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An Exploration of Sustainable Customer Value and the Procedure of the Intelligent Digital Content Analysis Platform for Big Data Using Dynamic Decision Making

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Abstract

The dynamic Parasuraman, Zeithaml and Berry (PZB) service quality model is applied in the analysis of different customer clusters of sustainable customer value, while considering enterprise sustainability, customer relationship management (CRM), and customer equity of customer satisfaction and customer value. Based on intelligent digital content analysis and the recommendation platform of the different customer clusters of sustainable customer value, the dynamic six-sigma method is applied to the leisure agriculture of sustainable key resources and procedures solutions, as well as the impact of environmental and social costs and benefits. Based on the leisure agriculture of sustainable key resources and procedures solutions, the sustainable contradictions of leisure ecotourism agriculture are considered using dynamic multi-criteria decision making (dynamic gray multi-attribute decision making and dynamic multi-objective planning) to analyze the optimal plan for balancing the leisure agriculture of ecotourism and sustainable contradictions. First, sustainable and local identification plans are developed by the dynamic grey multi-attribute decision making method. Next, dynamic multi-objective planning is developed, as based on the priority factors sorted by gray multi-attribute decision making, in order to carry out the decision-making analysis of different objectives under different situations; thereby, helping the development of featured sustainable customer value of local leisure agriculture.

Keywords: Intelligent digital content analysis and recommendation platform, Dynamic decision making, Sustainable customer value, Local leisure agriculture

Contents

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1. Introduction

The value proposition (Schaltegger *et al.*, 2012) which refers to the value transmitted to customers through the work flow of different industries providing products or services, must be distinguished from competitors. The value proposition is the dialogue between providers and receivers, which includes the value provided by products, as well as balancing social, environmental, and economic needs (Boons and Lüdeke-Freund, 2013). The value proposition can drive the buying motive (Jam and Jam, 2011) and highlighting the value proposition is a sort of market strategy, where the work flow and ability to provide must be considered. Tangible and intangible ecological, social, and economic values are highlighted and measured by the value proposition (Hlava and Camlek, 2010; Boons and Lüdeke-Freund, 2013). The value proposition of sustainable enterprises must mediate public and personal interests in order to avoid conflicts. The important concept of sharing value creation is to respect the customers' needs, rights, and interests, to increase product and service values through a management model, and to create value for customers, enterprises, societies, or environments (Chiang, 2010; Yen *et al.*, 2011; Liu *et al.*, 2012; Yu *et al.*, 2012; Chiu and Lin, 2013; Yen and Chen, 2013; Lee *et al.*, 2014).

As Taiwan will be confronted with contradictory decisions regarding economic growth and environmental protection in the key processes of technology development and innovative design, this study constructs a dynamic decision model for building an environment with sustainable development, which considers sustainable and locally identified Pingtung leisure agricultural ecology. The new market management model, which competitors cannot imitate, is integrated with the perpetual customer value perspective (CVP) in order to develop a sustainable optimization scheme of dynamic decisions for success, where sustainable key resources and sustainable key work flows are analyzed by dynamic six-sigma to create an innovative dynamic process for analyzing business models. This study uses the dynamic PZB service quality model to analyze the sustainable customer values of different customer groups, including customer clustering according to tourism motives and the favorite leisure agriculture type of customer groups, and considers enterprise sustainability, CRM, customer equity of customer satisfaction, and customer value. The sustainable key resources and sustainable key work flow of leisure agriculture will be analyzed by the dynamic six-sigma method, as based on sustainable customer values of different customer groups, in order to select the leisure farm scheme, which includes the four major systematic leisure agriculture schemes in Pingtung District, according to the leisure agricultural resources classification scheme and knowledge scheme with local culture characteristics, and the effects on environmental and social costs and interests are analyzed. Finally, the sustainable contradiction content of leisure agricultural ecological tourism is considered based on sustainable key resources and sustainable key work flow of leisure agriculture, where the optimal schema of leisure agricultural ecological tourism and sustainable contradiction are analyzed by dynamic multi-criteria decision making (dynamic gray multi-attribute decision making and dynamic multi-objective planning), which consider the sustainable contradiction content of leisure agricultural ecological tourism. The sustainable and local identification optimal service plans are developed using dynamic gray multi-attribute decision making; dynamic multi-objective planning is developed using the priority factors sorted by dynamic gray multi-attribute decision making; the decision analysis of different objectives is implemented in different situations; and the leisure agriculture strategy is analyzed according to the dynamic view, in order to provide local leisure agriculture providers with decision references, as described in Figure 1 (Johnson, 2010; Asif *et al.*, 2011; Gimenez *et al.*, 2012; Liu and Kuo, 2012; Robinson and Boulle, 2012; Cheshmehgaz *et al.*, 2013; Rahardjo *et al.*, 2013; Chang, 2013a; 2013b; Ji *et al.*, 2014; Oztaysi, 2014; Steyn and Niemann, 2014; Thai *et al.*, 2014; Wolf, 2014).

