KNOWLEDGE, ETHICS AND SUSTAINABILITY OF SOCIAL ENTERPRISES IN THAILAND: THE MEDIATING EFFECT OF SUFFICIENCY ECONOMY PHILOSOPHY

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Abstract

The purpose of this research was to examine the role of the Sufficiency Economy Philosophy (SEP) in mediating the relationship between knowledge-ethics and the sustainability of social enterprises in Thailand. Structural Equation Modeling was employed to analyze the proposed relationships between knowledge and ethics in organizational management and the operational and impact viability of social enterprises, and to investigate the mediating effect of SEP's pillars of moderation, reasonableness, and self-immunity. The data for the study was collected via a survey of 291 CEOs of social enterprises in Thailand. The model demonstrated acceptable fit indices (Chi-square=1694.932, df =1007, CMIN/DF = 1.683, CFI =0.906, SRMR = 0.079, RMSEA = 0.049, and PClose = 0.723), indicating empirical support for the proposed conceptual model. The results revealed that the three pillars of SEP significantly mediate the relationship between ethics and the sustainability of social enterprises for both operational viability and impact viability. Compared to reasonableness and self-immunity, moderation had the highest indirect effect on both operational and impact viability, suggesting that a moderated approach to social enterprise can enhance sustainable performance. Finally, only reasonableness and self-immunity, significantly mediated the relationship between knowledge and the operational viability of social enterprises.

Keywords: Social Enterprise, Sufficiency Economic Philosophy, Sustainability, Structural Equation Modeling

1. INTRODUCTION

The COVID-19 pandemic negatively impacted the global economy, causing a lower FTSE index (Statista Research Department, 2022). Unemployment rose to a record high of 14.8% in the US in April 2020 (Romero et al., 2021). GlobalEcnomy.com (2022) forecasts an average unemployment rate of 7.1% in 2022, with South Africa having the highest level. Thailand's economy declined 0.3% in Q3 2021 vs 7.6% growth in the previous quarter.

Kamaludin et al. (2021) found that social enterprises (SE) struggle to sustain themselves, particularly during the COVID-19 pandemic, as they require innovation for income. In contrast, the British Council (2020) reported that social enterprises are resilient and adaptable in a crisis, as demonstrated by their response to COVID-19. Weaver (2020) supports this, suggesting that

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resilience is crucial for SE sustainability. However, operating sustainably during crises like COVID-19 remains challenging for SEs.

SEs are crucial in addressing social and environmental issues, prioritizing solutions over profits. Ensuring their sustainability is important for securing their long-term success and creating a better world. Understanding factors affecting sustainability is crucial.

The concept of the triple bottom line (economic, social, and environmental performance) is used to measure sustainability (Elkington, 1994).

Many researchers have used this approach (Sakulsuraekapong, 2015, 2016; Lee, 2016; Sommit, 2018; Ketprapakorn & Kantabutra, 2019; Pangprasert et al., 2020; Chaisuwan, 2021; Din et al., 2022), while others only consider two dimensions (economic and social performance; Lee, 2014; Chamnanlertkit, 2014; Sigasa, 2015; Lee, 2018). Burkett (2010) proposed a sustainability measurement for SEs that considers both operational viability (long-term costs and financial performance) and impact viability (social and environmental impacts).

In Thailand, the Sufficiency Economy Philosophy (SEP) created by King Rama 9 is a well-known concept for sustainability. Few studies have used SEP as a predictor for social enterprises (Ketprapakorn & Kantabutra, 2019; Chaivirutnukul & Chantrachai, 2019). This research aims to examine the role of SEP in mediating the relationship between knowledge-ethics and social enterprise sustainability in Thailand, being the first to use SEP as a mediating factor rather than an independent variable. This differs from previous studies (Donkwa, 2014, 2016; Kantabutra, 2014; Ketprapakorn & Kantabutra, 2019).

Furthermore, social enterprises can benefit from incorporating SEP principles into their business model, which can help reduce their environmental impacts, and enhance their social impacts by promoting community-based production and consumption, supporting local economies, and using resources efficiently. Moreover, integrating SEP into their model can also strengthen their resilience and adaptability, especially during changing circumstances such as the COVID-19 pandemic.

In this regard, knowledge and ethics play vital roles in the adoption and implementation of SEP by social enterprises. Social enterprises must have a profound understanding of SEP principles and practical applications to integrate them successfully into their model. Moreover, ethics are crucial as social enterprises should prioritize solutions to social and environmental issues over profits, which is the fundamental principle of SEP. Therefore, a robust ethical foundation and knowledge of SEP principles are essential for social enterprise sustainability.

This study uses SEP and Burket's (2010) framework to measure the sustainability of social enterprises in Thailand. Data were collected through questionnaires and CEO interviews and analyzed using Structural Equation Modeling (SEM) to examine the causal relationship between knowledge-ethics, SEP, and SE sustainability. The findings may benefit Thai SEs and inform public policies that support SE sustainability.

2. LITERATURE REVIEW

This section will cover the key concepts of social enterprise sustainability, SEP, and their relationship. It will also present the study's hypothesis and framework.

2.1 Sustainability of Social Enterprises

The definitions of sustainability for social enterprises vary. DTI (2002) and Wallace (2005) define a "sustainable social enterprise" as one that is financially sustainable (100% income from trading), grant-free and achieving both financial and social goals. Burkett (2010) defines it as one that is grant-free, financially sustainable, and achieving both financial and social sustainability.

The triple bottom line, which balances the economy, society, and environment, is the

widely recognized definition of sustainability for enterprises (Elkington 1994; Burkett 2010, Thongboonchu, 2014; Sakulsuraekapong, 2015; Lee 2016; Sommit 2018; Ketprapakorn & Kantabutra 2019; Pangprasert et al. 2020; Din et al. 2022). This approach is widely adopted in the study of the sustainability of social enterprises (Burkett 2010, Thongboonchuy 2014, Sakulsurakepong 2015 & 2016, Lee 2016, Sommit 2018, Ketprapakorn & Kantabutra 2019, Pangprasert et al. 2020, Din et al. 2022).

Some studies argue that sustainable social enterprises are sustainable in two ways: social performance and economic performance (Lee, 2014, 2018; Chamnanlertkit, 2014, Sigasa, 2015; Chang 2012). This study adopts Burkett's (2010) concept as she believes sustainable social enterprises must have two components: operational viability (including financial and balance sheet performance) and impact viability (social and environmental performance).

2.1.1 Operational Viability

The operational viability of SE refers to its ability to cover costs and operations, including financial performance and balance sheet performance (Burkett, 2010). This aligns with the work of Kaplan & Norton (1996); Chang (2012); Wronka (2013); Lee (2014); York (2014), Sigasa (2015); Njiru (2016) and Samad et al. (2017), who used economic performance to measure sustainability. The study will use Burkett's (2010) guidelines to create a questionnaire to measure financial and balance sheet performance.

2.1.2 Impact Viability

The impact viability of SE refers to its success in demonstrating social and environmental impacts (Burkett 2010). Similar evaluations of social and environmental performance can be seen in the works of Sakulsurakepong (2015); Lee (2016); Sommit (2018); Ketprapakorn & Kantabutra (2019); Pangprasert et al. (2020) and Din et al. (2022). This study will use the methods of Burkett (2010) to develop a questionnaire for measuring social performance and the 4R principle of waste management from the Sasin Graduate Institute (2010) for environmental performance.

