Handling Solar Power Industry Investment Problem by Integrating MULTIMOORA with Entropy method under Heterogeneous Environment

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Abstract: - Solar power industry is an important industry which is deserved to support because every government will try to execute carbon reduction task and solar power is a high potential green energy development resource. However, electric generating cost of solar power is higher than other method and it is hard to analyze and invest solar power enterprise because major part of solar power enterprises rely on government support and government support is uncertainty. The goal of this research is to develop a framework to evaluate the value of solar power enterprise. Based on our framework, investor can understand actual value of solar power enterprises. An actual solar power enterprise investment evaluation project will be implemented for reader understand proposed method. At last, some conclusion and future research will be discussed as ending.

Key-Words: Solar Power Industry; MULTIMOORA; Entropy; Uncertainty.

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1 Introduction

From the perspective of global carbon reduction demands, controlling the atmospheric carbon dioxide concentration at 450 ppm is important task. Developing green energy resource is the way to approach carbon reduction goal. Solar power is one kind of green energy resource. This kind of resource is suitable to develop in Taiwan because of below reason.

(1) Location

Taiwan locates in Subtropical region. Sunshine is enough. Set up solar power equipment can bring enough power generation per hours.

(2) Equipment

Taiwan is world's second largest supplier of solar power components [1]. So, solar power equipment can acquire component when it is broken in Taiwan.

(3) Government Support

Taiwan government wants to execute policy of "Non-nuclear homes" [2]. So, all of nuclear power plant will be closed in 2025. It will generate a big electricity gap. Therefore, Taiwan government support solar power industry in order to fill up electricity gap (Refer to Fig. 1).

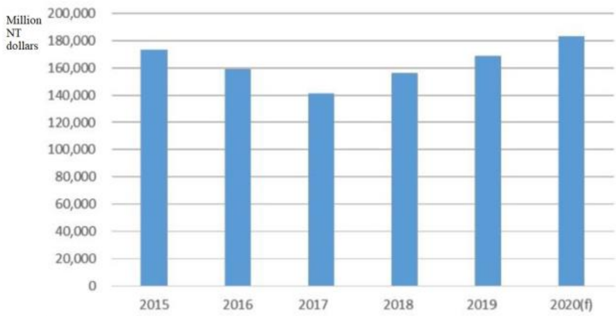

Fig 1. Output value of Solar Power Industry in Taiwan

However, it also exists disadvantage to develop solar power industry

(1) Climate

Taiwan is a rainy island. Solar power generation hours per year in Taiwan is 1000 hours.

(2) Other Country's' Competition

Solar power industry in Taiwan face low price competition in Mainland China. Market share rate of China in solar power industry is very high (Refer to Fig. 2).

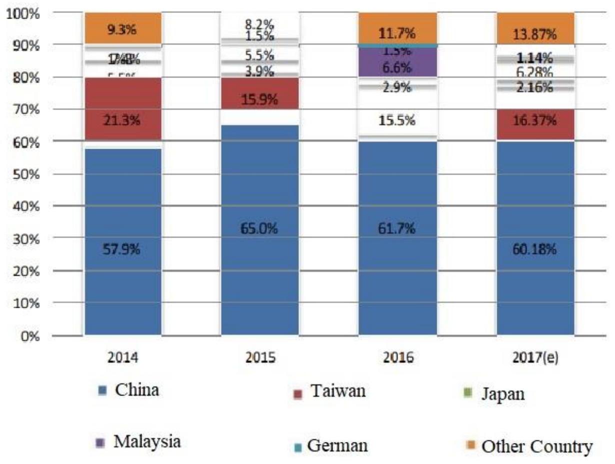

Fig 2. Market Share of Each Country

Although, Taiwan solar power industry exist high development potential. But it also faces highly competitive pressure from China. Compare with traditional power generation mode, generation cost of solar power is very high. Until now, solar power industry cannot survive without supporting of government in Taiwan. Because of above reason, it is hard to evaluate the value of solar power enterprise reasonably. The goal of this research is to develop a framework to evaluate the value of solar power enterprise to invest. Based on our framework, investor can understand actual value of each solar power enterprise.