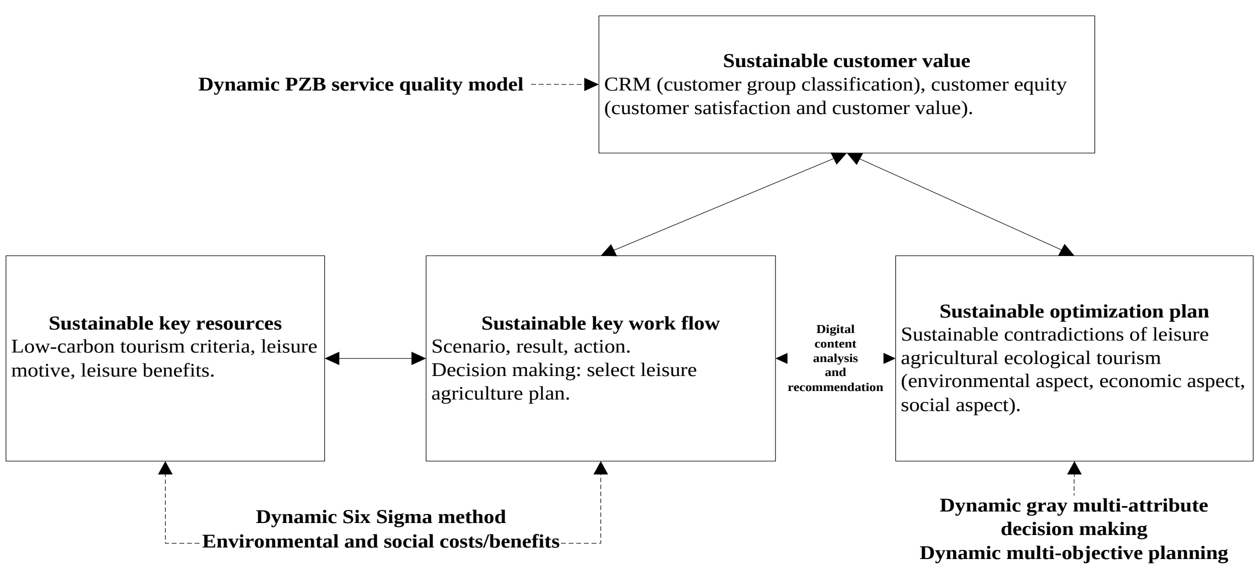

Figure-1. This research structure

Source: (Wang *et al.*, 2011; Cheng *et al.*, 2012)

2. Research Method

This project uses the dynamic PZB service quality gap model to analyze the sustainable customer value of different customer groups, including customer clustering according to the tourism motive and favorite leisure agriculture type of customer groups, considers enterprise sustainability, CRM, and customer equity of customer satisfaction and customer value, CRM and customer equity, and the developing leisure agriculture, such as a flourishing enterprise. This study uses the dynamic PZB service quality model to analyze sustainable CVP, including tourism planning goods or leisure combinations, which can assist customers to attain their goals in an environmental, reliable, rapid, and economical manner. In addition, it describes how leisure agriculture uses specific resources to create sustainable value for different customer groups (Carrasco *et al.*, 2012; Chen and Mo, 2012; Kuo and Chou, 2012; Lin and Lin, 2012; Liou *et al.*, 2012; Lo *et al.*, 2013; Shih and Yang, 2013; Su *et al.*, 2013).

Afterwards, based on the sustainable customer value of different customer groups, the sustainable key resources and sustainable key work flows of leisure agriculture are analyzed using the dynamic six-sigma method in order to select leisure agriculture plans, including four major systematic leisure agriculture plans in Pingtung District, a knowledge plan with local culture characteristics according to the leisure agricultural resources classification plan, and their effects on environmental and social costs and benefits are analyzed. The sustainable key resources and sustainable key work flows are analyzed by the dynamic six-sigma method, which emphasizes that, at the dynamic six-sigma quality level, customer requirements set specific specification limits and the key index for measuring project performance. While the processes of leisure agriculture are fixed, customer requirements and markets are dynamic and uncertain, which is a condition that degrades service quality level. The dynamic six-sigma method does end when a project is completed, but continuously makes goods and services meet the leisure agriculture service flow of sustainable customer value. Leisure agriculture provides value for customers and itself through key assets, technologies, activities, routine business practices, and repeated use and dynamic adjustments of leisure agriculture, in order to satisfy the work flow of sustainable CVP, thus, becoming the competitive advantage of leisure agriculture to fulfill the customer's actual key job to be completed. The key management model tells a story, including origin, story line, participant motive, special transition, windfall, and subsequent extension. All new stories are derived from local historical allusions, and the differences and attractions, as found by human resources of leisure agriculture and fisheries, are used as important resources, which are integrated into moving and exciting stories in order that different customer groups are moved by emotional marketing and experiential marketing (Magretta, 2002; Magretta and Stone, 2002). These resources are integrated through the reliable, rapid, and economical method of Johnson (2010) to complete the business personally conducted by customers, attract customers to leisure agriculture in order to experience particular environments different from hotels or home stay facilities, and continuously and steadily provide profit, to guarantee the optimum and sustainable operating conditions of leisure agriculture (Wang *et al.*, 2011; Wu, 2011; Cheng *et al.*, 2012; Cheng, 2012a; Cheng, 2012b; Lin and Tsui, 2013).