2.2 Sufficiency Economy Philosophy

Few studies have used SEP as a mediator for the impacts of ethics and knowledge on the sustainability of social enterprises. Most studies have focused on social entrepreneurship or leadership as key factors for the sustainability of for-profit organizations (e.g. Tepthong, 2014; Sakulsurakepong, 2015; Ketprapakorn & Kantabutra, 2019; Pangprasert et al., 2020). SEP has been used as a predictor of sustainable organizations in some studies (Donkwa, 2014, 2016; Kantabutra, 2014; Chaivirutnukul & Chandrachai, 2019; Ketprapakorn & Kantabutra, 2019; Tippong et al., 2020). However, only a few studies have used SEP specifically as a predictor in social enterprises (Chaivirutnukul & Chandrachai, 2019; Ketprapakorn & Kantabutra, 2019).

This study uses SEP as a predictor but differs from Chaivirutnukul & Chandrachai (2019) by decomposing SEP into five aspects (moderation, reasonableness, self-immunity, knowledge, and ethics). Unlike Ketprapakorn & Kantabutra (2019), who surveyed hospital employees, this study focuses on CEOs of social enterprises who have been in their positions for over two years and who make key decisions for their company. This study provides a unique perspective on the relationship between SEP and the sustainability of social enterprises.

The Sufficiency Economy Philosophy was first introduced by King Bhumibol Adulyadej of Thailand in 1974. It emphasizes the values of moderation, reasonableness, self-immunity, knowledge, and ethics, with the aim of promoting self-reliance, happiness, and sustainability through a middle-path approach. The Thai government has integrated the SEP into its national

development plan, and it has been credited with helping the country overcome crises such as the Tom Yum Kung Crisis in 1997 (Anantanatorn, 2017).

SEP is a holistic approach considering the interdependence of economic, social and environmental factors, which has been used by several researchers to explain the sustainability of social enterprises (Jitsuchon, 2019; Yimwilai & Loonsuwanrat, 2016; Sangnin & Pooripakdee, 2018; Nuchpiam et al., 2018; Ketprapakorn & Kantabutra, 2019). Despite the widespread use of SEP, empirical data linking SEP and the sustainability of social enterprises is limited, with only Chaivirutnukul & Chandrachai (2019) and Ketprapakorn & Kantabutra (2019) using SEP as predictors. More research is necessary to examine the relationship between SEP and the sustainability of social enterprises.

SEP is a guiding principle for organizations or individuals, comprising three pillars: moderation, reasonableness, and self-sufficiency.

2.2.1 Moderation

Moderation refers to an organization's ethical business conduct, including the pursuit of profits at a reasonable and sustainable level while avoiding harm to oneself, customers, business partners, or competitors. Kantabutra (2014) found that moderation has a direct positive effect on social and economic crises and does not have a significant effect on public benefit (social and environmental responsibility). In this research, the guidelines for the questionnaire were also drawn from the Sasin Graduate Institute (2010) and Kantabutra (2014).

2.2.2 Reasonableness

Reasonableness refers to an organization's rational decision-making and actions, including careful evaluation of expected results. Donkwa (2016) found that reasonableness has a direct positive effect on financial management. In this research, the guidelines for the questionnaire were drawn from the Sasin Graduate Institute (2010) and Kantabutra (2014).

2.2.3 Self-immunity

Self-immunity refers to an organization's preparation for the short-term and long-term impacts and changes of crises. Kantabutra (2014) found that resilience (self-immunity) has a direct positive effect on social and economic crises, similar to Donkwa (2016), who found that self-immunity has a direct positive effect on financial management. Ketprapakorn and Kantabutra (2019) found that self-immunity has an indirect positive effect on social and economic impacts. Additionally, Kantabutra (2014) found that resilience (self-immunity) has a direct positive effect on public benefit (social and environmental responsibility). In this research, the guidelines for the questionnaire were drawn from the Sasin Graduate Institute (2010) and Kantabutra (2014).

2.3 The Proposed Conceptual Model and Hypothesis.

The relationship between the SEP and the sustainability of social enterprises in Thailand is depicted in the conceptual framework presented in Figure 1. Knowledge and ethics, two conditions of the SEP which form the foundation of a good organization, were identified as endogenous variables. The three pillars of SEP: moderation, reasonableness, and self-immunity were identified as mediators. Operational viability and impact viability were also identified as endogenous variables. The operational viability was measured in two aspects: financial performance and balance sheet performance, while the impact viability was measured in two aspects: social performance and environmental performance.

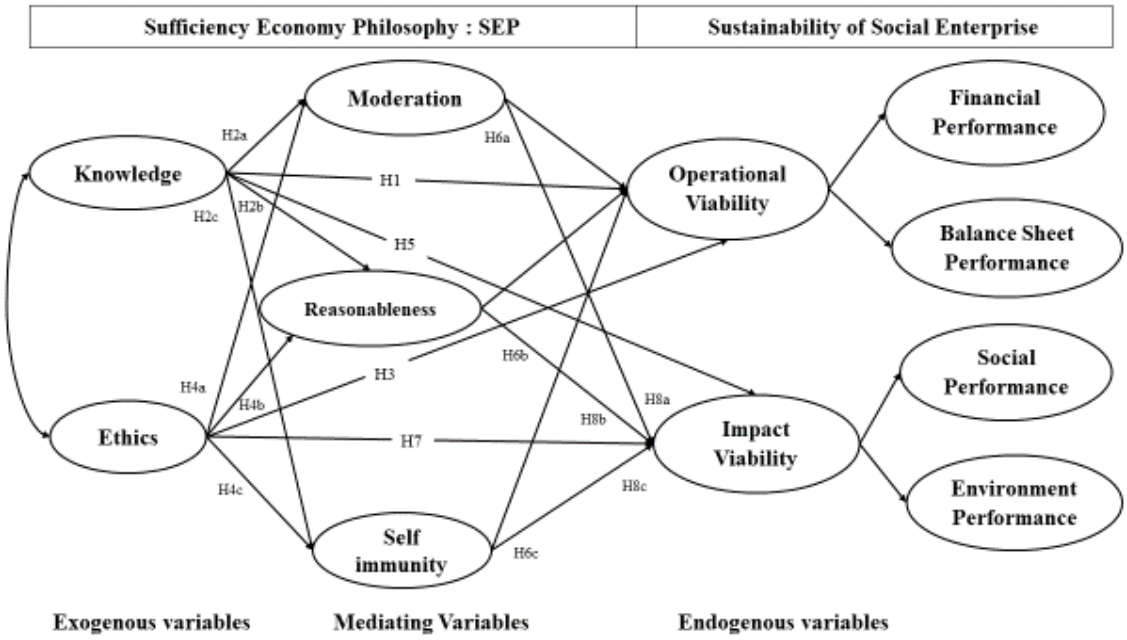

Figure 1. Initial model of the proposed relationship between Sufficiency Economy Philosophy and sustainability of social enterprises in Thailand

2.3.1 Knowledge

The literature review revealed that some researchers, such as Kantabutra (2014), did not consider knowledge as a predictor, while others measured knowledge by assessing the understanding of the sufficiency economy theory. However, this study aims to explore the impact of knowledge management (KM) on SE sustainability. One of the key activities of KM is knowledge sharing, which can help organizations to share best practices related to financial performance and appropriate social and environmental impact, with employees. Various studies, including those by Lopes et al. (2017), Sapta et al. (2021), Hossain et al. (2022), and Donkwa (2016), have confirmed that knowledge management contributes significantly to sustainability performance across economic, social, and environmental aspects. Chaivirutnukul and Chandrachai (2019) also demonstrated the positive influence of knowledge management on environmental performance or impact viability. Furthermore, Ketprapakorn and Kantabutra (2019) indicated a potential link between knowledge and operational and impact viability, as knowledge sharing has a positive correlation with both social and economic crises and environmental performance.

