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Examining the influence of top management green commitment and green intellectual capital on sustainable business performance of Thailand's thrift and credit cooperatives: The mediating role of collaboration

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A B S T R A C T

This article aims to examine the influence of top management green commitment and green intellectual capital of Thailand's thrift and credit cooperatives on sustainable business performance: the mediating role of collaboration. A questionnaire was used to collect data from 400 Thailand's thrift and credit cooperatives. The measurement and structural models were analyzed with Structural Equation Modeling (SEM). The finding of the study demonstrated that top management green commitment and green intellectual capital have a positive influence on sustainable business performance and collaboration. Moreover, collaboration has a positive influence on sustainable business performance and mediates the relationship between top management green commitment on sustainable business performance, and also green intellectual capital on sustainable business performance. This empirical finding contributes to the body of knowledge in Resource Based View theory.

1. Introduction

In the past, business management mainly focused on profitability and gaining a competitive advantage, often disregarding limited resources and environmental practices (Yusliza et al., 2020). This has led to negative impacts on the environment, resulting in climate change, pollution, natural resource depletion, and disasters that harm humanity (Tran et al., 2022). Businesses now face the challenge of adapting to these global issues to survive and grow sustainably (Bombiak & Marciniuk-Kluska, 2018). Hence, it is crucial for all sectors to broaden their learning context and not focus solely on profitability, but also on environmental issues and ensuring that all activities do not harm the environment (Tang et al., 2018). This will ultimately improve human life's well-being and promote community involvement (Bombiak & Marciniuk-Kluska, 2018).

Furthermore, this phenomenon gave rise to the concept of sustainability, which involves balancing growth in organizational, economic, and environmental integrity while promoting peaceful coexistence in society in the long term and future (Ma et al., 2019). This aligns with the United Nations' adoption of the 17 Sustainable Development Goals (SDGs) within Agenda 2030, which aims to balance the economy, environment, and society's three dimensions to tackle significant global sustainability issues (Yong et al., 2022). SDG12 highlights the crucial role of businesses in achieving sustainable development. Target 12.6 further emphasizes the need for companies to adopt sustainable practices and integrate sustainability data into their reporting cycles (United Nations, 2017).

While many industries are making significant efforts to enhance their environmental performance, sustainable development still requires greater effort to remain competitive (Yong et al., 2022). Previous studies have emphasized the importance of green intellectual capital in enhancing sustainable performance in various industries (Ali et al., 2021; Dang & Wang, 2022; Mansoor et al., 2021; Shah et al., 2021; Wang & Juo, 2021; Yusliza et al., 2020), However, the role of green intellectual capital in Thailand's

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thrift and credit cooperatives, particularly in collaboration with top management commitment (Haldorai et al., 2022) and strengthening operational processes through collaboration (Al-Omoush et al., 2022), remains unclear. A comprehensive evaluation of existing research is necessary for academic and industrial practices to progress together.

The proposed study aims to examine the influence of top management green commitment and green intellectual capital on sustainable business performance in Thailand's thrift and credit cooperatives, with collaboration acting as a mediator in this relationship. The findings of this study can provide valuable insights into the knowledge sharing and management practices of organizations, particularly with regard to environmental issues, and can serve as a guideline for achieving maximum efficiency and benefits. By promoting a collaborative culture of knowledge sharing among employees and recognizing the importance of environmental sustainability, organizations can work towards achieving economic, social, and cultural efficiency and sustainability. The proposed research contributes to the existing literature and theoretical framework by offering an innovative approach to studying the role of collaboration in the relationship between top management green commitment, green intellectual capital, and sustainable business performance.