2.1. Intelligent Digital Content Analysis and Recommendation Platform for Big Data

With the coming of the digital age, the digital content possessed by various blog websites is duplicated, and how website operators provide intelligent and customized help for busy modern people to find the desired articles out of numerous blog articles becomes an important subject. This paper proposes a complete personal digital content recommendation technology architecture, as based on content correlation analysis, with three user quantitative indices, which are preference, community closeness, and article freshness, in order that the digital content service platform can improve the users' digital reading experience. The overall recommendation architecture is as shown in Figure 2 which shows the basic structure of personal digital content recommendations of a travel blog website. The "digital content database" is the data of blog articles in the backend of blog websites, the "user behavior record" is the browsing history of the user on the blog website, and the "intelligent analysis and recommendation platform" comprises the following modules (Cheng and Wu, 2013; Lim and Zhu, 2016):

(1) "Content correlation analysis module": to analyze the correlation of data in the "digital content database" of a blog website.

(2) "User preference analysis module": to analyze user's preference according to the "user behavior record" of a blog website.

(3) "Community closeness analysis module": to analyze the community closeness between users according to the "user behavior record" of a blog website.

(4) "Article freshness analysis module": to analyze the freshness of each article according to the article publication time and the number of clicks from the "digital content database" of a blog website.

(5) DEA calculated overall performance: the overall performance of three analysis modules is calculated by DEA.

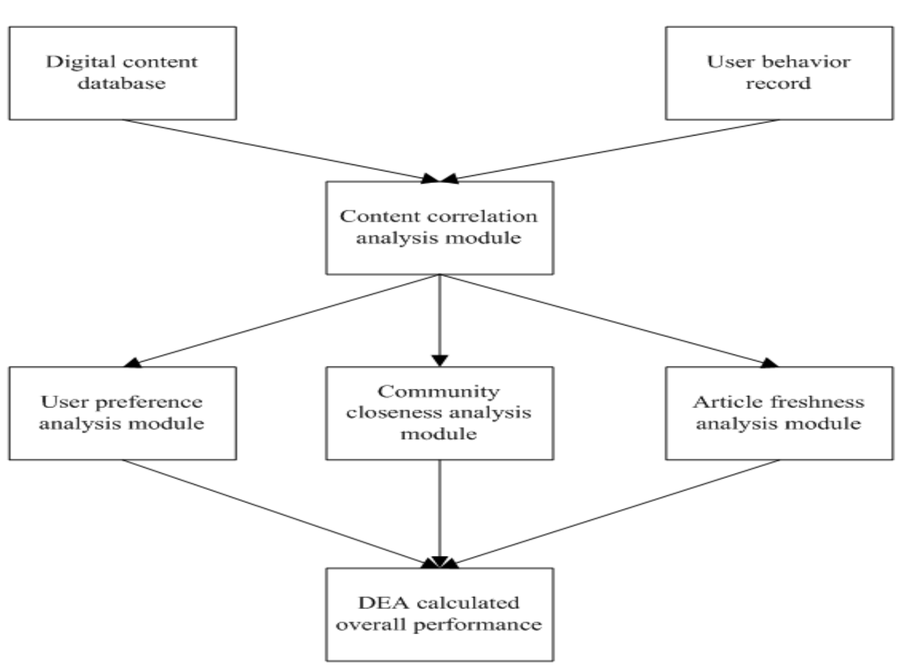

Figure-2. Intelligent digital content analysis and recommendation platform for big data
Source: (Manzardo *et al.*, 2012; Lee *et al.*, 2014)

The personal digital content recommendation technology platform, as proposed in this paper, can generate the analytical data of a multi-user quantitative index, in order that the blog website can create an intelligent personalized recommendation service centered on users. This service not only approaches the user's personalized requirements, but also helps the website increase the user's stay time and visiting frequency to the blog website.

