key competencies were

warmly endorsed by respondents, particularly profit calculation (M = 3.82), financial planning (M = 4.17), and financial record-keeping (M = 4.30). These results show that the cooperative's practical training improved members' everyday literacy and business skills by bridging the initial knowledge gap.

Financial literacy is widely recognised as the cornerstone of economic resilience. Targeted financial education, as highlighted by the World Bank (2023c) and the ILO (2024), enables people to effectively manage resources, reduce financial risk, and make wise investment decisions regardless of prior academic achievement. Members with minimal formal education were able to manage seasonal income and profits and establish home financial stability by including financial education in tourism and business training. Because of this, as both an economic entity and an essential educational platform, transforming into self-assured, independent business owners. As a result of that, the cooperative transforms members with no prior expertise into confident, independent business owners by acting as both an economic entity and a crucial educational platform.

4.3.1 Intersectional Dynamics: Age, Gender, and Financial Behaviours

A closer examination of the findings highlights differences between routine financial record-keeping and more strategic financial management. In particular, the results distinguish everyday income and expenditure recording (Items G1–G2) from broader financial management tasks, including profit calculation and expense planning (Items G3–G4). These differences provide a useful perspective on how financial responsibilities are distributed among cooperative members.

i. Older Female Members (Ages 50+): Operational and Record-Keeping Mastery.

   In terms of daily income and cost logging, women over 50 had the highest mean scores (M = 4.45, SD = 0.52). Due to their primary responsibility for guesthouse management, catering and handicraft sales in Kampung Tuba, senior women often oversee daily tourist money flow.

ii. Younger and Middle-Aged Members (Ages 20–49): Strategic Planning and Digital Readiness**.**

   Across both genders, younger and middle-aged members demonstrated greater proficiency in profit calculation and long-term expense forecasting ($M = 4.28, SD = 0.61$) than their older peers ($M = 3.65, SD = 0.74$). Backed by their higher formal education and targeted capacity-building initiatives such as the government Jom@Coop program, this cohort is well positioned to handle strategic pricing, margin evaluation, and digital financial management in local tourism firms.

iii. Older Male Members (Ages 50+): Capital Allocation and Governance

   Senior male members (over 50) generated greater trust in long-term capital allocation, investment decisions, and project budgeting due to their historical presence in the executive committee leadership. However, compared to senior women, their self-reported scores for routine daily bookkeeping were still lower (M = 3.92, SD = 0.68), indicating a functional division between administrative supervision and operational accounting.

Overall, the findings reveal how financial roles are naturally shifted across gender and age groups. While senior women appear more involved in routine financial recording, the elder men tend to lean into governance and investment-related responsibilities, and the younger members bring fresh potential for strategic planning and digital financial activities. Recognising these differences can help cooperative leaders develop more relevant training programmes that strengthen both basic financial management and longer-term financial planning.

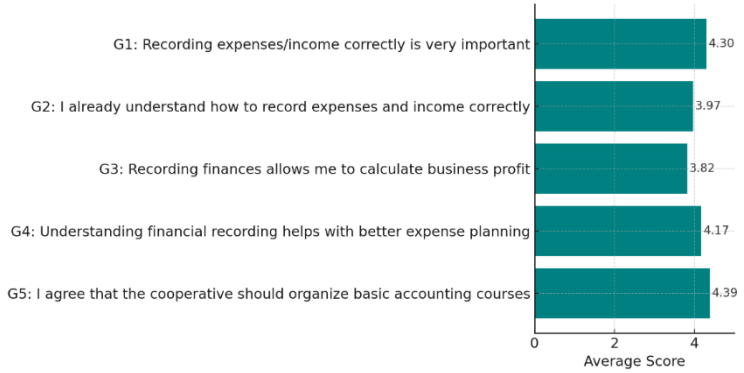


Fig. 3. Cooperative Members' Financial Literacy

4.4 Correlation Analysis: Experiential Cognitive Empowerment vs.Demographic Independence

Important insights into the acquisition and distribution of financial literacy within the rural tourism cooperative ecosystem are provided by the bivariate correlation study. Financial literacy exhibited a negligible, non-significant correlation with gender ($r(74) = .08$, $p > .05$) and no relationship with age ($r(74) = .00$, $p > .05$). This suggests that the cooperative's capacity-building and educational programs operate equitably across different age brackets and gender roles, offering equal learning opportunities that help bridge traditional demographic obstacles. (Erokhin & Gao, 2020).