The content of this research is as follows. At beginning, past research about solar power enterprise evaluation will be collected and arranged. And then, proposed method will be introduced. A real case study will be explained for reader understand proposed method. Finally, conclusion and future research will be discussed as ending.

2 Literature Review

This chapter will investigate relative research about enterprises performance evaluation problem. Various kinds of decision-making methods have been applied to analyze performance of enterprise in past research. In financial performance evaluation aspect, grey relation analysis was integrated with fuzzy technique for order performance by similarity to ideal solution (fuzzy TOPSIS) to evaluate Taiwan enterprises' performance [3]. Pai et al. (2014) employed TOPSIS, ELECTRE, PROMETHEE and VIKOR to analyze performance of enterprise and applied intersection concept to select suitable enterprise to invest [4]. Rouhani and Ravasan (2015) build a framework to evaluate business intelligence ability of enterprise by fuzzy analytic network process (FANP) method [5]. Ran and Wang (2015) applied fuzzy information by integrating grey relational analysis (GRA) and Technique for order performance by similarity to ideal solution (TOPSIS) with fuzzy theory to handle high technology enterprise evaluation problem. Veza et al. (2015) applied preference ranking organization method for enrichment evaluation (PROMETHEE) technology to evaluate the competitive ability of each Croatia industrial enterprises [7]. You et al. (2017) applied best-worst method (BWM) to determined weights of each criterion and used TOPSIS to rank operation performance of each power grid enterprise [8]. Gupta (2018) evaluated service quality of Indian enterprise by SERVQUAL questionnaire. Best worst method was integrated with VIKOR to rank the best enterprise in Indian [9]. Shi et al. (2018) used pearson correlation analysis (PCA) to test significance discrimination criterion and evaluate performance of 713 small enterprises in China [10]. Zhou et al. (2018) analyzed to choose best small-and-medium enterprises (SMEs) by using decision Making Trial and. Evaluation Laboratory (DEMATEL) and VIKOR technology based on economic, environmental and social criteria [11]. Branco et al. (2019) identified the determinant criteria for evaluating SME and employed fuzzy cognitive map to evaluate the relationship among criteria in order to handle enterprise performance evaluation problem [12]. Xiong et al. (2019) considered financial management, chain logistics process, development ability and customer service as criteria and used analytic hierarchy process (AHP) to evaluate weight of each criterion for evaluating performance of each enterprise [13]. Song et al. (2020) integrated prospect theory with VIKOR to evaluate performance of enterprise by considering decision-maker's risk psychology and preferences [14]. Rouyendegh et al. (2020) used intuitionistic fuzzy Technique for Order of Preference by Similarity to Ideal Solution (IF-TOPSIS) to analyze enterprise performance by considering qualitative preference of experts' opinion in uncertainty environment and hesitation mentality. After that, data envelopment analysis (DEA) were applied to classify performance of each enterprise based on both qualitative and quantitative criteria [15].

Above literatures are arranged as Table 1. Although, a huge amount of methods has been applied in evaluating performance of enterprise. However, traditional multi criteria decision making method can not judge performance of solar power enterprise reasonably because the performance of solar power enterprise relies on some uncertainty factors such as government support which is changed easily. So, it needs a flexible mechanism to judge performance of each solar power enterprise. MULTIMOORA is a special multi criteria decision making method. This method possesses three sub-mechanism (ratio system, reference point approach and full multiplicative form) to judge performance of each solar power enterprise. Decision maker can acquire relatively object analysis result for evaluating performance of each solar power enterprise.

