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Research on the development model of small and micro tourism enterprises in e-commerce Environment

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Abstract. Aimed at supply chain development model problem of small and micro tourist enterprise at big data era, supply chain design method of small and micro tourist enterprise based on dynamic guidance and multi-objective harmony search algorithm is put forward. Firstly, construct multi-objective optimization model of supply chain of small and micro tourist enterprise based on the objective of minimizing the total cost and maximizing satisfaction of logistics demand node enterprise; secondly, bring in harmony search algorithm, construct new fitness function on the basis of α dominance relation and realize performance improvement of optimization process; finally, display that the proposed method has relatively high optimization accuracy in supply chain design of small and micro tourist enterprise through simulative example with more reasonable design process and it is significant to improve competitiveness of small and micro tourist enterprise.

Key words. Big data, Two-level model, Small and micro tourist enterprise, Supply chain, Harmony search algorithm.

1. Introduction

Human society has been in a period when rapid expansion of data appears. Total data size generated globally in 2016 is the sum of data generated in the past 5000 years ending in 2010. Arrival of big data era highlights value of data day by day and makes it become important asset of enterprise, which changes natural mode of traditional enterprise and breaks original operation mode. As important constituent part of small and micro enterprise, small and micro tourist enterprise plays a decisive role in enlarging employment, improving people's livelihood, promoting stability and driving effective development of regional economy. But double effect of free

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competition environment of market and information transparency intensifies product homogeneity and causes continuous cutthroat competition and frequent price war, which makes the entire commercial environment enter into low gross margin era. It is quite tough for small and micro enterprise surviving in the gap to develop, but arrival of “big data” era brings new horizon and new commercial opportunity to enterprise, and the whole world is shocked by energy of big data. Considering that data is generated newly, those who master data can perform transboundary overthrow. Tourist industry is different from traditional manufacturing industry, and particularity of its supply-demand relationship makes data play more important role in operation of the entire industry.

Small and micro tourist enterprise has small scale with few fixed assets, relatively weak economic base and few numbers of employee, mastering quite few tourism resource, so small and micro tourist enterprise does not have enough fund for self-development, and tourism product or service category provided is single. It is difficult for enterprise to recruit workers and human cost is high. Small and micro tourist enterprise has weak sustainable management and development capacity and it dose not have strong crisis withstanding capacity with relatively short life cycle. Small and micro tourist enterprise in Gansu is family-oriented basically, devoted to individual operation, such as catering, accommodation, retail, planting and cultivation etc. Small-scale tourism service project mainly exists in city and adjacent area of big scenic spot. In recent years, with flourishing development of rural tourism, small and micro tourist enterprise devoted to happy farmhouse has been developed gradually. Tourism supply chain is application practice of supply chain based on tourism industry. Tourism supply chain is service system taking satisfaction of tourist demand as objective, serving for a series of activity process, such as provision of consultation, traffic, accommodation, playing, entertainment and shopping etc. for tourists and being chain-type structural pattern connecting tourism provider, travel agent, tour operator, travel retailer, and tourists. Applied research on tourism supply chain is diversified. Literature [2] puts forward the opinion of taking travel agency as core supply chain. Literature [3-4] analyzes advantage of tourism supply chain taking travel agency as core. Literature [5] puts forward tourism supply chain opinion of taking tourist attraction as core and response to new tourism demand appearing continuously is mainly considered. Literature [6] suggests establishing strategic alliances of tourist enterprise, and network-based combo shall be formed where complementary advantages, risk sharing and working according to one’s ability and each taking what he needs exist through the way of alliance, cooperation agreement and equity sharing of more than 2 tourist enterprise individuals to form complementary coexisting situation.

In fact, supply chain model parameter is in time-varying condition because of change of economic environment. Deviation will appear if fixed parameter model is still considered. In this paper, multi-facility location problem of double supply chain of product from small and micro tourist enterprise is researched to lower the total cost maximally and improve customer satisfaction. Based on feature of product from small and micro tourist enterprise, traditional transportation cost and fixed facility location cost shall be considered, and treatment cost of waste and scrap and tracing cost shall be considered simultaneously. In addition, satisfaction attenuation function shall be established to express satisfaction of member in supply chain. Then fuzzy multi-objective two-phase method is applied to solve the model.

2. Description on product supply problem of small and micro tourist enterprise

Theoretically, product supply chain network of small and micro tourist enterprise is complex big system. Decision maker needs to consider different constraint and collision problems among production base, wholesaler and final user. In addition, he has to consider difference of plant equipment location and function. In this research, supply chain network $G = (A, E)$ is defined, including double channels and four stages: production base, logistics center, distribution center and client. A represents network node and E is network connection edge. Full line represents supply process of traditional channel while dotted line represents supply process of e-commerce channel, which is as shown in Fig.1. To optimize supply chain, the first objective of this paper is supply network design and equipment location problem under uncertain economic environment. Fundamental assumption involved is:

(1)Network planning problem of single agricultural product supply within period shall be considered.

(2)In each layer, manual handling cost of product from small and micro tourist enterprise is set the same.

(3)Demand on product from small and micro tourist enterprise at each node of supply chain shall be followed.