Finally, a leisure agriculture plan is selected according to the sustainable key resources and sustainable key work flow, where the sustainable contradiction content of leisure agricultural ecological tourism is considered, the sustainable optimization plan is analyzed by multi-criteria decision making, and the sustainable and local identification optimal service plan is developed, in order to assist Pingtung District to develop local leisure agriculture. Leisure agriculture and type of operation with sustainable customer value are analyzed by multi-criteria decision making (gray multi-attribute decision making and multi-objective planning). This study uses gray multi-attribute decision making to select the optimal implementation plan, and then uses the priority factors, as sorted by the optimal implementation plan, to analyze the most important profit objectives of multi-objective planning according to different situations: the revenue model, cost structure, target unit profit, and developing the constraints (Hsu, 2011; Tai *et al.*, 2011; Wei, 2011a; Wei, 2011b; Golmohammadi and Mellat-Parast, 2012; Luo and Wang, 2012; Manzardo *et al.*, 2012; Zhu and Hipel, 2012; Zhang *et al.*, 2013; Wang *et al.*, 2013a; Chang, 2013a; 2013b; Wang *et al.*, 2013b; Oztaysi, 2014). Leisure agriculture is usually commerce and interest oriented, where the cultural aspect of sustainable operation takes cultural protection and popularization as the main implementation objectives; therefore, there are constant conflicts, meaning it is urgent to integrate the leisure agriculture of sustainable customer value with culture. It involves the actual application of culture and natural resources, ethics of the tourism industry, local capacity construction, and exact maintenance of community spirit. Only a combination of the leisure agriculture of sustainable customer value and culture can guarantee effective implementation of policies, where culture shall be redefined as the key to a developmental strategy, in order to merge justice and respect into local society and maintain cultural diversity and locality. Therefore, sustainable leisure agriculture requires a holistic method to promote high cooperation, coordination, and integration of all participants at various levels. In many ways, sustainable leisure agriculture is the competition for and allocation of limited resources, thus, it requires a political solution to break the balance point between tourism and existing and future processes. Just as some professionals' query the feasibility of sustainable development, there are three views on the practical application of sustainable development to leisure agriculture, including completely believing that sustainable development is applicable to leisure agriculture, believing that sustainable leisure agriculture with environmental, social, and economic objectives can be jointly executed; secondly, specific thoughts denying the common development of sightseeing and social environments, where the former is perfect. Finally, facing existing challenges, the negative significant impact of sightseeing development is accepted, determines the full necessity of sustainable development, and is devoted to an overall integrated coordination strategy of sightseeing development and environmental protection (Hsu, 2011; Tai *et al.*, 2011; Wei, 2011a; Wei, 2011b; Golmohammadi and Mellat-Parast, 2012; Luo and Wang, 2012; Manzardo *et al.*, 2012; Zhu and Hipel, 2012; Zhang *et al.*, 2013; Wang *et al.*, 2013a; Chang, 2013a; 2013b; Wang *et al.*, 2013b; Oztaysi, 2014).

2.2. Loss Function

The end product of decision making under risk is determined by the adopted plan and the state of uncertain factors. Therefore, before uncertain factors are determined, the expected loss or revenue is estimated only according to probability. In Bayesian decision analysis, each combination of a plan and a natural state (g_i, θ_j) has a corresponding reward or loss, called the loss function. The loss function $L(g_i, \theta_j)$ represents the loss in actual state θ_j after action g_i is taken according to the decision making rule $\delta(x) = g_i$ when the decision maker observes sample X. The probability $\pi(\theta_j)$ corresponding to each state θ_j is the weighted average of weights, where the expected loss of plan g_i is expressed as Eq. (1) (Chien, 2007; Alessi and Detken, 2014; Zinodiny *et al.*, 2014).

$$EL(g_i) = \sum_{\Omega} L(g_i, \theta_j) \cdot \pi(\theta_j), \theta_j \in \Omega \qquad (1)$$

Whether or not to adopt plan is determined according to decision rule, where the sample value meeting condition must be observed before plan is implemented. Therefore, the actual loss function of plan and state is, where all meeting the decision rule and the probability of being from state shall be considered, thus, can be changed to the function of, as expressed by Eq. (2).

$$L(g_i, \theta_j) = \sum_{x} L\left[\delta(x) = g_i, \theta_j\right] \cdot P_{\theta_j}(x), \forall x \in \{x | \delta(x) = g_i\} \qquad (2)$$

Where $P_{\theta_j}(x)$ is the likelihood function of X under $\theta = \theta_j$, the decision rule $\delta(x) = g_i$ is given, and Eq. (1) is substituted in Eq. (2) to obtain the expected loss of plan g_i, as expressed by Eq. (3).