Table 1 Relative literatures for handling enterprise evaluation problem

Author	Year	Method											
		A	B	C	D	E	F	G	H	I	J	K	L
Wang[3]	2014	◎											
Pai et al. [4]	2014	◎	◎	◎	◎								
Rouhani and Ravasan [5]	2015					◎							
Ran and Wang [6]	2015	◎					◎						
Veza et al. [7]	2015			◎									
You et al. [8]	2017	◎						◎					
Gupta [9]	2018				◎								
Shi et al. [10]	2018								◎				
Zhou et al [11]	2018				◎					◎			
Branco et al. [12]	2019										◎		
Xiong et al. [13]	2019											◎	
Song et al. [14]	2020				◎								
Rouyendegh et al. [15]	2020	◎											◎

A:TOPSIS; B:ELECTRE; C:PROMETHEE; D:VIKOR; E:ANP; F:GRA; G:BWM; H:PCA; I:DEMATEL; J:fuzzy cognitive map; K:AHP;L:DEA

3 Proposed method

3.1. Preliminary

Definition 1. Suppose that LV= $\{lv_0^z, lv_1^z, \ldots, lv_{z-1}^z\}$ is linguistic term set whose scale of linguistic variable is z [16-18].

Definition 2. Suppose that linguistic transfer function T:LV->N is the function who can transfer linguistic variable (lv) into crisp value n (n∈[0,1]) [16-18].

$$T(lv_i^z) = \frac{i}{z-1} = n \qquad (1)$$

Definition 3. Suppose that linguistic transfer inverse function T^{-1}:N->LV is the function who can transfer crisp value n (n∈[0,1]) into linguistic variable (lv) [16-18].

$$T^{-1}(n) = lv_{n*(z-1)}^z \qquad (2)$$

Definition 4. Suppose that s=$\{s_h | h = 1,2, \ldots, k\}$ is decision makers' opinion where organized as linguistic term set. Decision maker integration function M:LV->LV is the function where can integrate decision maker's opinion [18-19]

$$s = T^{-1}\left(\frac{\sum_{h=1}^{k} T(s_h)}{k}\right) \qquad (3)$$

B. Notation of Proposed Method

Solar power industry investment problem can be formulated according to notation in Table 2 [20].

Table 2 Natation in proposed method

Set	Notation	Description
Decision Maker Set	D=$\{D_1, D_2, \ldots, D_k\}$	k means volume of decision makers
Enterprise Set	E=$\{E_1, E_2, \ldots, E_m\}$	m means volume of solar power enterprise
Criteria Set	C={ $C_1, C_2, \ldots, C_b, C_{b+1}, \ldots, C_d\}$	C_1 to C_b are quantitative criteria. C_{b+1} to C_d are qualitative criteria d means volume of criteria
Weight Criteria	W=$\{w_1, w_2, \ldots, w_d\}$	d means volume of criteria
Decision matrix X.	X = $\begin{array}{c} \\ I_1 \\ I_2 \\ \cdots \\ I_m \end{array} \begin{array}{cccccccc} C_1 & C_2 & \cdots & C_b & C_{b+1} & C_{b+2} & \cdots & C_d \\ x_{1,1} & x_{1,2} & \cdots & x_{1,b} & \tilde{x}_{1,b+1} & \tilde{x}_{1,b+2} & \cdots & \tilde{x}_{1,d} \\ x_{2,1} & x_{2,2} & \cdots & x_{2,b} & \tilde{x}_{2,b+1} & \tilde{x}_{2,b+2} & \cdots & \tilde{x}_{2,d} \\ \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots \\ x_{m,1} & x_{m,2} & \cdots & x_{m,1} & \tilde{x}_{m,b+1} & \tilde{x}_{m,b+2} & \cdots & \tilde{x}_{m,d} \end{array}$	