However, members' perceived cooperative influence and financial literacy showed a significant positive association ($r(74) = .72$, $p < .001$). This substantial link implies that financial knowledge in this rural setting is a result of real joint activity rather than just an intrinsic personal quality. Members obtain real-world financial experience through state-sponsored training sessions, practical experience handling real tourism revenues (like homestay reservations and eco-tour fees), and regular peer-to-peer knowledge sharing during community meetings. This continuous experiential learning builds functional capabilities in bookkeeping, profit assessment, and expense management, enabling members to manage finances effectively regardless of their limited formal schooling. These findings are consistent with those of Majurin (2012) and Erokhin and Gao (2020), confirming that participation in community-based cooperatives promotes both cognitive and economic empowerment.

Table 3. Summary of Correlation Results

Variable Pair	Pearson's *r*	Direction	Strength	Significance
Cooperative Impact – Gender	0.10	Positive	Very Weak	Not significant
Cooperative Impact – Age	–0.06	Negative	Very Weak	Not significant
Financial Literacy – Gender	0.08	Positive	Very Weak	Not significant
Financial Literacy – Age	0.00	None	None	Not significant
Cooperative Impact – Financial Literacy	0.72	Positive	Strong	$p < .001$

The findings of the research corroborate that cooperatives are functioning as institutions with two-fold purposes which deliver economic and educational benefits. The gender and age demographics of participants have little effect, while participation in cooperatives is linked to a significant increase in financial literacy. The connection shows that the cooperative is a movement aimed at the betterment of the community.

According to Birchall (2011) and Majurin (2012), these findings show that cooperatives are viewed as being the hub of the people and collective learning with production. There is a strong positive relationship; in empowering cooperatives, financial literacy is a multi-dimensional process involving financial, intellectual and social empowerment views.

According to the policy view, education and continuous education have a big role to play in cooperatives, as is evident from the findings. Programs at co-operatives that are focused on specific areas of financial management, bookkeeping, and entrepreneurship can further improve the co-operatives' ability to cope with the changing economy as well as their effectiveness. According to Wanyama (2014), members' knowledge capital is just as important to the sustainability of a cooperative as the capital and infrastructure.

In short, the study shows cooperatives to be the main players in the inclusion of all, the enhancement of the community's trust, and the improvement of financial literacy. Co-operative members view the co-ops as facilitators of a better standard of living, a source of new skills, and a way to get power together. The strong positive relationship between the cooperatives' impact and the financial literacy level is a further affirmation of the viewpoint that the cooperatives are the rural areas' transformation engines, linking economic growth with education and social integration (Costantini & Pastorelli, 2021; ILO, 2024; World Bank, 2023a).

5. CONCLUSION AND IMPLICATIONS

The study underlines the primary roles of cooperatives in empowering the local economy, enhancing members' financial literacy, and strengthening overall community resilience. The findings demonstrate that cooperative participation yields both tangible economic gains and critical cognitive empowerment, equipping rural residents with the confidence to manage personal and collective finances while actively participating in local governance. Rural cooperatives, by combining economic participation with capacity-building efforts designed to fit local needs, function as essential drivers of socio-economic transformation that is rooted in and tailored to local contexts.

5.1 Policy Implications and Practical Recommendations

To maximise the long-term impact of community-based cooperatives in rural Sarawak, policymakers, government agencies, and cooperative leaders should implement targeted, actionable interventions:

i. Village-Level Accounting Micro-Credentials:

   Extension programs, such as Jom@Coop, should be restructured into modular, localized accounting micro-credentials tailored for rural homestay and enterprise operators. The training curriculum should emphasise practical applications of everyday record-keeping, fundamental bookkeeping principles, and the utilisation of accessible digital ledger tools, such as mobile accounting applications that are tailored for the operational contexts of rural communities.

ii. Targeted Intersectional Capacity Building:

   Training modules should progress beyond traditional, one-size-fits-all approaches. Workshops aimed at increasing capacity should focus on particular needs, such as cash flow and inventory management; senior female operators in charge of day-to-day operations stand to gain the most from hands-on training in these areas. Younger members and executives should concentrate on capital allocation, tourism-specific pricing and digital marketing.

iii. Governance Modernisation and Inclusive Youth Engagement:

   To encourage greater youth involvement, particularly among those between the ages of 20 and 39, cooperatives might assign committee seats to younger members and establish mentorship programs to prepare them for leadership roles. Additionally, adopting digital reporting tools can enhance transparency and accountability across cooperative operations. These measures build member trust, minimise the concentration of decision-making authority among a select few, and reinforce the long-term sustainability of the cooperative.