To balance their financial performance with their social and environmental impact, organizations can promote information sharing and the use of new technologies and ideas. By integrating knowledge and reasonableness, organizations can prioritize equality and fairness for employees instead of solely focusing on maximizing profits. Additionally, organizations can manage their operations in a reasonable way to promote sustainability and use their knowledge to protect the environment and society. Knowledgeable organizations can also use their expertise to plan, manage, and forecast operations, which can help prevent crises and maintain sustainability across financial, social, and environmental domains. Previous studies have shown that sustainability is linked to SEP components, such as moderation, reasonableness, and self-immunity (Donkwa, 2016; Kantabutra, 2014; Ketprapakorn & Kantabutra, 2019). When knowledge is integrated with these three SEP principles, it can lead to increased sustainability. Therefore, KM can exert its influence on SE sustainability through the

three pillars of SEP. This leads to the following hypotheses:

H1: Knowledge is positively related to operational viability.

H2: Knowledge is indirectly related to operational viability through the three pillars of the SEP.

H2a: Knowledge is indirectly related to operational viability through moderation.

H2b: Knowledge is indirectly related to operational viability through reasonableness.

H2c: Knowledge is indirectly related to operational viability through self- immunity.

H5: Knowledge is positively related to impact viability.

H6: Knowledge is indirectly related to impact viability through the three pillars of the SEP.

H6a: Knowledge is indirectly related to impact viability through moderation.

H6b: Knowledge is indirectly related to impact viability through reasonableness.

H6c: Knowledge is indirectly related to impact viability through self-immunity.

2.3.2 Ethics

Bull et al. (2010) argued that social enterprises prioritize higher ethical standards compared to other organizations, with ethics being an essential condition for social enterprise practice. The Chaipattana Foundation (2010) demonstrates that ethical practices combined with the three principles of social enterprise practice can lead to sustainability. Ethics in this context aims to promote moral awareness, honesty, and patience towards customers. These values can be cultivated in the organization by the management team, leading to an enhancement of the sustainability of their business. Previous studies, such as Kantabutra (2014), Donkwa (2016), and Ketprapakorn and Kantabutra (2019), have investigated the predictive value of ethics in social enterprise sustainability. Kantabutra (2014) found no statistically significant correlation between ethics and economic, social, and environmental performance, including during social and economic crises, and delivery of public benefit. On the contrary, Donkwa (2016) discovered a positive impact of ethics on financial performance. However, this study hypothesizes that ethics play a crucial role in the sustainability of social enterprises in terms of both operational and impact viability.

Previous studies have shown that when ethics is integrated with the three pillars of SEP - moderation, reasonableness, and self-immunity - it can lead to sustainability in terms of both operational and impact viability (Donkwa, 2016; Kantabutra, 2014; Ketprapakorn & Kantabutra, 2019). Ethical leaders prioritize honesty, transparency, and appropriateness in their operations, which in turn generates sufficient business results for the organization's existence. Additionally, ethical management promotes fairness and reason in managing work, creating sustainability by satisfying employees and customers. Lastly, ethical organizations with self-immunity find effective ways to manage their work without encroaching on others or competitors. Therefore, the three pillars serve as mediators between ethics and sustainability, leading to the following hypotheses:

H3: Ethics is positively related to operational viability.

H4: Ethics is indirectly related to operational viability through the three pillars of the SEP.

H4a: Ethics is indirectly related to operational viability through moderation.

H4b: Ethics is indirectly related to operational viability through reasonableness.

H4c: Ethics is indirectly related to operational viability through self-immunity.

H7: Ethics is positively related to impact viability.

H8: Ethics is indirectly related to impact viability through the three pillars of the SEP.

H8a: Ethics is indirectly related to impact viability through moderation.

H8b: Ethics is indirectly related to impact viability through reasonableness.

H8c: Ethics is indirectly related to impact viability through self-immunity.

3. RESEARCH METHODS

This research employed a quantitative approach to investigate the relationship between the sustainability of social enterprises in Thailand and the Sufficiency Economy Philosophy. Data collection was conducted between June 5th and September 20th, 2020 with 291 questionnaires being received from CEOs of social enterprises (78% response rate), with 3% of the population found to have gone out of business. The sample size of 291 respondents is deemed sufficient for Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM) analysis, meeting the minimum sample size requirement of 235 (Hair et al., 2014; Bentler & Chou, 1987)

3.1 Questionnaire

The questionnaire for this study was developed from a literature review of sustainability in social enterprises and related areas, including the works of Burkett (2010), the Sasin Graduate Institute (2010), and Kantabutra (2014); these include the 4R principle of waste management, and knowledge management. The questionnaire consisted of 47 questions divided into 5 sections: (1) respondent demographics, (2) organization demographics, (3) SEP performance, (4) leadership knowledge & ethics, (5) SE sustainability. The questionnaire used a 5-point Likert scale (5=excellent to 1=very poor) to assess SEP, SE sustainability, and leadership knowledge & ethics

3.2 Testing the Quality of the Research Instrument

The data were analyzed using SPSS 25 and AMOS 23.0 with the AMOS plugin "Model Fit" and "Master Validity Tool" (Gaskin & Lim, 2016a, 2016b). Content validity was established through expert review and adjustments based on recommendations. Internal consistency was estimated with 34 CEOs, with reliability calculated via Cronbach's alpha analysis. All constructs yielded a reliability score of 0.70 or higher, indicating the reliability of the data derived from the eleven scales (presented in Figure 1 above) (Cohen et al., 2007) as shown in Table 1.

4. RESULTS AND DISCUSSION

4.1 Measurement Model: Construct Validity

CFA was used to assess the measurement model for the studied constructs. The model consisted of seven factors, i.e, knowledge, ethics, moderation, reasonableness, self-immunity, operational viability, and impact viability. However, the latent variables were second-order factors. Operational viability

Table 1. Latent constructs, Number of items and Cronbach's Alpha

Latent Constructs	Abbreviation	Item	Cronbach's Alpha
Sufficiency Economy Philosophy			
Moderation	MO	4	0.812
Reasonableness	RE	3	0.746
Self-Immunity	SE	5	0.850
Ethics	ET	5	0.850
Knowledge	K	6	0.864
Sustainability of Social Enterprise			
Operational Viability	OV	2	0.940
Financial Performance	FS	8	0.937
Balance Sheet Performance	BSS	4	0.850
Impact viability	IV	2	0.857
Social Performance	So	6	0.818
Environment Performance	Env	6	0.865

was indicated by the first-order factors of financial and balance sheet performance, while social and environmental performance was the first-order factor for impact viability. The results of the CFA, including the correlation coefficients and composite reliability and validity assessment, are presented in table 2.