C. Execution Process of Proposed Method

In the Beginning, decision maker should decide solar power enterprise investment targets. Some high-quality solar power enterprises must be selected. Criteria must be arranged according to past literatures. After that, quantitative information of each solar power enterprise should be collected. Afterwards, decision maker must express their opinions about the performance of those solar power enterprise in qualitative criteria. Suppose that $\tilde{x}_{f,g,h}$ be decision maker h's opinion about the performance of solar power enterprise f respect to criterion g. Decision makers' opinion can be integrated by following equation:

$$\tilde{x}_{f,g} = T^{-1}\left(\frac{\sum_{h=1}^{k} T(\tilde{x}_{f,g,h})}{k}\right) \qquad (4)$$

And then, some financial information of those solar power enterprises should be collected. In order to compare fairly, information of each solar power enterprise need to be standardized. Standardization function can refer to below equation.

$$x^*_{f,g} = \begin{cases} \dfrac{\frac{x_{f,g}-min_\rho x_{\rho,g}}{max_\rho x_{\rho,g}-min_\rho x_{\rho,g}}+0.1}{\left(\sum_{\eta=1}^{m}\left(\frac{x_{\eta,g}-min_\rho x_{\rho,g}}{max_\rho x_{\rho,g}-min_\rho x_{\rho,g}}+0.1\right)^2\right)^{0.5}}, if\ criterion\ g\ is\ quantitative\ criterion \\ \dfrac{\Delta(\tilde{x}_{f,g})}{\left(\sum_{\eta=1}^{m}\left(\Delta(\tilde{x}_{\eta,g})\right)^2\right)^{0.5}}, if\ criterion\ g\ is\ qualitative\ criterion \end{cases} \quad (5)$$

Information of each solar power enterprise should be normalized for calculated entropy value by following equation [21]

$$p_{f,g} = \frac{x^*_{s,g}}{\sum_{s=1}^{m} x^*_{s,g}} \quad (6)$$

The entropy value of criterion g can be acquired by following equation [21]

$$e_g = \frac{-\sum_{f=1}^{m}\left(p_{f,g} ln(p_{f,g})\right)}{ln(m)} \quad (7)$$

The weight of criterion g can be defined by following equation [21]

$$w_g = \frac{1-e_g}{\sum_{j=1}^{d}(1-e_j)} \quad (8)$$

(a) Ratio system

Assessment value of each solar power enterprise defines as entire performance of benefit attribute subtracts total value of cost attribute in the ratio system. This index will respect overall worth of each solar power enterprise. The function of ratio system can be defined by following equation [22].

$$t^*_f = \sum_{C_g \in \Omega} w_g * x^*_{f,g} \quad (9)$$

where Ω means set which includes the entire benefit criteria.

E means set which includes the entire cost criteria.

The higher assessment value, the better solar power enterprise f.

(b) Reference point approach

This index calculates maximum relative distance to positive ideal solution respect to one criterion in reference point approach. The index will respect maximum regret degree for selecting this solar power enterprise. The function of reference point approach can be defined by following equation [22].

$$u^*_f = \begin{cases} max_g\left(\left|max_\lambda(x^*_{f,\lambda}) - x^*_{f,g}\right|\right) if\ C_g \in \Omega \\ max_g\left(\left|min_\lambda(x^*_{f,\lambda}) - x^*_{f,g}\right|\right) if\ C_g \in \varepsilon \end{cases} \quad (10)$$

The lower relative distance, the better solar power enterprise f.

(c) Full multiplicative form

This index calculates multiplicative value of each solar power enterprise in full multiplicative form. The index will respect entire status of this solar power enterprise because multiplicative value of solar power enterprise must be decreasing easily when performance of solar power enterprise respect to one criterion is relatively low. The function of full multiplicative form can be defined by following equation [22].

$$v^*_f = \frac{\prod_{C_g \in \Omega}\left(x^*_{f,g}\right)^{w_g}}{\prod_{C_g \in \varepsilon}\left(x^*_{f,g}\right)^{w_g}} \quad (11)$$

The higher multiplicative value, the better solar power enterprise f.