$$EL(g_i) = \sum_{\Omega} \pi(\theta_j) \cdot \left[\sum_{x} L\left[\delta(x) = g_i, \theta_j\right] \cdot P_{\theta_j}(x) \right] \qquad (3)$$

When natural function θ_j and sample X are continuous values, the expected loss is deduced integrally, as expressed by Eq. (4).

$$EL(g_i) = \int_{\Omega} \pi(\theta) \cdot \int_{X} L\left[\delta(x) = g_i, \theta\right] \cdot P_{\theta}(x) \cdot dx \cdot d\theta \qquad (4)$$

The decision maker can determine the expected loss of each plan according to Eq. (3) or (4), and the minimum expected loss is the optimal plan.

2.3. Dynamic Multi-Objective Planning

The multi-objective planning vector optimization, i.e. $\max Z=\left(Z_1, Z_2, \ldots, Z_P\right)$, is usually a set of points instead of a single point, as expressed by Eq. (5). Therefore, the general multi-objective planning normal formula is n variables, m constraints, and P objectives (Wang, 2005; Tzeng *et al.*, 2007; Arturo *et al.*, 2010; Tsai *et al.*, 2010; Cheshmehgaz *et al.*, 2013).

$$\max Z\left(X_1, X_2, \ldots, X_n\right)=\left[Z_1\left(X_1, X_2, \ldots, X_n\right), Z_2\left(X_1, X_2, \ldots, X_n\right), \ldots, Z_P\left(X_1, X_2, \ldots, X_n\right)\right] \quad (5)$$

$$s.t. \sum_{j=1}^{n} a_{ij} X_j \geq b_i, i=1,2,\ldots,m$$

$$X_j \geq 0, \qquad j=1,2,\ldots,n$$

Where $Z\left(X_1, X_2, \ldots, X_n\right)$ is the objective function, and $Z_1, Z_2, \ldots, Z_P$ are P single objective functions. One or multiple solutions are calculated under $\max Z$ optimal vector.

Dynamic multi-objective planning can select different multi-objective planning decision-making styles according to the environment and the decision maker's preference of dynamic conditions. The real non-inferior solution set to be deduced by multi-objective planning without preference has infinite solutions, and the solutions will not end in practice. Therefore, the analyzer uses parametric programming to estimate several representative non-inferior solutions, and uses these non-inferior solutions as alternative schemes of decisions, in order to provide the decision maker with related suggestions. In terms of multi-objective planning with preference, when the decision maker's preference is known beforehand, the solving process is simpler than multi-objective planning without a preference; however, as the decision maker's preference shall be obtained in advance, its use is limited, and because it is difficult to obtain a decision making preference, the range of application is greatly reduced. When interactive multi-objective planning is used, the decision maker must be aware of reducing some target values in exchange for another target value in order to reach the optimal solution, thus, as the objective function of the interactive Tchebycheff method is not limited to linear functions, it can be applied to nonlinear integer programming (Wang, 2005; Tzeng *et al.*, 2007; Arturo *et al.*, 2010; Tsai *et al.*, 2010; Cheshmehgaz *et al.*, 2013).

According to the E_k analysis of DEA, the MaxZ analysis of $EL(g_i)$, and the multi-objective before and after the introduction of this method in Figure 3 there is apparent improvement after the introduction of this method.