2. Literature review

2.1 Resource-based view

This study is grounded in the Resource-Based View Theory (RBV), which highlights the importance of strategic resource management research (Wright et al., 1994). According to RBV, an organization must possess valuable, rare, and unique resources that cannot be easily replicated, providing a significant advantage over competitors (Hoskisson et al., 1999). To enhance organizational performance and create a sustainable competitive edge, it is crucial to identify and improve upon an organization's strengths and weaknesses in terms of its physical, human, and organizational resources (Barney, 1991). RBV recognizes intellectual capital as one of the most critical intangible resources that firms can possess (Wright et al., 1994). In this current study, top management green commitment and green intellectual capital are identified as essential intangible resources that drive collaboration and contribute to sustainable business performance. According to the RBV paradigm, these resources are crucial organizational assets that encourage collaboration, leading to improved long-term corporate success.

2.2 Top Management Green Commitment (TMGM)

Initiating a green organizational work process requires the commitment of top management since they play a crucial role in utilizing organizational resources to achieve strategic objectives. Top management also plays a critical role in developing policies that promote environmental awareness among employees (Chadwick et al., 2015). This is because employees are key participants in sharing an organization's resources. Therefore, top management's commitment is essential to enhancing an organization's strategic goals. An organization's success depends on top management's ability to encourage and empower employees (El-Kassar & Singh, 2019). Similarly, Kiesnere & Baumgartner (2019) also highlighted that the effectiveness of environmental management programs is contingent on top management's commitment to promoting diversity, supporting employee work, and taking environmental communication seriously. In this context, top management's participation in an organization's sustainability management is one of the primary success factors for sustainable development.

2.3 Green Intellectual Capital (GIC)

Green intellectual capital plays a vital role in driving value-added and enhancing operational efficiency in organizational management, particularly in terms of environmental protection. Green intellectual capital has traditionally been classified into three components. Firstly, green human capital refers to the skills, knowledge, and capabilities that employees have acquired while working towards environmental protection in an organization (Bontis, 1998). Secondly, green structural capital comprises the knowledge that includes non-human assets of an organization, such as organizational structure, management philosophy, corporate governance, and technology, all of which are organizational assets that focus on environmental protection or green innovation within the company. Thirdly, green relational capital includes distribution channels, customer and supplier relationships, customer loyalty, strategic partnerships, governmental and industrial networking, intermediaries, and partnerships for corporate environmental management to achieve competitive advantages and sustainable business performance goals (Haldorai et al., 2022; Yong et al., 2022; Yusliza et al., 2020).

2.4 Collaboration (COLLAB)

Collaboration can be described as participation in working between two or more organizations that require continuous coordination in creating and maintaining the idea to support each other to fix problems and obtain the organization's goal (Abbas et al., 2022) and also understanding each other through resources and insights information sharing with sincerity, jointly planning and finding a solution to many problems, and preserving the resources of both organizations to achieve goals and mutual benefits. Furthermore, jointly planning and finding a solution to many problems and preserving the resources of both organizations to achieve the goals also benefit (Le et al., 2021). Collaboration is based on knowledge sharing to facilitate production and service processes that directly participate between an organization and its partner or customer in joint planning for finding the way to fix problems in operation. Moreover, it refers to the willingness of an organization to donate green commitment for driving performance to achieve the sustainability goal (Tran et al., 2021).

2.5 Sustainable Business Performance (SBP)

Sustainability has become a critical issue for many organizations due to various climate changes, legislation, and societal demands for businesses to demonstrate social and environmental responsibility. The concept of sustainability was initially presented by the Brundtland Commission in 1987, and the most widely recognized definition of sustainability is "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987). Elkington (1994) provides the most widely accepted perspective on sustainable performance, which considers the natural environment, society, and economic performance, and is consistent with the concept of the triple bottom line. Economic performance is concerned with financial performance, while environmental performance aims to prevent environmental damage and protect resources. Social performance is concerned with the well-being of workers, consumers, and stakeholders (Yusliza et al., 2019).

2.6 Hypotheses and Model Development

Previous studies have mainly focused on examining the relationship between top management green commitment and an organization's environmental performance (Haldorai et al., 2022; Yang Spencer et al., 2013) and there is a gap in the literature regarding the relationship between top management green commitment and sustainable performance. While it is known that top management plays a crucial role in improving employee behavior towards environmental performance, their commitment can also drive environmental efficiency towards an organization's sustainable performance. Thus, we propose the following hypothesis:

H_1: Top management green commitment has a positive influence on sustainable business performance.