4.1.1 Correlation Coefficient of the Observed Variables

The results of the analysis show the correlation between the observed variables, which was used to assess the preliminary agreement for the structural equation modeling analysis. The correlations of all 47 pairs of observed variables ranged from -0.009 to 0.447, and were therefore below the cut-off of less than 0.85. According to Kline (2005), multicollinearity occurs when the correlation coefficient between the variables is greater than 0.85. Therefore, it is appropriate to proceed with the structural equation model analysis as there is no multicollinearity among the observed variables. The results of the Pearson's Product-Moment correlation coefficient between the observed variables in SEM is present in appendix A.

4.1.2 Confirmatory Factor Analysis: CFA.

The results of both first and second order Confirmatory Factor Analysis (CFA) align with the empirical data, making it suitable to move forward with Structural Equation Modeling (SEM). The model fit measures for 1st and 2nd Order CFA are displayed in Table 2.

4.1.3 Construct and measurement: first-order and second-order Confirmatory Factor Analysis.

The variables first undergo first-order confirmatory factor analysis (CFA). The factor loadings of all indicators were ≥ 0.7, except Mo4 (0.6), which still qualifies (Field, 2013; Hair et al., 2010; Herman, 2016) as it is ≥ 0.5, for each latent-indicator relationship. The composite reliability (CR) of all dimensions was ≥ 0.7, meeting the recommended threshold (Hair Jr. et al., 2010; Bryne, 2010; Kline, 2011; Gaskin, 2012; Zainuddin, 2012; Herman, 2016). The average variance extracted (AVE) was ≥ 0.5, indicating strong convergent validity (Field, 2009; Hair Jr. et al., 2010; Bryne, 2010; Kline, 2011; Gaskin, 2012; Zainuddin, 2012; and Herman, 2016) with C.R. higher than the AVE. The discriminant validity test showed all dimensions had MSV greater than AVE, proving they are distinct (Hair et al., 2010). The instrument is acceptable for CFA and SEM analysis, according to these results (Table 3).

The second-order CFA construct and measurement showed that the C.R. of all sub-dimensions was ≥ 0.7, meeting the recommended threshold for CFA and SEM (Hair et al., 2010; Bryne, 2010; Kline, 2011; Gaskin, 2012; Zainuddin, 2012; and Herman, 2016). The AVE was ≥ 0.5 with C.R. higher, indicating strong convergent validity.

Table 2. The Result of the Model Fit Measures of 1st Order and 2nd Order Confirmatory Factor Analysis

Measure	Threshold	1st order CFA				2nd order CFA			
		Initial Model		Final Model		Initial Model		Final Model	
		Estimate	Interpretation	Estimate	Interpretation	Estimate	Interpretation	Estimate	Interpretation
CMIN	--	1877.133	--	1682.636	--	1889.642	--	1563.029	--
DF	--	998	--	993	--	1009	--	994	--
CMIN/DF	Between 1 and 3	1.881	Excellent	1.694	Excellent	1.873	Excellent	1.572	Excellent
CFI	>0.95	0.879	Need More DF	0.905	Acceptable	0.879	Need More DF	0.922	Acceptable
SRMR	<0.08	0.067	Excellent	0.07	Excellent	0.067	Excellent	0.067	Excellent
RMSEA	<0.06	0.055	Excellent	0.049	Excellent	0.055	Excellent	0.044	Excellent
PClose	>0.05	0.015	Acceptable	0.664	Excellent	0.019	Acceptable	0.987	Excellent

The discriminant validity test showed MSV greater than the AVE, proving distinct dimensions. Based on Alpha, CR, AVE, MSV, and factor loading, all dimensions were deemed acceptable for SEM (Table 4).

Additionally, Table 5 indicates discriminant validity with all bold diagonal values higher than other values in the same row/column, making SEM acceptable.

Table 3. Reliability, Convergent Validity, and Discriminant Validity: First-order Model Evaluation.

Constructs	Indicator	Standardized loading	Composite Reliability :CR	Convergent Validity: AVE	MSV
Moderation	Mo1	0.740	0.820	0.536	0.398
	Mo2	0.773			
	Mo3	0.809			
	Mo4	0.587			
Reasonableness	Re1	0.744	0.746	0.495	0.311
	Re2	0.704			
	Re3	0.661			
Self-Immunity	Se1	0.757	0.838	0.510	0.224
	Se2	0.744			
	Se3	0.765			
	Se4	0.679			
	Se5	0.616			
Ethics	Et1	0.718	0.848	0.529	0.311
	Et2	0.650			
	Et3	0.726			
	Et4	0.729			
	Et5	0.806			
Knowledge	K1	0.777	0.860	0.507	0.099
	K2	0.722			
	K3	0.694			
	K4	0.673			
	K5	0.713			
	K6	0.687			
χ^2		1682.636			

Table 4. Reliability, Convergent Validity, and Discriminant Validity Results: Second-Order Model Evaluation.

Second-order Constructs	First-order Constructs	Indicator	Standardized loading	Composite Reliability: CR	Convergent Validity: AVE	MSV
Operational Viability	**Financial Performance**	FS	0.966	0.888	0.800	0.398
		FS1	0.716			
		FS2	0.846			
		FS3	0.831			
		FS4	0.811			
		FS5	0.757			
		FS6	0.821			
		FS7	0.834			
		FS8	0.782			
	Balance Sheet Performance	BSS	0.817			
		BSS1	0.747			
		BSS2	0.679			
		BSS3	0.816			
		BSS4	0.855			

Table 4 (continued)

Impact Viability	**Social Performance**	SO	0.642	0.708	0.552	0.363
		So1	0.634			
		So2	0.486			
		So3	0.653			
		So4	0.628			
		So5	0.657			
		So6	0.765			
	Environment Performance	ENV	0.832			
		Env1	0.671			
		Env2	0.632			
		Env3	0.664			
		Env4	0.687			
		Env5	0.717			
		Env6	0.653			
	χ^2		1563.029			

Table 5. The Correlation of Construct

	MO	RE	SE	ET	K	OV	IV
MO	**0.732**						
RE	0.448***	**0.704**					
SE	0.307***	0.457***	**0.714**				
ET	0.375***	0.558***	0.354***	**0.727**			
K	0.032	0.308***	0.259***	0.201**	**0.712**		
OV	0.631***	0.281***	0.473***	0.419***	0.066	**0.895**	
IV	0.583***	0.547***	0.359***	0.437***	0.314***	0.603***	**0.743**

Remark:

- Significance of Correlations: * $p < 0.050$, ** $p < 0.010$, and *** $p < 0.001$
- MO = Moderation; RE = Reasonableness; SE = Self-immunity; K= Knowledge; OV = Operational viability; IV = Impact viability
- The above calculation was performed using the "Master Validity Tool" AMOS Plugin by Gaskin & Lim (2016a)

4.2 Structural Equation Model: Hypothesis testing

4.2.1 Structural Equation Model

The SEM analysis was conducted to investigate the influence of the factors of the Sufficiency Economy Philosophy on the sustainability of social enterprises. The final result shows that the model is consistent with the empirical data: Chi-square = 694.932, DF =1007, CMIN/DF=1.683, CFI= 0.906, SRMR = 0.079, RMSEA=0.049 and PClose=0.723. It can be concluded that the structural equation model of the Sufficiency Economy Philosophy as an influencing factor on the sustainability of social enterprises is consistent with the empirical data.