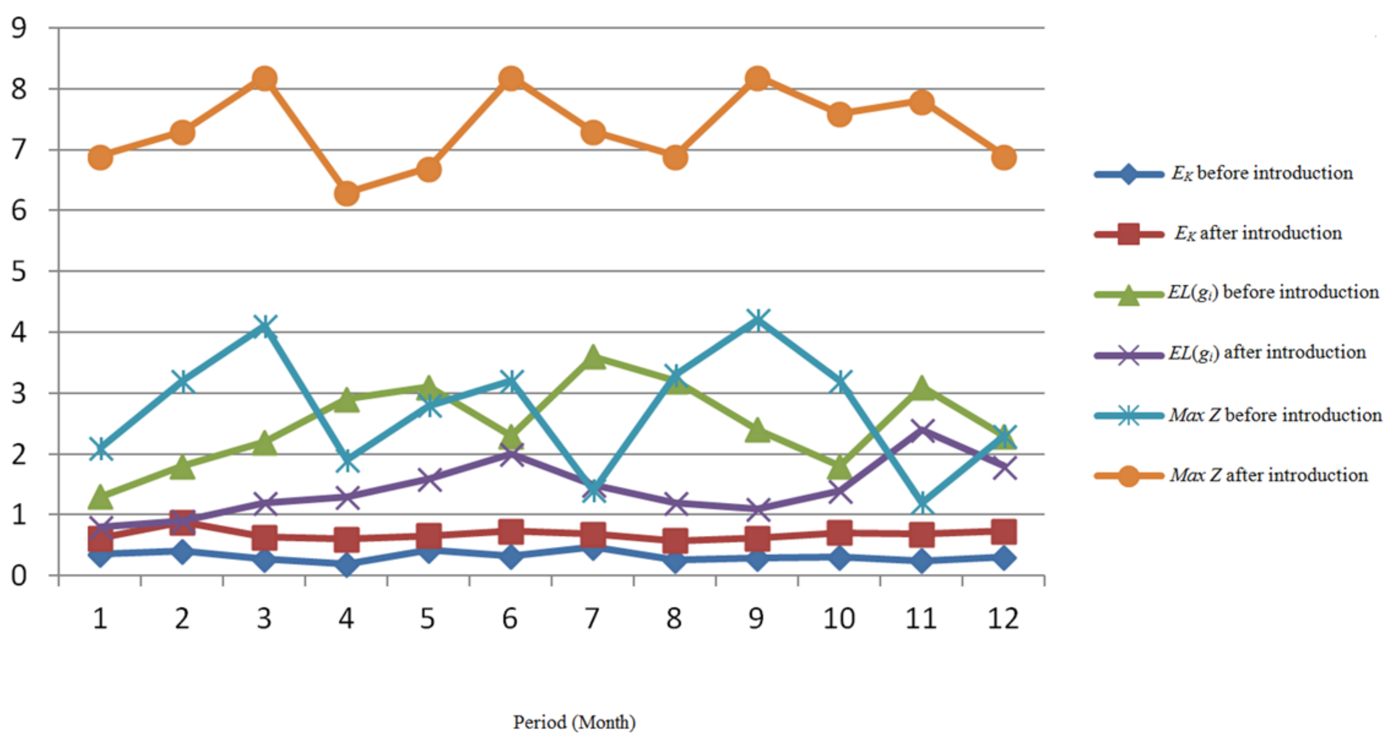

Figure-3. Before and after introduction of this method

Source: This study

3. Conclusion and Future Studies

This study develops dynamic multi-objective planning and digital content recommendation and analysis, and implements decision analysis for leisure agriculture according to different scenarios, in order to assist leisure agriculture to develop local leisure agriculture with sustainable customer value. It is intended that this method can be used in different types of sustainable development plans for the service industry.

References

Alessi, L. and C. Detken, 2014. On policymakers loss functions and the evaluation of early warning systems: Comment. Economics Letters, 124(3): 338-340.

Arturo, A.R., A. Graham and G. Stuart, 2010. Multi-objective planning of distributed energy resources: A review of the state of the art. Renewable and Sustainable Energy Reviews, 14(5): 1353-1366.

Asif, M., C. Searcy, A. Zutshi and N. Ahmad, 2011. An integrated management systems approach to corporate sustainability. European