Green intellectual capital is a valuable resource that can drive wealth creation and increase organizational efficiency (Bontis, 1998; Haldorai et al., 2022). This capital can be categorized into three components: green human capital, green structural capital, and green relational capital (Yong et al., 2022) that are all the factor driving organization to achieve sustainable business performance goals. Research has shown that green intellectual capital has a positive influence on sustainable business performance (Haldorai et al., 2022; Yusliza et al., 2020). Intangible assets, such as skills, capabilities, and employee creativity, are vital mechanisms for creating sustainable business performance for an organization. By managing the organization's environment and inventing green solutions, green intellectual capital can generate positive results for the organization's performance. Thus, we propose the following hypothesis:

H_2: green intellectual capital has a positive influence on sustainable business performance.

In an organization, the top management plays a crucial role as decision-makers and influential leaders. They are responsible for shaping the vision and strategic mission to achieve a competitive advantage through information sharing, strategic collaboration, and resource allocation with partners. According to several studies (Huo et al., 2021; Tacheva et al., 2020; Uddin & Akhter, 2022), top management demonstrates its commitment to creating strong relationships by prioritizing sustainable benefits over short-term profits and maintaining positive ties with partners. The level of commitment and support shown by top management greatly impacts the collaboration among organizational members and partners in adopting operational practices and management systems aligned with the green strategy. Without the support and commitment of top management towards environmental sustainability, members of the organization and partners are less likely to actively engage in the organization's activities (Lee & Joo, 2020). Therefore, a strong green commitment from top management is essential for effective collaboration and implementation of sustainable practices in the organization. Thus, we propose the following hypothesis:

H_3: Top management green commitment has a positive influence on collaboration.

Green intellectual capital is typically categorized into three components that support and promote each other (Ali et al., 2021, 2022; Asiaei et al., 2022). Any imbalances between these components can lead to inefficient green intellectual capital (Al-Omoush et al., 2022; Shou et al., 2020). These findings are consistent with the research conducted by Mubarik et al. (2022), who found that organizations with strong green intellectual capital consist of green human capital, green structural capital, and green relational capital. This not only encourages employees to collaborate effectively on environmental issues but also supports their learning on how to work efficiently with business partners (Al-Omoush et al., 2022). Effective management of collaboration between the organization and business partners is a critical mechanism for creating knowledge and enhancing collaboration across organizational boundaries (Shiranifar et al., 2019). This involves accessing external knowledge resources through a collaborative process between the organization and its partners, rather than relying solely on specialized knowledge resources within the organization (Al-Omoush et al., 2022; Shou et al., 2020). Thus, we propose the following hypothesis:

H_4: Green intellectual capital has a positive influence on collaboration.

Collaboration is crucial for implementing strategies and risk prevention practices that reduce costs, increase product quality, and improve delivery time to customers (Myamba & Nguni, 2022). It is well-known that collaboration plays a significant role in enhancing competitive advantage and achieving sustainable business performance goals across all sectors (Pero et al., 2017). Collaborative processes can enable production organizations to obtain critical resources they do not possess, which can help develop joint operational practices and risk prevention practices, ultimately leading to operational strength (Myamba & Nguni, 2022). Thus, we propose the following hypothesis:

H_5: Collaboration has a positive influence on sustainable business performance.

Organizations require effort, talent, and collaboration from partners to ensure smooth operations (Lee & Joo, 2020). Collaboration has become prevalent in all business sectors as it is considered a significant factor for creating growth opportunities for businesses. There are various models for managing and strengthening collaboration, including goal setting and consensus building together (Margerum & Robinson, 2015). By seeking benefits from different perspectives, knowledge, and approaches to problem-solving through mechanisms of mutual empowerment, businesses can achieve increased revenue, capacity, and competitive advantage. However, collaboration driven by the commitment of top management can result in strong economic, social, and environmental sustainability performance for the organization (Roy et al., 2018). This commitment can help ensure that the organization achieves its goals, and it can provide additional benefits to the stakeholders. Thus, we propose the following hypothesis:

H_6: Collaboration mediates the relationship between top management green commitment and sustainable business performance.