4.2.2 The Results of the Hypothesis Tests

The results of the Structural Equation Model reveal the effects of coefficient estimation, shown in Figure 2, while the summary of hypothesis testing is presented in Table 7.

Table 6. The Result of the Model Fit of the Structural Equation Model

Measure	Threshold	Initial Model		Final Model	
		Estimate	Interpretation	Estimate	Interpretation
CMIN	--	1933.508	--	1681.112	--
DF	--	1013	--	1003	--
CMIN/DF	Between 1 and 3	1.909	Excellent	1.676	Excellent
CFI	>0.95	0.874	Need More DF	0.907	Acceptable
SRMR	<0.08	0.077	Excellent	0.077	Excellent
RMSEA	<0.06	0.056	Excellent	0.048	Excellent
PClose	>0.05	0.005	Terrible	0.756	Excellent

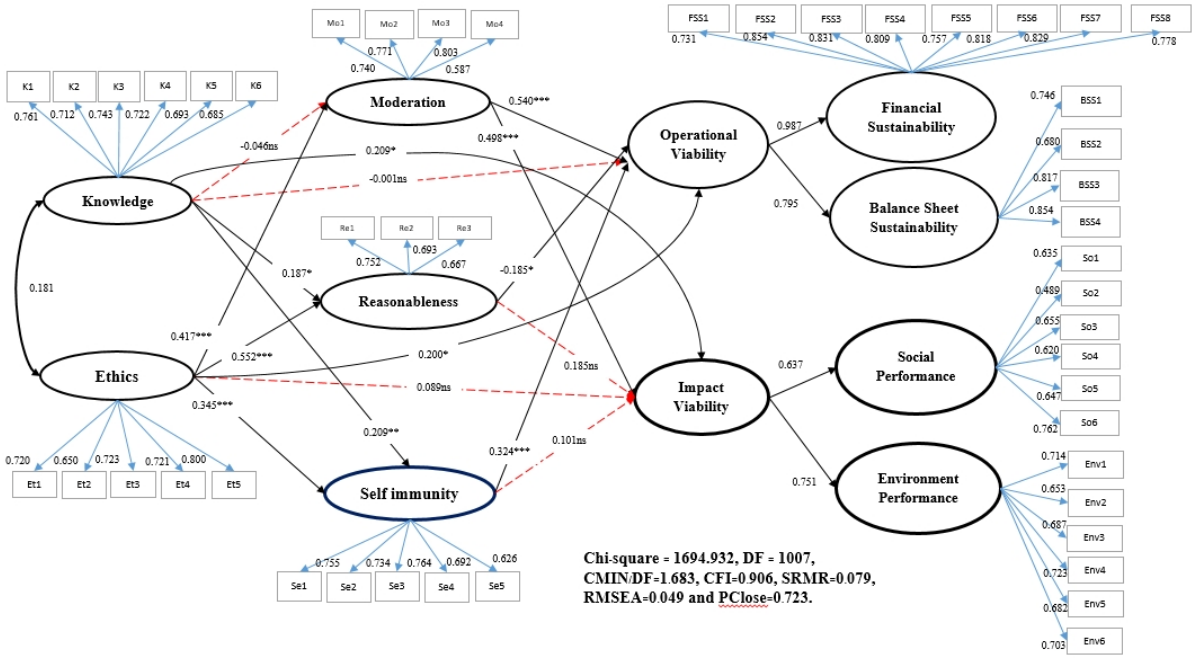

Figure 2. Summary of the hypothesis tests on the Sufficiency Economy Philosophy and the sustainability of social enterprises in Thailand - Standardization estimated.

Note. ⟶ The correlation was statistically significant.

⟶ The correlation was not a statistically significant.

Table 7. Summary of Hypothesis Testing

Hypothesis	Empirical Support
H1: Knowledge is positively related to operational viability	✗
H2: Knowledge is indirectly related to operational viability through the three pillars of the SEP.	
H2a: Knowledge is indirectly related to operational viability through moderation	✗
H2b: Knowledge is indirectly related to operational viability through reasonableness	✗
H2c: Knowledge is indirectly related to operational viability through self- immunity.	✗
H3: Ethics is positively related to operational viability	✓
H4: Ethics is indirectly related to operational viability through the three pillars of the SEP.	
H4a: Ethics is indirectly related to operational viability through moderation	✓
H4b: Ethics is indirectly related to operational viability through reasonableness	✓
H4c: Ethics is indirectly related to operational viability through self-immunity.	✓
H5: Knowledge is positively related to impact viability.	✓

Table 7 (continued)

H6: Knowledge is indirectly related to impact viability through the three pillars of the SEP.	
H6a: Knowledge is indirectly related to impact viability through moderation.	✗
H6b: Knowledge is indirectly related to impact viability through reasonableness	✗
H6c: Knowledge is indirectly related to impact viability through self-immunity.	✗
H7: Ethics is positively related to impact viability.	✗
H8: Ethics is indirectly related to impact viability through the three pillars of the SEP.	
H8a: Ethics is indirectly related to impact viability through moderation.	✓
H8b: Ethics is indirectly related to impact viability through reasonableness	✓
H8c: Ethics is indirectly related to impact viability through self-immunity.	✓

Remark : ✗ = hypothesis not supported; ✓ = hypothesis supported

The results of hypothesis testing showed 8 significant hypotheses, including a positive relationship between ethics and operational viability, and an indirect effect of ethics on operational viability and impact viability through the pillars of the SEP (moderation, reasonableness, and self-immunity). These results suggest that the SEP's pillars play a crucial role in the relationship between ethics and sustainability, both financially, socially and environmentally. Ethical social enterprises that follow SEP can ensure both financial, social and environmental sustainability.

Additionally, the results of the hypothesis testing indicate that H1-H2c and H6a-H7 were not supported by empirical evidence. The study found that knowledge did not have a direct (H1) or indirect (H2a-H2c) effect on operational viability. While knowledge management aims to help organizations manage employees' learning systematically, sharing knowledge, and analyzing problems, it is neither directly nor indirectly automatically transferable to the effectiveness of operational conduct. Although knowledge management can improve organizational efficiency and provide a competitive advantage (Tseng & Lee, 2014), it may not be linked to financial performance.

Upon further examination, it was found that empirical data did not support hypotheses H6a-H6c. The analysis indicated that knowledge has a direct effect only on impact viability, which encompasses social and environmental performance. However, knowledge did not have an indirect effect on impact viability through the three pillars of moderation, reasonableness, and self-immunity. This finding may be attributed to the fact that social enterprises are already cognizant of their social and environmental impacts, thereby bypassing the need to undergo the three pillars.