In this work, Borda count is applied to calculate the rank of each solar power enterprise. The function of Borda method can be defined by following equation [23].

$$r_f = rank_t(t^*_f) + rank_u(u^*_f) + rank_v(v^*_f) \quad (12)$$

where $rank_t(t^*_f)$ shows the rank of solar power enterprise f according to ratio system. $rank_u(u^*_f)$ shows the rank of solar power enterprise f according to reference point approach. $rank_v(v^*_f)$ shows the rank of solar power enterprise f according to full multiplicative form. Final rank of each solar power enterprise should be decided according to Borda count [23].

4 Case study

An organization decide to evaluate and choose one solar power enterprise to invest. In the beginning, this organization invites six experts to organize investment committee in order to evaluate performance of solar power enterprises for deciding investment target. Quantitative information comes from financial statements of solar power enterprises. Qualitative information should decide qualitative criteria first and experts' opinion will be collected according to qualitative criteria. After discussing, quantitative criteria and qualitative criteria for evaluating performance of solar power enterprise is described as Table 3 and Table 4.

Table 3 Quantitative Criteria for Evaluating Performance of Solar Power Enterprise

Criterion type	Criterion
Financial structure	Debt to asset ratio (%)
Solvency	Current ratio (%)
	Quick ratio (%)
Management ability	Total asset turnover
Profit ability	Return on assets (%)
	Return on equity (%)
	Earnings per share
Cash flow	Cash flow ratio (%)
	Cash reinvestment ratio (%)

Table 4 Qualitative Criteria for Evaluating Performance of Solar Power Enterprise

Criterion type	Criterion
Tangible Assets	Enterprise financial scale
	Human resource scale
Intangible Assets	Brand image
	Customer purchase intention
Government Support	Complexity degree of land acquisition
	Steadiness of government financial support
Other factors	Quality of solar power product
	Price of solar power product

Table 5 Quantitative Information of Solar Power Enterprise

Criterion type	Criterion	Enterprise					
		E_1	E_2	E_3	E_4	E_5	E_6
Financial structure	Debt to asset ratio(%)	85.13	55.55	52.70	67.67	42.80	51.51
Solvency	Current ratio (%)	113.18	182.91	158.20	165.09	174.38	171.57
	Quick ratio (%)	111.32	156.89	130.70	152.86	94.82	88.29
Management ability	Total asset turnover	0.13	0.61	0.70	0.42	0.41	0.96
Profit ability	Return on assets(%)	5.36	8.45	-4.70	-9.75	9.87	6.35
	Return on equity(%)	23.33	18.43	-10.70	-35.26	18.21	13.44
	Earnings per share	11.65	3.86	-2.00	-2.44	5.47	2.58
Cash flow	Cash flow ratio (%)	2.63	62.44	22.90	-18.54	-3.91	24.54
	Cash reinvestment ratio (%)	3.36	13.42	1.50	-6.11	-2.06	6.89

Step 3. Collect and arrange qualitative information

Nine scale linguistic variables are applied by six experts for expressing their opinions (Refer to table 6). Expert expresses their opinion about performance of solar power enterprise with respect to each criterion as shown in Table 7-12.

Table 6 Nine Scale Linguistic Variable

Notation	lv_0^9	lv_1^9	lv_2^9	lv_3^9	lv_4^9
Name	Extremely Poor	Very Poor	Poor	Medium Poor	Fair
Abbreviation	EP	VP	P	MP	F
Notation	lv_5^9	lv_6^9	lv_7^9	lv_8^9	
Name	Medium Good	Good	Very Good	Extremely Good	
Abbreviation	MG	G	VG	EG	

Table 7 Qualitative Information of Solar Power Enterprise for Expert 1

Criterion type	Criterion	Expert 1's opinion					
		E_1	E_2	E_3	E_4	E_5	E_6
Tangible Assets	Enterprise financial scale	EP	F	G	MP	MP	VG
	Human resource scale	VP	MG	MP	G	EG	MG
Intangible assets	Brand image	MP	EP	EG	F	VG	EG
	Customer purchase intention	EG	G	MP	G	VP	EG
Government Support	Complexity degree of land acquisition	EG	P	F	P	EP	MP
	Steadiness of government financial support	MP	EP	G	VP	MG	VG
Other factors	Quality of solar power product	P	G	G	VP	EP	F
	Price of solar power product	MP	EP	EP	VG	G	VP