Obtaining a competitive advantage and achieving sustainable business performance are not solely dependent on green intellectual capital. Relying on this intangible resource alone may be insufficient in terms of driving operations and covering risk management, which can cause operational interruptions, failures, and incorrect predictions (Shou et al., 2020). To ensure efficient processes and acquire crucial operational resources, organizations must seek knowledge from external partners and integrate with them (Fawcett et al., 2015; Wiengarten et al., 2016). This involves open communication about operational issues and jointly inventing business strategies that address market demands, future trends, and product development needs to achieve common goals (Fawcett et al., 2015). However, without the support of green intellectual capital, collaborative relationships may not effectively drive organizations to achieve economic, social, and environmentally sustainable performance goals. This is because internal knowledge of environmental performance is crucial in managing collaborative relationships (Fawcett et al., 2015; Shou et al., 2020). Thus, we propose the following hypothesis:

H_7: Collaboration mediates the relationship between green intellectual capital and sustainable business performance.

Based on the research aim, literature review, and hypothesis development, a conceptual model has been proposed for the current study, as shown in Fig. 1.

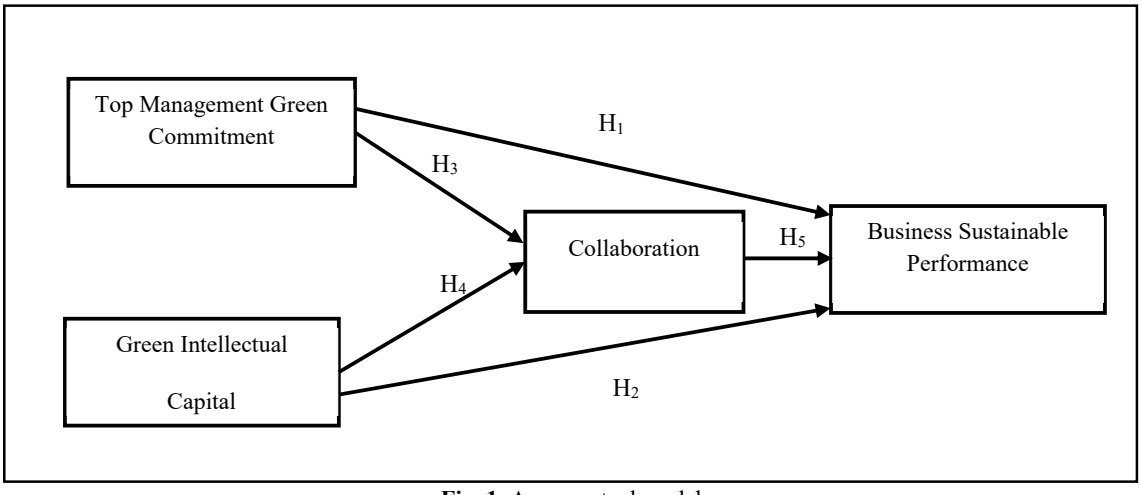

Fig. 1. A conceptual model

3. Methodology

3.1 Scale development

The tool used was an online self-administered survey consisting of four questions on top management green commitment adapted from Yusliza et al. (2019), six questions on green intellectual capital adapted from Haldorai et al. (2022) and Yusliza et al. (2019), four questions on collaboration adapted from Blome et al. (2014) and six questions on sustainable business performance adapted from Chow & Chen, 2012. The questionnaire was designed using a 7-point Likert Scale, where a score of 1 indicated "strongly disagree" and a score of 7 represented "strongly agree".