Nevertheless, when each individual pillar was considered, it was discovered that only moderation fostered sustainability in terms of social and environmental impacts. This outcome might be attributed to the interplay of both knowledge and moderation, which heightens organizational awareness of the importance of being self-sustaining without causing harm to others.

The lack of empirical support for H7 in the study raises questions about the significance of ethics in social and environmental performance, which is similar to the findings of Kantabutra (2014). The subsequent finding suggests that ethical considerations may not have a direct effect on impact viability. This may be due to the fact that measuring ethics in social enterprises primarily focuses on the level of morality of their employees, rather than their impacts on the environment or society. Furthermore, it is possible that the influence of ethical considerations is indirect, rather than direct. For instance, ethical practices may enhance the reputation of social enterprises, leading to increased trust and support from stakeholders. However, this effect may not be immediate and may take time to manifest.

Another factor to consider is that ethical considerations may be just one of many factors that contribute to social and

environmental performance. Other factors, such as the quality of the products or services offered, the effectiveness of the business model, or the degree of stakeholder engagement, may play a more prominent role.

4.3 The Mediating Effect of the Sufficiency Economy Philosophy

Research on the effect of the SEP on operational viability found that moderation, reasonableness, self-immunity, and ethics, have a significant direct impact on financial sustainability. Moderation had the highest direct impact, followed by self-immunity and ethics. This differs from previous studies by Kantabutra (2014) and Donkwa (2016), who found resilience and sharing as the biggest impacts on social and economic crises, and self-immunity on financial management. Differences in data sources may have led to differing results.

Examining the mediating effect of SEP showed that ethics had a significant direct and indirect effect on operational viability through the SEP (moderation, reasonableness, and self-immunity). This supports the findings of Kantabutra (2014) that ethics indirectly impacts social and economic crises. SEs with both ethics and SEP practices will have a greater impact on financial sustainability. The highest total effect on operational viability was found to be SEP moderation, indicating its importance for financial sustainability.

The SEP had a significant direct effect on impact viability through moderation and knowledge, with moderation having the highest total effect. This differs from Kantabutra (2014), who found that resilience had the biggest impact on public benefits.

Examining the mediating effect of SEP showed that ethics only had an indirect effect on impact viability through the three pillars of the SEP (moderation, reasonableness, and self-immunity), similar to Kantabutra (2014). However, moderation had the highest total effect on impact viability.

In summary, moderation was a crucial predictor for both operational viability and impact viability, suggesting that moderate SEs will ensure overall sustainability in both financial and social-environmental aspects, as indicated in Table 8.

Table 8. The results on the Mediating Effect of Sufficiency Economy Philosophy

Construct	Effects			Result
	Direct	Indirect	Total	
Operational viability				
Knowledge	**-0.001**	**0.008**	**0.007**	**Not significance**
→Moderation	-0.046	-0.025	-0.071	
→Reasonableness	0.187**	-0.035	0.152**	
→Self-immunity	0.209**	0.068	0.277**	
Ethics	**0.200***	**0.235****	**0.435****	**Partial mediation**
→Moderation	0.417**	0.225	0.642**	
→Reasonableness	0.552***	-0.102	0.450**	
→Self-immunity	0.345***	0.112	0.457***	
Moderation	0.540**		0.540**	
Reasonableness	-0.185*		-0.185*	
Self-immunity	0.324***		0.324**	
Impact viability				
Knowledge	**0.209***	**0.033**	**0.242***	**Direct effect**
→Moderation	-0.046	-0.023	-0.069	
→Reasonableness	0.187**	0.035	0.222**	
→Self-immunity	0.209**	0.021	0.230**	

Table 8 (continued)

Ethics	**0.089**	**0.345*** **	**0.434** **	**Full mediation**
→Moderation	0.417**	0.208	0.625**	
→Reasonableness	0.552***	0.064	0.616***	
→Self-immunity	0.345***	0.035	0.380***	
Moderation	**0.498*** **		**0.498*** **	
Reasonableness	**0.185**		**0.185**	
Self-immunity	**0.101**		**0.101**	

Remark: * = < 0.05, ** = < 0.01, *** = < 0.001

5. CONCLUSION AND RECOMMENDATIONS

The research results highlight that moderation is the most crucial predictor of SEs and has the greatest overall effect on SEs' sustainability in both financial and social-environmental aspects. SEs that are moderate are more likely to achieve sustainability. The study also discovered that the three pillars of the SEP (moderation, rationality, and self-sufficiency) have a significant impact on the relationship between ethics and the sustainability of social enterprises. This provides the first evidence that the SEP principles are essential transmission factors rooted in ethics and that SEs following the SEP will have improved sustainability. Further research could explore the link between the Sufficiency Economy Philosophy's knowledge and knowledge management, taking into account various factors beyond ethics, that contribute to a social enterprise's sustainability. Additionally, this model could be applied to community enterprises for comparison. Moreover, since there is some confusion in the concept of the "Sufficiency Economy Philosophy by King Rama 9" even among Thais, future research aimed at clarifying the meaning of the philosophy and its application in various areas would be worthwhile.

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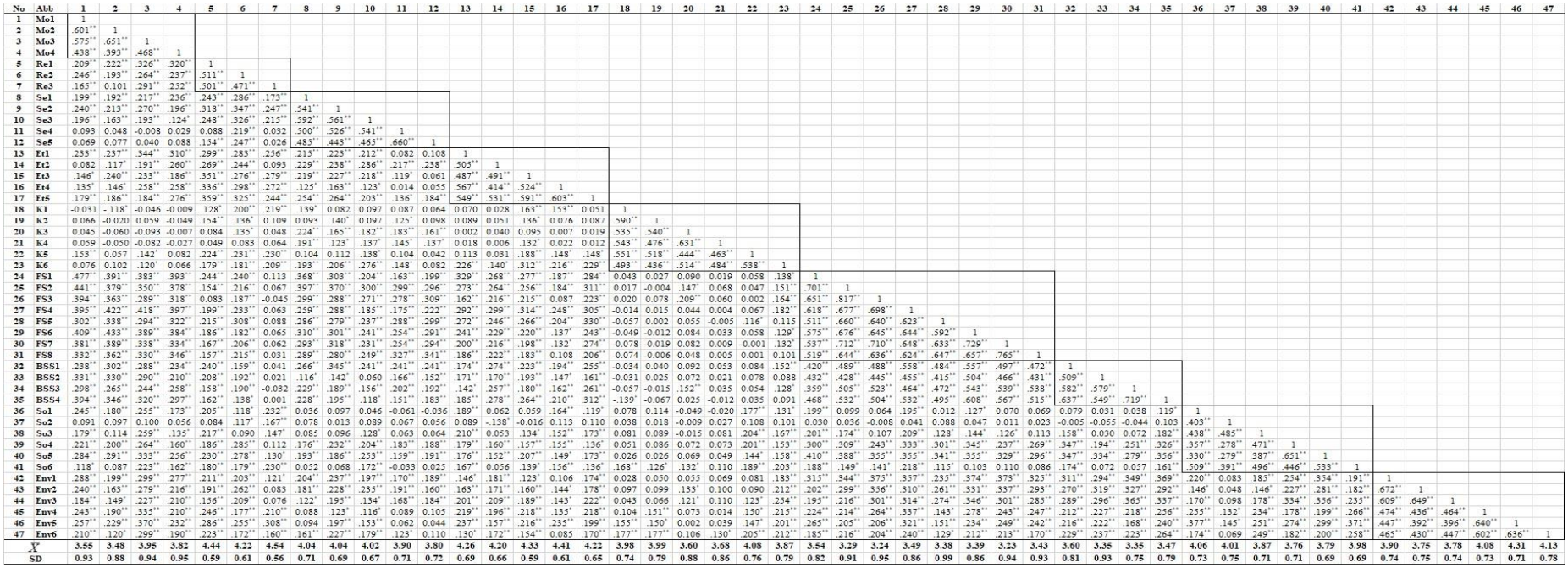
APPENDIX A