5.2 Methodological Limitations

It is necessary to recognise some limitations when interpreting the study's results:

- Cross-Sectional Research Design
  The data were collected only once, during a joint event in April 2025. Because of this, the study was unable to show a direct link between cooperative activity and long-term effects on socioeconomic and financial literacy.
- Geographic and Contextual Scope
  The empirical sample comprised registered members and attendees in Kampung Tuba, Pantu, Sarawak (N = 76). When transferring or extrapolating the results to Peninsular Malaysia or other regions with agricultural, urban, or non-tourist cooperative systems, care must be taken, even if this study offers insightful information on an indigenous rural tourism center.
- Self-Reported Measures
  Financial literacy and perceived cooperative impact were assessed using self-reported Likert scales, which may be subject to social desirability bias or the subjective overestimation of respondents' financial abilities
- Treatment of age in the correlation analysis
  Instead of recording the respondents' ages, they were divided into five categories, each of which was assigned a numerical code for the Pearson correlation analysis. This approach may not accurately reflect the differences in respondents' ages because it assumes equal intervals between age categories.

5.3 Directions for Future Research

While this study provides valuable insight into the relationships between cooperative involvement, financial literacy, and community development, some areas require more investigation. Collaborative research conducted in conjunction with local communities may lead to deeper understanding and more effective cooperative policies and practices.

First, panel or longitudinal approaches should be used in future research to track changes in members' socioeconomic well-being and financial literacy over time. A more comprehensive picture of how members' financial knowledge, self-assurance, and management techniques evolve as a result of ongoing participation in cooperative activities would be obtained through repeated data collection.

Second, comparative research on tourism, agricultural and other rural cooperatives in different areas could identify how differences in governance and organisational structures affect financial inclusion and economic empowerment. These comparisons would also assist in determining which methods work best in various community and industry contexts.

Third, involvement of women and young people in cooperative governance and decision-making should be further examined. This study's foundation in a well-established empowerment framework offers a clear lens through which to identify structural hurdles to participation, especially in relation to leadership routes, focused training and capital availability. In the end, these insights can guide more inclusive strategies to improve managerial skill and community commitment in cooperatives.

Finally, future studies should look at the potential benefits of digital technology for cooperative education, financial management and organisational accountability. Research may explicitly examine whether readily available digital platforms and financial tools improve members' record-keeping practices, financial decision-making, and involvement in cooperative activities. It is important to consider the challenges the rural communities face when adopting new technologies, such as infrastructure access, digital literacy, and appropriate training.

Given its growing role in online learning and financial transactions, it is imperative to understand how digital technology might be used to enhance cooperative education and management. Future studies should focus on how digital platforms may help members become financially savvy, make better decisions, and strengthen cooperatives' resilience in the digital world. This is especially crucial as cooperatives must keep up with technological advancements while making sure their members, particularly those living in rural communities, do not fall behind.

To ensure that research findings are applicable to the realities of the cooperative sectors, more collaboration between researchers, cooperatives and development groups is also required. Research should encourage useful initiatives that address the demands and difficulties encountered by cooperatives and their members rather than focusing on academic discourse. Additionally, by working together, research findings can be converted into policies and programs that strengthen cooperatives' ability to promote inclusive growth and create economic opportunities.

More empirical studies would help us better understand how cooperatives benefit rural economies and community development. Research conducted in various locations and communities may show what is effective, where problems still exist, and how cooperative projects could be strengthened. Researchers, practitioners and politicians looking for equitable opportunity, bolster cooperative education and encourage economic empowerment on a national and worldwide scale would all benefit from these ideas.

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7. CONFLICT OF INTEREST STATEMENT

The authors agree that this research was conducted in the absence of any self-benefits, commercial or financial conflicts.

8. AUTHORS' CONTRIBUTIONS

Corina Joseph: developed the methodology and offered overall project leadership, overseeing every phase of the research process and manuscript development; **Tamoi Janggu:** drafted the introduction, carried out the formal analysis, interpreted the empirical findings, and authored the discussion section; **Ranee Atlas** and **Tina Stephen Enggong:** performed the comprehensive literature review to build the study's theoretical framework; **Patrick Atan:** laid out the academic and practical implications of the work and brought together its methodological limitations; **Susana William Jalil:** contributed the concluding synthesis and handled manuscript formatting, visual presentation, and structural alignment for final submission. All authors reviewed and approved the final manuscript.

9. DECLARATION OF THE USE OF GENERATIVE AI

During the preparation of this work, the author(s) used Gemini PRO to generate ideas for literature review, policy implications and recommendations. After using this tool, the author(s) reviewed and edited the content as needed and took full responsibility for the content of the publication.

10. DATA AVAILABILITY/ SUPPLEMENTARY MATERIALS

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

11. ETHICS STATEMENT

Informed consent was obtained from all participants, and data anonymity was strictly maintained throughout the study.

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