3.2 Sample and Data Collection

The study utilized a sample group of 400 participants, including both top and middle managers, as well as full-time employees who met specific criteria. These criteria included involvement in the adoption of green practices, knowledge of the sustainable business performance of their organization, and at least one year of work experience in an organization. The participants had a good understanding of the green practices and sustainable business performance of their organization. Most of the sample group was male (88.75%), aged between 38-53 years (41.25%), married (62%), held a bachelor's degree (59%), and had an average

monthly income between 40,001 - 50,000 baht (32.25%). All respondents met the study's requirements. The observed variables had a mean ranging from 5.28-4.96, with a standard deviation between 1.49-1.26. The skewness and kurtosis values fell between -2 and 2, indicating a normal distribution of the data (Tabachnick & Fidell, 2007).

3.3 Data Analysis

For the current study, SPSS was utilized to generate descriptive statistics, and data analysis was conducted in two stages. The first stage involved Confirmatory Factor Analysis (CFA) and analysis of the measurement model to assess the reliability and validity of the proposed research model. The second stage involved studying the structural model and testing hypotheses.

4. Results

4.1 Testing of Model Suitability

Confirmatory Factor Analysis (CFA) was utilized to examine the associations among the components proposed in the research model. The fit indices were used to determine the degree of adequacy of the fit. The Chi-squared value for overall fit assessment ($\chi 2/df$) obtained was 1.779, which was below the necessary threshold of 5. The Goodness of Fit Index (GFI) was 0.947, which exceeded the necessary threshold of 0.90. The Comparative Fit Index (CFI) was 0.988, exceeding the necessary threshold of 0.95. The Root Mean Square Error of Approximation (RMSEA) was 0.044, which was below the necessary threshold of 0.06. The Standardized Root Mean Square Residual (SRMR) was 0.046, meeting the necessary threshold of less than 0.05. The CFA model was confirmed to have an excellent model fit. Additionally, the factor loading of the observable variable was greater than the criterion value of 0.50, ranging from 0.93 to 1.13 (Byrne, 2016). In addition, the authors also assessed the composite reliability (CR) and average variance extracted (AVE) to ensure the unidimensional of the multiple-item structures and remove any unreliable indicators. The CR value should be greater than 0.70, and the AVE mean should be greater than 0.50, indicating that each hidden variable captured the observable variable variance. The measurement model assessment provided compelling evidence that all operational definitions of latent variables were valid and reliable. The reliability analysis employed Cronbach's Alpha coefficients, and values above 0.70 indicated high data reliability (Hair et al., 2010). The validity and reliability analysis outcomes are presented in Table 1. Additionally, the study's discriminant validity was assessed by squaring the correlation between latent variables and the AVE. The squared correlation of the latent variable had to be lower than the AVE, as per Fornell & Larcker (1981). Hence, the measurement model exhibited discriminant validity.

Table 1
Measurement items of the constructs used in the questionnaire.

Measurement items	Loading	AVE	CR
Top Management Green Commitment Cronbach Alpha = 0.923		**0.812**	**0.923**
The environmental preservation is a top priority for the management of your organization.	1.01		
Your organization's top management is committed to allocating adequate resources to operate in an environmentally sustainable manner.	1.00		
In your organization, the top management demonstrates a commitment to environmental improvement by following up on recommendations.	1.02		
The success of the environmental action plan in your organization depends on the leadership and support of top management.	1.00		
Green intellectual Capital Cronbach Alpha = 0.916		**0.704**	**0.916**
Employees in your organization exhibit a higher level of commitment to preserving the workplace environment compared to those in other organizations.	1.13		
The personnel in your organization deliver exceptional service in conducting operations that do not have adverse effects on the environment, surpassing those in other organizations.	1.13		
Compared to other organizations, your organization has a greater ability to provide services that are environmentally conscious.	1.04		
Your organization's environmental management system surpasses that of its competitors.	1.03		
Your organization offers services that prioritize the environmental interests of its stakeholders and business partners.	1.08		
Your organization effectively collaborates with business partners to address environmental conservation.	1.00		
Collaboration Cronbach Alpha = 0.904		**0.777**	**0.906**
In order to fulfill its operational goals, your organization collaborates effectively with its partners.	1.04		
Your company collaborates with other organizations to share resources, facilities, and labor skills for the advantage of management.	0.99		
Over time, your organization collaborates with partners to offer input on operational efficiency improvements.	0.94		
Your organization collaborates with partners to plan operations and prepare for potential disruptions.	1.00		
Sustainable business performance Cronbach Alpha = 0.911		**0.692**	**0.913**
Your organization collaborates with government authorities to safeguard its interests.	1.09		
Your organization allocates resources towards technology advancements to enhance the performance of all departments.	1.03		
Your organization prioritizes the health and safety of its employees and the surrounding community.	1.06		
Your organization recognizes the significance of community events and endeavors to provide funding as necessary.	0.97		
Your organization aims to decrease reliance on unnecessary energy consumption.	0.93		
Your organization engages in service activities to minimize and regulate its impact on the environment.	1.00		