Table 8 Qualitative Information of Solar Power Enterprise for Expert 2

Criterion type	Criterion	Expert 2's opinion					
		E_1	E_2	E_3	E_4	E_5	E_6
Tangible Assets	Enterprise financial scale	F	EP	MP	MG	MG	G
	Human resource scale	EG	MP	EG	G	F	G
Intangible assets	Brand image	MG	VP	VP	EG	EG	F
	Customer purchase intention	G	P	MG	MP	VG	MG
Government Support	Complexity degree of land acquisition	F	MG	VG	MP	MP	MG
	Steadiness of government financial support	VP	VG	F	MG	MP	G

Other factors	Quality of solar power product	MG	MP	MG	MG	MP	G
	Price of solar power product	MG	VG	VP	F	MG	G

Table 9 Qualitative Information of Solar Power Enterprise for Expert 3

Criterion type	Criterion	Expert 3's opinion					
		E_1	E_2	E_3	E_4	E_5	E_6
Tangible Assets	Enterprise financial scale	F	F	EG	EP	G	VG
	Human resource scale	VP	MG	F	G	P	VG
Intangible assets	Brand image	MP	MP	F	F	F	EG
	Customer purchase intention	EP	VP	G	VP	P	MG
Government Support	Complexity degree of land acquisition	F	P	VG	MP	P	MG
	Steadiness of government financial support	VP	VP	MP	MP	MP	MG
Other factors	Quality of solar power product	EG	MP	G	MP	EG	P
	Price of solar power product	MP	G	VG	EG	P	VG

Table 10 Qualitative Information of Solar Power Enterprise for Expert 4

Criterion type	Criterion	Expert 4's opinion					
		E_1	E_2	E_3	E_4	E_5	E_6
Tangible Assets	Enterprise financial scale	G	MP	VP	VG	F	MG
	Human resource scale	G	MP	MG	G	MG	VG
Intangible assets	Brand image	G	MG	MP	P	G	VG
	Customer purchase intention	F	P	MG	F	MP	MG
Government Support	Complexity degree of land acquisition	EG	VG	MP	EG	VP	F
	Steadiness of government financial support	MP	EP	VG	EP	P	VG
Other factors	Quality of solar power product	P	G	MP	EP	G	MG
	Price of solar power product	VP	MP	VP	VG	MG	G

Table 11 Qualitative Information of Solar Power Enterprise for Expert 5

Criterion type	Criterion	Expert 5's opinion					
		E_1	E_2	E_3	E_4	E_5	E_6
Tangible Assets	Enterprise financial scale	F	EG	G	P	VG	VG
	Human resource scale	MP	VP	VP	EG	P	MG
Intangible assets	Brand image	G	VP	VP	P	MG	MG
	Customer purchase intention	F	G	MP	VG	EG	G
Government Support	Complexity degree of land acquisition	EG	F	MG	VG	VG	VG
	Steadiness of government financial support	VG	MG	F	VG	MP	G
Other factors	Quality of solar power product	VP	P	MP	MP	VP	F
	Price of solar power product	MP	P	P	MP	G	EG

Table 12 Qualitative Information of Solar Power Enterprise for Expert 6

Criterion type	Criterion	Expert 6's opinion					
		E_1	E_2	E_3	E_4	E_5	E_6
Tangible Assets	Enterprise financial scale	MP	VP	P	P	VP	MG
	Human resource scale	VG	VP	MP	G	MP	MG
Intangible assets	Brand image	F	EP	VP	P	F	MG
	Customer purchase intention	VP	MP	VG	MG	VP	F
Government Support	Complexity degree of land acquisition	EG	P	VG	P	EG	VP
	Steadiness of government financial support	EG	MP	MG	P	MG	G
Other factors	Quality of solar power product	F	P	MP	F	G	F
	Price of solar power product	MP	P	F	EP	VP	G

Step 5. Calculate weight of each criterion
Equation 6, 7 and 8 are used to calculate weight of each criterion.
Step 6. Calculate assessment value, relative distance and multiplicative value.