Business Review, 23(4): 353-367.
Boons, F. and F. Lüdeke-Freund, 2013. Business models for sustainable innovation: State-of-the-art and steps towards a research agenda. Journal of Cleaner Production, 45: 9-19.
Carrasco, R.A., F. Muñoz-Leiva, J. Sánchez-Fernández and F.J. Liébana-Cabanillas, 2012. A model for the integration of e-financial services questionnaires with Servqual scales under fuzzy linguistic modeling. Expert Systems with Applications, 39(14): 11535-11547.
Chang, C.Y., 2013a. A study of the relationships among recreation motivation, leisure benefit and satisfaction in leisure farm. Journal of Tourism and Travel Research, 8(2): 1-18.
Chang, H.C., 2013b. Experiential economy, leisure education, and marketing management of leisure farms in Taiwan. Journal of Leisure and Recreation Industry Management, 6(1): 71-102.
Chen, Y.F. and H. Mo, 2012. Attendees perspectives on the service quality of an exhibition organizer: A case study of a tourism exhibition. Tourism Management Perspectives, 1(1): 28-33.
Cheng, C.S., S.C. Lee, P.W. Chen and K.K. Huang, 2012. The application of design for six sigma on high level smart phone development. Journal of Quality, 19(2): 117-136.
Cheng, J.L., 2012a. The structured review of six sigma and implications for future research. Journal of Innovation Research & Development, 8(2): 97-109.
Cheng, J.L., 2012b. Explore study the integrating DMAIC with risk management to the strategy development of Taiwan automobile industry over ECFA contract. Journal of Crisis Management, 9(1): 15-26.
Cheng, K.T. and S.Y. Wu, 2013. A recommendation technique of combining multi-user based quantitative indicators for digital content. ICL Technical Journal, 153: 105-112.
Cheshmehgaz, H.R., M.I. Desa and A. Wibowo, 2013. An effective model of multiple multi-objective evolutionary algorithms with the assistance of regional multi-objective evolutionary algorithms: VIPMOEAs. Applied Soft Computing, 13(5): 2863-2895.
Chiang, C.Y., 2010. Exploring innovative strategy of ocean culinary tourism development from customer value perspective. Journal of Island Tourism Research, 3(1): 114-124.
Chien, C.F., 2007. Decision analysis and management: A unison framework for total decision quality enhancement. Taipei: Yeh Yeh Book Gallery.
Chiu, Y.P. and M.C. Lin, 2013. The effect of consumer attributes and website features on customer value: An empirical study of online shopping. Chung Yuan Management Review, 11(1): 1-26.
Gimenez, C., V. Sierra and J. Rodon, 2012. Sustainable operations: Their impact on the triple bottom line. International Journal of Production Economics, 140(1): 149-159.
Golmohammadi, D. and M. Mellat-Parast, 2012. Developing a grey-based decision-making model for supplier selection. International Journal of Production Economics, 137(2): 191-200.
Hlava, M.M.K. and V. Camlek, 2010. How to spot a real value proposition. Information Services & Use, 30(3/4): 119-123.
Hsu, K.T., 2011. Using a back propagation network combined with grey clustering to forecast policyholder decision to purchase investment-inked insurance. Expert Systems with Applications, 38(6): 6736-6747.
Jam, S.K. and M. Jam, 2011. Exploring impact of consumer and product characteristics on e-commerce adoption: A study of consumers in India. Journal of Technology Management for Growing Economies, 2(2): 35-64.
Ji, G., A. Gunasekaran and G. Yang, 2014. Constructing sustainable supply chain under double environmental medium regulations. International Journal of Production Economics, 47(B): 211-219.
Johnson, M.W., 2010. Seizing the white space: Business model innovation for growth and renewal. MA: Harvard Business Press Books.
Kuo, Y.C. and J.S. Chou, 2012. Enhancement of condominium management based on the effect of quality attributes on satisfaction improvement. Expert Systems with Applications, 39(5): 5418- 5425.
Lee, S.H., C.Y. Lin, C.D. Wu and Y.C. Chuang, 2014. Spatial patterns for sustainable rural landscape by biotope evaluation. Journal of City and Planning, 41(1): 67-97.
Lim, S. and J. Zhu, 2016. A note on two-stage network DEA model: Frontier projection and duality. European Journal of Operational Research, 248(1): 342-346.
Lin, J.F. and F.U. Lin, 2012. The study of leisure farm competitiveness in Yilan area under the creative life industries. Sun Yat-Sen Management Review, 20(4): 1143-1176.
Lin, Y.I. and K.Y. Tsui, 2013. To improve the efficiency of design and development process by means of design for six sigma-A case study of Roc-Keeper Industrial Ltd. Quality Magazine, 49(1): 33-36.
Liou, J.J.H., G.H. Tzeng, C.C. Hsu and W.C. Yeh, 2012. Reply to comment on using a modified grey relation method for improving airline service quality. Tourism Management, 33(3): 719-720.
Liu, C.R., W.R. Lin and J.H. Lin, 2012. The relationships among recreation farming image, brand personality and travelers intention: The test of mediating effect of self-congruity. Journal of Outdoor Recreation Study, 25(3): 59-81.
Liu, T.L. and C.C. Kuo, 2012. A study of customer value construct of service industry. Journal of Business Administration, 92: 39-62.
Lo, F.E., T.H. Lin, K.L. Ma and H.U. Hsia, 2013. The effects of leisure motivations and constrains toward participating experience activities in leisure farms. Bio-Industry Technology Management Review, 4(1): 1-20.
Luo, D. and X. Wang, 2012. The multi-attribute grey target decision method for attribute value within three-parameter interval grey number. Applied Mathematical Modelling, 36(5): 1957-1963.
Magretta, J., 2002. Why business models matter. Harvard Business Review, 80(5): 86-92.
Magretta, J. and N.D. Stone, 2002. What management is: How it works and why it’s everyone’s business. New York: Simon & Schuster.
Manzardo, A., J. Ren, A. Mazzi and A. Scipioni, 2012. A grey-based group decision-making methodology for the selection of hydrogen technologies in life cycle sustainability perspective. International Journal of Hydrogen Energy, 37(23): 17663-17670.
Oztaysi, B., 2014. A decision model for information technology selection using AHP integrated TOPSIS-Grey: The case of content management systems. Knowledge-Based Systems, 70: 44-54.
Rahardjo, H., M.S. Idrus, D. Hadiwidjojo and S. Aisjah, 2013. Factors that determines the success of corporate sustainability management. Journal of Management Research, 5(2): 1-16.
Robinson, D. and M. Boulle, 2012. Overcoming organizational impediments to strong sustainability management. Business Review, Cambridge, 20(1): 42-48.
Schaltegger, S., F. Lüdeke-Freund and E.G. Hansen, 2012. Business cases for sustainability: The role of business model innovation for corporate sustainability. International Journal of Innovation and Sustainable Development, 6(2): 95-119.
Shih, T.Y. and Y.H. Yang, 2013. The determinate effects of customer values on brand trust toward online stores–comparative analysis by conformity attributes. Marketing Review, 10(2): 165-190.
Steyn, B. and L. Niemann, 2014. Strategic role of public relations in enterprise strategy, governance and sustainability-a normative framework. Public Relations Review, 40(2): 171-183.
Su, C., J.Y.C. Liu and H. Liu, 2013. A customer value based framework for database marketing. Journal of Information Management, 20(3): 341-366.
Tai, Y.Y., J.Y. Lin, M.S. Chen and M.C. Lin, 2011. A grey decision and prediction model for investment in the core competitiveness of product development. Technological Forecasting and Social Change, 78(7): 1254-1267.
Thai, V.V., W.J. Tay, R. Tan and A. Lai, 2014. Defining service quality in tramp shipping: Conceptual model and empirical evidence. Asian Journal of Shipping and Logistics, 30(1): 1-29.
Tsai, S.J., T.Y. Sun, C.C. Liu, S.T. Hsieh, W.C. Wu and S.Y. Chiu, 2010. An improved multi-objective particle swarm optimizer for multi-objective problems. Expert Systems with Applications, 37(8): 5872-5886.
Tzeng, G.H., H.J. Cheng and T.D. Huang, 2007. Multi-objective optimal planning for designing relief delivery systems. Transportation Research Part E, 43(6): 673-686.
Wang, H.F., 2005. Multicriteria decision analysis – from certainty to uncertainty. Taichung: Tsang Hai Publishing.