4.2 Structural Model Analysis and Hypothesis Testing

The findings of the structural model analysis to examine the influence of top management green commitment and green intellectual capital of Thailand's thrift and credit cooperatives on sustainable business performance: The mediating role of collaboration demonstrated the model was consistent with the actual data, with the five overall fit indices values of $\chi 2/df = 1.882$, GFI = 0.942, CFI = 0.986, RMSEA = 0.047, and SRMR = 0.050 (Byrne, 2016), as shown in Fig. 2.

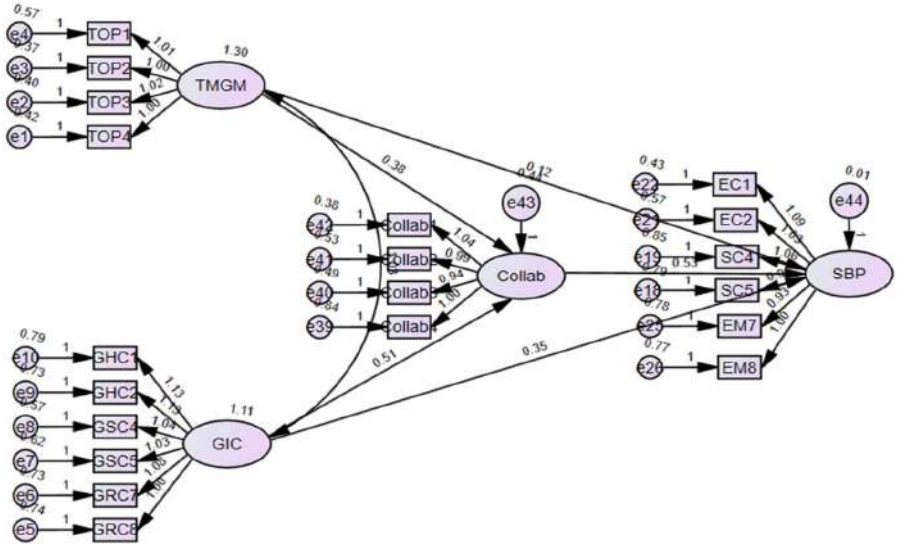

Fig. 2. The structural equation modeling analysis

The hypothesis testing results indicate that the variables in the proposed study are related. Specifically, the results show that TMGM (β = 0.123) and GIC (β = 0.349) have a positive influence on SBP, while TMGM (β = 0.381) and GIC (β = 0.507) have a positive influence on COLLAB. Furthermore, COLLAB (β = 0.535) has a positive influence on SBP. As illustrated in Table 2, the t-values are greater than 1.96, and the hypotheses are significant at the α = 1% level. Consequently, hypotheses H1, H2, H3, H4, and H5 are supported.