No	Abb	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
1	Mo1	1																																														
2	Mo2	.601**	1																																													
3	Mo3	.575**	.651**	1																																												
4	Mo4	.438**	.393**	.468**	1																																											
5	Re1	.209**	.222**	.326**	.320**	1																																										
6	Re2	.246**	.193**	.264**	.237**	.511**	1																																								
7	Re3	.165**	0.101	.291**	.252**	.501**	.471**	1																																							
8	Se1	.199**	.192**	.217**	.236**	.243**	.286**	.173**	1																																							
9	Se2	.240**	.213**	.270**	.196**	.318**	.347**	.247**	.541**	1																																						
10	Se3	.196**	.163**	.193**	.124*	.248**	.326**	.215**	.592**	.561**	1																																					
11	Se4	0.093	0.048	-0.008	0.029	0.088	.219**	0.032	.500**	.526**	.541**	1																																				
12	Se5	0.069	0.077	0.040	0.088	.154**	.247**	0.026	.485**	.443**	.465**	.660**	1																																			
13	Et1	.233**	.237**	.344**	.310**	.299**	.283**	.256**	.215**	.223**	.212**	0.082	0.108	1																																		
14	Et2	0.082	.117*	.191**	.260**	.269**	.244**	0.093	.229**	.238**	.286**	.217**	.238**	.505**	1																																	
15	Et3	.146*	.240**	.233**	.186**	.351**	.276**	.279**	.219**	.227**	.218**	.119*	0.061	.487**	.491**	1																																
16	Et4	.135*	.146*	.258**	.258**	.336**	.298**	.272**	.125*	.163**	.123*	0.014	0.055	.567**	.414**	.524**	1																															
17	Et5	.179**	.186**	.184**	.276**	.359**	.325**	.244**	.254**	.264**	.203**	.136*	.184**	.549**	.531**	.591**	.603**	1																															
18	K1	-0.031	-.118*	-0.046	-0.009	.128*	.200**	.219**	.139*	0.082	0.097	0.087	0.064	0.070	0.028	.163**	.153**	0.051	1																													
19	K2	0.066	-0.020	0.059	-0.049	.154**	.136*	0.109	0.093	.140*	0.097	.125*	0.098	0.089	0.051	.136*	0.076	0.087	.590**	1																												
20	K3	0.045	-0.060	-0.093	-0.007	0.084	.135*	0.048	.224**	.165**	.182**	.183**	.161**	0.002	0.040	0.095	0.007	0.019	.535**	.540**	1																											
21	K4	0.059	-0.050	-0.082	-0.027	0.049	0.083	0.064	.191**	.123*	.137*	.145*	.137*	0.018	0.006	.132*	0.022	0.012	.543**	.476**	.631**	1																										
22	K5	.153**	0.057	.142*	0.082	.224**	.231**	.230**	0.104	0.112	.138*	0.104	0.042	0.113	0.031	.188**	.148*	.148*	.551**	.518**	.444**	.463**	1																									
23	K6	0.076	0.102	.120*	0.066	.179**	.181**	.209**	.193**	.206**	.276**	.148*	0.082	.226**	.140*	.312**	.216**	.229**	.493**	.436**	.514**	.484**	.538**	1																								
24	FS1	.477**	.391**	.383**	.393**	.244**	.240**	0.113	.368**	.303**	.204**	.163**	.199**	.329**	.268**	.277**	.187**	.284**	0.043	0.027	0.090	0.019	0.058	.138*	1																						
25	FS2	.441**	.379**	.350**	.378**	.154**	.216**	0.067	.397**	.370**	.300**	.299**	.296**	.273**	.264**	.256**	.184**	.311**	0.017	-0.004	.147*	0.068	0.047	.151**	.701**	1																				
26	FS3	.394**	.363**	.289**	.318**	0.083	.187**	-0.045	.299**	.288**	.271**	.278**	.309**	.162**	.216**	.215**	0.087	.223**	0.020	0.078	.209**	0.060	0.002	.164**	.651**	.817**	1																			
27	FS4	.395**	.422**	.418**	.397**	.199**	.233**	0.063	.259**	.288**	.185**	.175**	.222**	.292**	.299**	.314**	.248**	.305**	-0.014	0.015	0.044	0.004	0.067	.182**	.618**	.677**	.698**	1																		
28	FS5	.302**	.338**	.294**	.322**	.215**	.308**	0.088	.286**	.279**	.237**	.288**	.299**	.272**	.246**	.266**	.204**	.330**	-0.057	0.002	0.055	-0.005	.116*	0.115	.511**	.660**	.640**	.623**	1																	
29	FS6	.409**	.433**	.389**	.384**	.186**	.182**	0.065	.310**	.301**	.241**	.254**	.291**	.241**	.229**	.220**	.137*	.243**	-0.049	-0.012	0.084	0.033	0.058	.129*	.575**	.676**	.645**	.644**	.592**	1																
30	FS7	.381**	.389**	.338**	.334**	.167**	.206**	0.062	.293**	.318**	.231**	.254**	.294**	.200**	.216**	.198**	.132*	.274**	-0.078	-0.019	0.082	0.009	-0.001	.132*	.537**	.712**	.710**	.648**	.633**	.729**	1														
31	FS8	.332**	.362**	.330**	.346**	.157**	.215**	0.031	.289**	.280**	.249**	.327**	.341**	.186**	.222**	.183**	0.108	.206**	-0.074	-0.006	0.048	0.005	0.001	0.101	.519**	.644**	.636**	.624**	.647**	.657**	.765**	1													
32	BSS1	.238**	.302**	.288**	.234**	.240**	.159**	0.041	.266**	.345**	.241**	.241**	.241**	.174**	.274**	.223**	.194**	.255**	-0.034	0.040	0.092	0.053	0.084	.152**	.420**	.489**	.488**	.558**	.484**	.557**	.497**	.472**	1												
33	BSS2	.331**	.330**	.290**	.210**	.208**	.192**	0.021	.116*	.142*	0.060	.166**	.152**	.171**	.170**	.193**	.147*	.161**	-0.031	0.025	0.072	0.021	0.078	0.088	.432**	.428**	.445**	.455**	.415**	.504**	.466**	.431**	.509**	1											