Wang, H.L., H.F. Jao, J.K. Hsiao, W.J. Feng, J.G. Chang and C.H. Chiang, 2011. Improvement of specimen examination efficiency for inpatients at night by six sigma management-a case study of one medical center. Journal of Quality, 18(3): 245-258.

Wang, J.Q., H.Y. Zhang and S.C. Ren, 2013a. Grey stochastic multi-criteria decision-making approach based on expected probability degree. Scientia Iranica, 20(3): 873-878.

Wang, P., P. Meng, J.Y. Zhai and Z.Q. Zhu, 2013b. A hybrid method using experiment design and grey relational analysis for multiple criteria decision making problems. Knowledge-Based Systems, 53: 100-107.

Wei, G.W., 2011a. Grey relational analysis model for dynamic hybrid multiple attribute decision making. Knowledge-Based Systems, 24(5): 672-679.

Wei, G.W., 2011b. Grey relational analysis method for 2-tuple linguistic multiple attribute group decision making with incomplete weight information. Expert Systems with Applications, 38(5): 4824-4828.

Wolf, J., 2014. The relationship between sustainable supply chain management, stakeholder pressure and corporate sustainability performance. Journal of Business Ethics, 119(3): 317-328.

Wu, C.F., 2011. Applying six sigma to service industries-the example of restaurant service. Quality Magazine, 47(6): 23-27.

Yen, K.C., W.T. Fang, H.N. Hsieh, Y.Y. Wang and T.J. Chu, 2011. A study on overall planning of Hsinchu county's sustainable coast. Journal of Architecture, 76: 1-21.

Yen, T.F. and C.C. Chen, 2013. Effects of subjective norm on commitment-behavioral intentions relationship for tourist at leisure farms. Journal of Management Practices and Principles, 7(1): 27-39.

Yu, W.H., Y.S. Peng and Y.H. Lin, 2012. What is the role of the Taiwan leisure farms development association in the development process of Taiwanese leisure agriculture? The perspective of structural hole theory. Journal of Outdoor Recreation Study, 25(2): 25-74.

Zhang, X., F. Jin and P. Liu, 2013. A grey relational projection method for multi-attribute decision making based on intuitionistic trapezoidal fuzzy number. Applied Mathematical Modelling, 37(5): 3467-3477.

Zhu, J. and K.W. Hipel, 2012. Multiple stages grey target decision making method with incomplete weight based on multi-granularity linguistic label. Information Sciences, 212: 15-32.

Zinodiny, S., S. Rezaei and S. Nadarajah, 2014. Bayes minimax estimation of the multivariate normal mean vector under balanced loss function. Statistics & Probability Letters, 93: 96-101.