Table 2
The outcomes of hypotheses testing

Hypothesis	Beta value	t Statistic	p value	Decision
H1	0.123	2.626	0.009	Supported
H2	0.349	6.074	0.000	Supported
H3	0.381	4.440	0.000	Supported
H4	0.507	5.266	0.000	Supported
H5	0.535	11.230	0.000	Supported

According to the results presented in Table 2, the results of testing the direct effect, indirect effect, and total effect of the relationship between the variables proposed in the study. The results indicate that collaboration mediates the relationship between top management green commitment and sustainable business performance as well as green intellectual capital and sustainable business performance. Therefore, hypotheses H6 and H7 are also supported.

Table 4
The direct effect, indirect effect, total effect and the role of mediation

Hypothesis	Relationship	Direct Effect	Indirect Effect	Total Effect	Result
H6	TMGM → Collab → SBP	0.123	0.219	0.342	Partial
H7	GIC → Collab → SBP	0.349	0.270	0.619	Partial

5. Discussion

The results of the hypothesis testing indicate that top management green commitment and green intellectual capital have a positive influence on sustainable business performance, as well as on collaboration. Furthermore, collaboration has a positive influence on

sustainable business performance and acts as a mediator in the relationship between top management green commitment and green intellectual capital on sustainable business performance. Therefore, all of the hypothesized relationships are supported.

The initial hypothesis revealed that a strong commitment from top management towards green practices is vital for enhancing the sustainable business performance of Thailand's thrift and credit cooperatives. The top management team should have a broad vision and commitment to not only focus on short-term profits but also establish a strong foundation for operations based on good governance to create economic, social, and environmental value. This finding is consistent with a previous study by Jahanshahi and Brem (2017) that highlights the crucial role played by top management in formulating policies and strategies to drive an organization towards sustainable business performance. In addition, collaboration among the top management team is crucial in sharing knowledge and creating social responsibility within and outside the organization, promoting employee well-being, conducting ethical business, ensuring fair trade with suppliers, and avoiding harm or negative impact on society and the environment. These empirical results are critical factors in driving an organization towards sustainable business performance.

The second hypothesis emphasizes the crucial role of green intellectual capital in achieving sustainable business performance, with the balance of green intellectual capital being deemed particularly important for Thailand's thrift and credit cooperatives. Employee competence was found to play a critical role in addressing environmental problems and reducing energy consumption within the organization. However, the study also revealed that factors such as knowledge, skills, attitudes, organizational culture, innovation, databases, and relationships with cooperative members and stakeholders are essential not only for environmental preservation but also for improving the cooperatives' operational efficiency in the economy, society, and environment. These findings are consistent with previous research by Yusoff et al. (2019) and Yusliza et al. (2020), which have also demonstrated the importance of green intellectual capital in enhancing an organization's competitive advantage and improving its economic, social, and environmental performance. This supports the Resource-Based View Theory, which suggests that intangible resources are critical for an organization's efficiency. Therefore, Thailand's thrift and credit cooperatives should prioritize the development and management of green intellectual capital to improve their sustainable business performance.

The third hypothesis suggests that top management green commitment is crucial in encouraging members of Thailand's thrift and credit cooperatives and external partners to adopt environmentally friendly practices and activities. In the context of these thrift and credit cooperatives, top management's commitment is the most critical factor as it drives the organization's direction, including promoting collaboration within the organization, stakeholders, and external partners. Collaborative thinking to analyze problems and find opportunities to solve them can increase communication quality between organizations, stakeholders, and partners, strengthening a collaborative culture and facilitating shared decision-making processes. This leads to a superior ability to deal with and overcome issues that affect corporate business efficiency. These findings align with a previous study by Lee and Joo (2020), which showed that top management teams that promote green collaboration with partners are critical variables in the organizational management process. They contribute to improving an organization's environmental performance. Therefore, top management's willingness and active support in the organization's environmental activities are crucial in directing internal members and external partners' collaboration to achieve efficient objectives.