34	BSS3	.298**	.265**	.244**	.258**	.158**	.190**	-0.032	.229**	.189**	.156**	.202**	.192**	.142*	.257**	.180**	.162**	.261**	-0.057	-0.015	.152**	0.035	0.054	.128*	.359**	.505**	.523**	.464**	.472**	.543**	.539**	.538**	.582**	.579**	1									
35	BSS4	.394**	.346**	.320**	.297**	.162**	.138*	0.001	.228**	.195**	.118*	.151**	.183**	.185**	.278**	.264**	.210**	.312**	-.139*	-0.067	0.025	-0.012	0.035	0.091	.468**	.532**	.504**	.532**	.495**	.608**	.567**	.515**	.637**	.549**	.719**	1								
36	So1	.245**	.180**	.255**	.173**	.205**	.118*	.232**	0.036	0.097	0.046	-0.061	-0.036	.189**	0.062	0.059	.164**	.119*	0.078	0.114	-0.049	-0.020	.177**	.131*	.199**	0.099	0.064	.195**	0.012	.127*	0.070	0.069	0.079	0.031	0.038	.119*	1							
37	So2	0.091	0.097	0.100	0.056	0.084	.117*	.167**	0.078	0.013	0.089	0.067	0.056	0.089	-.138*	-0.016	0.113	0.110	0.038	0.018	-0.009	0.027	0.108	0.101	0.030	0.036	-0.008	0.041	0.088	0.047	0.011	0.023	-0.005	-0.055	-0.044	0.103	.403**	1						
38	So3	.179**	0.114	.259**	.135*	.217**	0.090	.147*	0.085	0.096	.128*	0.063	0.064	.210**	0.053	.134*	.152**	.173**	0.081	0.089	-0.015	0.081	.204**	.167**	.201**	.174**	0.107	.209**	.128*	.144*	.126*	0.113	.158**	0.030	0.072	.182**	.438**	.485**	1					
39	So4	.221**	.200**	.264**	.160**	.186**	.285**	0.112	.176**	.232**	.204**	.183**	.188**	.179**	.160**	.157**	.155**	.136*	0.051	0.086	0.072	0.073	.201**	.153**	.300**	.309**	.243**	.333**	.301**	.345**	.237**	.269**	.347**	.194**	.251**	.326**	.357**	.278**	.471**	1				
40	So5	.284**	.291**	.333**	.256**	.230**	.278**	.130*	.193**	.186**	.253**	.159**	.191**	.176**	.152**	.207**	.149*	.173**	0.026	0.026	0.069	0.049	.144*	.158**	.410**	.388**	.355**	.355**	.341**	.355**	.329**	.296**	.347**	.334**	.279**	.356**	.330**	.279**	.387**	.651**	1			
41	So6	.118*	0.087	.223**	.162*	.180**	.179**	.230**	0.052	0.068	.172**	-0.033	0.025	.167**	0.056	.139*	.156**	.136*	.168**	.126*	.132*	0.110	.189**	.203**	.188**	.149*	.141*	.218**	.115*	0.103	0.110	0.086	.174**	0.072	0.057	.161**	.509**	.391**	.496**	.446**	.533**	1			
42	Env1	.288**	.199**	.299**	.277**	.211**	.203**	.121*	.204**	.237**	.197**	.170**	.189**	.146*	.181**	.123*	0.106	.174**	0.028	0.050	0.055	0.069	0.081	.183**	.315**	.344**	.375**	.357**	.235**	.374**	.373**	.325**	.311**	.294**	.349**	.369**	.220**	0.083	.185**	.254**	.354**	.191**	1			
43	Env2	.240**	.163**	.279**	.216**	.191**	.262**	0.083	.181**	.228**	.235**	.191**	.160**	.163**	.171**	.160**	.144*	.178**	0.097	0.099	.133*	0.100	0.090	.212**	.202**	.299**	.356**	.310**	.261**	.331**	.337**	.293**	.270**	.319**	.327**	.292**	.146*	0.048	.146*	.227**	.281**	.182**	.672**	1		
44	Env3	.184**	.149*	.227**	.210**	.156**	.209**	0.076	.122*	.195**	.134*	.168**	.184**	.201**	.209**	.189**	.143*	.222**	0.043	0.066	.121*	0.110	.123*	.254**	.195**	.216**	.301**	.314**	.274**	.346**	.301**	.285**	.289**	.296**	.365**	.337**	.170**	0.098	.178**	.334**	.356**	.235**	.609**	.649**	1	
45	Env4	.243**	.190**	.335**	.210**	.246**	.177**	.210**	0.088	.123*	.116*	0.089	0.105	.219**	.196**	.218**	.135*	.218**	0.104	.151**	0.073	0.014	.150*	.215**	.224**	.214**	.264**	.337**	.143*	.278**	.243**	.247**	.212**	.227**	.218**	.256**	.255**	.132*	.234**	.178**	.199**	.266**	.474**	.436**	.464**	1	
46	Env5	.257**	.229**	.370**	.232**	.286**	.255**	.308**	0.094	.197**	.153**	0.062	0.044	.237**	.157**	.216**	.235**	.199**	.155**	.150*	0.002	0.039	.147*	.201**	.265**	.205**	.206**	.321**	.151**	.234**	.249**	.242**	.216**	.222**	.168**	.240**	.377**	.145*	.251**	.274**	.299**	.371**	.447**	.392**	.396**	.640**	1	
47	Env6	.210**	.120*	.299**	.190**	.223**	.172**	.160**	.161**	.227**	.179**	.123*	0.110	.130*	.172**	.154**	0.085	.170**	.177**	.177**	0.106	.130*	.205**	.212**	.185**	.216**	.204**	.240**	.129*	.212**	.213**	.170**	.229**	.237**	.223**	.264**	.174**	0.069	.249**	.182**	.200**	.258**	.465**	.430**	.447**	.602**	.636**	1
	$\bar{X}$	**3.55**	**3.48**	**3.95**	**3.82**	**4.44**	**4.22**	**4.54**	**4.04**	**4.04**	**4.02**	**3.90**	**3.80**	**4.26**	**4.20**	**4.33**	**4.41**	**4.22**	**3.98**	**3.99**	**3.60**	**3.68**	**4.08**	**3.87**	**3.54**	**3.29**	**3.24**	**3.49**	**3.38**	**3.39**	**3.23**	**3.43**	**3.60**	**3.35**	**3.35**	**3.47**	**4.06**	**4.01**	**3.87**	**3.76**	**3.79**	**3.98**	**3.90**	**3.75**	**3.78**	**4.08**	**4.31**	**4.13**
	SD	**0.93**	**0.88**	**0.94**	**0.95**	**0.59**	**0.61**	**0.56**	**0.71**	**0.69**	**0.67**	**0.71**	**0.72**	**0.69**	**0.66**	**0.59**	**0.61**	**0.65**	**0.74**	**0.79**	**0.88**	**0.86**	**0.76**	**0.79**	**0.82**	**0.91**	**0.95**	**0.86**	**0.99**	**0.86**	**0.94**	**0.93**	**0.81**	**0.93**	**0.75**	**0.79**	**0.73**	**0.75**	**0.71**	**0.71**	**0.69**	**0.69**	**0.74**	**0.75**	**0.74**	**0.73**	**0.71**	**0.78**

Figure 3. The Result of Pearson's Product-Moment Correlation Coefficient Between the Observed Variables in SEM.