Three kinds of analysis indices are employed to analyze performance of each solar power enterprise in MULTIMOORA method. Relative equation can refer to equation 9, 10 and 11 (Experiment result can refer to Table 13).

Table 13 Experiment Result

	E_1	E_2	E_3	E_4	E_5	E_6
Assessment value	6.3350	5.0681	3.9806	4.1854	4.2514	5.7952
Rank based on assessment value	1	3	6	4	5	2
relative distance	0.66654	0.64402	0.58403	0.61392	0.59079	0.68874
Rank based on relative distance	2	3	4	6	5	1
multiplicative value	251922*10^(-9)	117807*10^(-9)	76168*10^(-9)	91147*10^(-9)	83361*10^(-9)	338132*10^(-9)
Rank based on multiplicative value	2	3	6	4	5	1
Sum of Rank	5	9	16	14	10	4
Rank based on Borda	2	3	6	5	4	1

Step 7. Rank Alternative

At last, this research applies Borda method to acquire overall performance of each solar power enterprise. Based on analysis result, the rank of each solar power enterprise is $E_6 > E_1 > E_2 > E_5 > E_4 > E_3$. Enterprise E_6 is the best investment target in Taiwan solar power industry.

5 Conclusion and Future Research

This study designs a framework to evaluate performance of solar power enterprise in Taiwan. It exists some advantage of applying proposed method to evaluate solar power enterprise.

(1) Extendable and Flexible

MULTIMOORA is an extendable mechanism, there are some sub decision-making method in MULTIMOORA. MULTIMOORA will integrate those sub decision-making methods to evaluate performance of each solar power enterprise. The sub decision-making method can be extended and some sub decision-making method in MULTIMOORA also can be replaced by other multi criterion making method according to practical evaluation demand in solar power industry.

(2) Comprehensiveness

In proposed method, it can handle qualitative information and quantitative information simultaneously. Compare with traditional multi criteria decision making method, proposed method is relatively suitable to handle solar power industry investment problem because quantitative information usually represents instant performance of solar power enterprises and qualitative information usually represents future performance and develop potential of solar power enterprises. So, proposed method considers solar power enterprise evaluation problem relatively comprehensive.

(3) Low Expert Application Time

In proposed method, quantitative information can collect from Taiwan open information observatory station. Experts only need to evaluate performance of each solar power enterprise respect to qualitative criteria (The criteria weight evaluation process can be automatically generated by entropy method). Because experts' work time is expensive, proposed method can reduce a huge amount of expert evaluation time.

In the future, relative scholar can execute below extension research.

(1) Integrate with machine learning technology

In this research, quantitative information of each solar power enterprise is collected according to current finance and business status of solar power enterprises. However, future finance and business status of solar power enterprises is more important information to evaluate performance of solar power enterprises. So, this research suggests that machine learning technology such as time serious analysis can be applied to forecast, future finance and business status of solar power enterprises which can be considered as qualitative information of solar power enterprises. Proposed method can integrate with machine learning technology to modify quality of decision making.

(2) Extend to portfolio investment field

Developing solar power industry in Taiwan relies on government support because electric generating cost of solar power is higher than other method such as Nuclear power generation, thermal power generation etc.

Under this condition, it is high risk business activity for investing in solar power enterprise. Government support for solar power industry is uncertainty and the support maybe will change in the future. Future scholar can research how to put solar power enterprise into the investment portfolio.

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Conflicts of Interest: Authors declare that no conflict of interest for publishing in this journal.

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