The fourth hypothesis demonstrates that the three components of green intellectual capital play a critical role not only in fostering collaboration among members of Thailand's thrift and credit cooperatives to jointly develop environmentally friendly practices and achieve sustainable competitive advantages, but also in facilitating knowledge acquisition and integration. Through modeling behavior and interpreting systems, green intellectual capital supports the formulation of business strategies in collaboration with stakeholders and partners. The knowledge and experience gained from operating sustainably serve as a foundation for efficient communication, exchange of knowledge, experience, and operational skills, as well as decision-making processes among members of the organization, stakeholders, and partners, leading to the creation of value-added operations. This finding is consistent with the results of a previous study by Shou et al. (2020), indicating that green intellectual capital is an external asset that not only benefits an organization's business activities but also encourages collaboration with external organizations. This collaboration involves exchanging information, creating interactions between organizations, sharing resources, and developing mutual understanding to achieve common goals.

The fifth hypothesis highlights the vital importance of collaboration as a strategic and operational issue. It goes beyond mere decision-making and defines practices related to the direction of operations for Thailand's thrift and credit cooperatives business. Collaboration also involves sharing and exchanging perspectives on resources and operational skills, brainstorming ideas, analyzing problems, and searching for opportunities to solve complex problems together to improve operational efficiency. It fosters a change in work processes based on dedication and devotion to achieving shared success. In today's context, Thailand's thrift and credit cooperatives must manage and handle sensitive issues, internal and external concerns, and create greater social and environmental responsibility. However, it is still important to pay attention to the economic performance of organizational collaboration as a mechanism to balance operational efficiency. This process focuses on achieving goals and obtaining mutually beneficial economic, social, and environmental benefits. This finding is aligned with the results of a previous study by Mehdikhani and Valmohammadi (2019), which showed that collaboration is a driving force in strengthening the partner's collaborative processes by sharing crucial information and operational risks to obtain benefits and returns from working together. Therefore, collaboration is a crucial strategy for every organization that can drive operations to achieve sustainability.

It is important to note that the sixth hypothesis highlights the mediating role of collaboration, which means that collaboration plays a critical role in linking top management green commitment to sustainable business performance. Without collaboration, the positive effect of top management green commitment on sustainable business performance would not be fully realized. Therefore,

it is crucial for top management to promote and facilitate collaboration among members and external partners to achieve their environmental goals and sustainable business performance. This finding is aligned with the results of a previous study by Lee and Joo (2020), showing that top management has a significant influence on setting the organization's strategic direction and encouraging collaborative efforts with both internal and external stakeholders to achieve sustainability goals. This highlights the importance of leadership in promoting a culture of collaboration and sustainability within an organization.

Lastly, Collaboration is indeed an essential factor in driving sustainable business performance, as it enables organizations to access resources, share ideas, and jointly solve problems. This is particularly important for Thailand's thrift and credit cooperatives, which face various internal and external challenges that require collaboration with other stakeholders and partners. Moreover, collaboration can mediate the relationship between top management green commitment and sustainable business performance as well as green intellectual capital and sustainable business performance. This suggests that collaboration is a crucial strategy for organizations to achieve sustainability goals and improve operational efficiency. The findings are consistent with previous studies, which also highlight the importance of collaboration, top management commitment, and intellectual capital in driving sustainable business performance. This finding is aligned with the results of a previous study by Shou et al. (2020) highlights the importance of developing intellectual capital as a driving force for an organization's success. It also emphasizes the role of partners in supporting, sharing, and jointly solving problems to ensure smooth operations and achieve superior objectives.

6. Conclusions

Indeed, the findings of this study offer valuable insights into the vital role that top management green commitment, green intellectual capital, and collaboration play in achieving sustainable business performance. The study makes a significant contribution to the Resource Base View theory by highlighting the importance of intangible assets, specifically green intellectual capital, in driving organizational performance. Furthermore, the study emphasizes the role of collaboration in leveraging these intangible assets to achieve sustainable business performance. The implications of these findings are not limited to Thailand's thrift and credit cooperatives sector but can be applied to other organizations in various industries seeking to enhance their environmental and social sustainability. By investing in green intellectual capital and fostering collaboration, organizations can improve their competitiveness and achieve long-term sustainability.

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