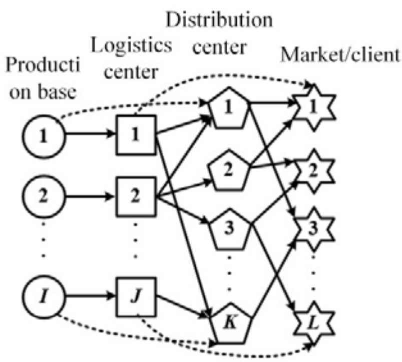


Fig. 1. Product supply chain network of small and micro tourist enterprise

Multi-objective linear programming model of product probability of small and micro tourist enterprise is as follows:

Objective 1: (minimization of total cost) under general condition, transportation cost in supply chain is concerned with location and capacity limitation of multi-objective facility. Transportation cost can be lowered maximally through fixation of plant facility. However, in product supply process of small and micro tourist enterprise, a great deal of product loss exists, and therefore, labor costs for waste treatment are necessary. Supposed that customer demand is followed after total production quantity of product from small and micro tourist enterprise subtracting loss, loss treatment cost of product from small and micro tourist enterprise is:

$$\begin{aligned} W_d =&\tilde{w}_d(\sum_{(i,j)\in E} \alpha_{ij}x_{ij} + \sum_{(j,k)\in E} \alpha_{jk}y_{jk} + \sum_{(k,l)\in E} \alpha_{kl}z_{kl} \\ &+ \sum_{(i,k)\in E} \alpha_{ik}x_{ik} + \sum_{(j,l)\in E} \alpha_{jl}z_{jl} \,. \end{aligned} \tag{1}$$

In the formula, α_{ij} represents wastage rate from production base i to logistics center j; α_{jk} represents wastage rate from logistics center j to distribution center k; α_{kl} represents wastage rate from distribution center k to client l; α_{ik} represents wastage rate from production base i to distribution center k; α_{jl} represents wastage rate from logistics center j to client l.

In addition, food safety problem is the main problem concerned by people. For client and relevant organization, information attribute, coverage planting location, producer, seed gene, production ledger and date and time of food shall embody modernized food supply chain information sufficiently.

Tracing cost of product from small and micro tourist enterprise can be summarized as follows:

$$W_t = \tilde{w}_d \left(\sum_{(i,j)\in E} (1-\alpha_{ij})\, x_{ij} + \sum_{(j,k)\in E} (1-\alpha_{jk})\, x_{jk} \right) . \tag{2}$$

In formula (2), the first term is tracing cost of logistics center and the second term is tracing cost of distribution center. On the basis of above analysis, the entire operation cost of product supply chain of small and micro tourist enterprise includes transportation cost between nodes, equipment location fixation cost, loading and unloading cost and system tracing cost. Because of rapid change of economic environment, relevant parameter for product supply chain design of small and micro tourist enterprise is not precise. Objective function for supply chain design under imprecise environment:

$$\begin{aligned} \min Z_1 =&(\sum_{(i,j)\in E} \tilde{s}_{ij}x_{ij} + \sum_{(j,k)\in E} \tilde{e}_{jk}y_{jk} + \sum_{(k,l)\in E} \tilde{u}_{kl}z_{kl} \\ &+ \sum_{(i,k)\in E} \tilde{s}_{ik}x_{ik} + \sum_{(j,l)\in E} \tilde{u}_{jl}z_{jl}) + \sum_{t} \tilde{f}_i v_i \\ &+ \sum_{j} \tilde{g}_j r_j + \sum_{k} \tilde{h}_k r_k + W_d + W_t \,, \end{aligned} \tag{3}$$

Where, $\tilde{s}_{ij}$, $\tilde{e}_{jk}$, $\tilde{u}_{kl}$, $\tilde{s}_{ik}$, $\tilde{u}_{jl}$, $\tilde{f}$, $\tilde{g}_j$ and $\tilde{h}_k$ are imprecise parameters under triangular distribution. 1$\sim$5 items in formula (3) represent transportation costs of each layer, 6$\sim$8 items represent fixed costs of production base, logistics center and distribution center to be chosen and 9$\sim$10 items represent traceable cost and waste treatment cost.

Objective 2: (satisfaction of logistics demand node enterprise) classical facility location problem can be described as follows: certain covering radius is owned by all equipment nodes. When each demand point is within covering radius, then system client will be covered completely. Scholars establish attenuation function model of facility service coverage on the basis of upper and lower limit range of facility service provided by the maximum coverage problem. Aimed at logistics demand response time at node of supply chain, customer satisfaction function based on service time is introduced:

$$g_j(t_{ij}) = \begin{cases} x_{ij},\ if\ t_{ij} \le t_j\ and\ x_{ij} > 0 \\ \dfrac{x_{ij}(T_j - t_{ij})}{T_j - t_j},\ if\ t_j < t_{ij} \le T_j\ and\ x_{ij} > 0 \\ 0,\ if\ t_{ij} > T_j\ or\ x_{ij} = 0 \end{cases} \tag{4}$$

In the formula, t_j is the minimum response time required by demand node j, T_j is the maximum response time required by demand node j. t_{ij} is the shortest logistics time from production equipment i to distribution demand point j and x_{ij} is logistics demand quantity of demand point j. When logistics distribution can be finished within the minimum required time ($x_{ij} > 0$), customer satisfaction can be set as x_{ij}. When logistics distribution cannot be finished within the maximum required time or when $x_{ij} = 0$, customer satisfaction shall be set as 0. For those between the maximum and the minimum delivery time, satisfaction will decrease gradually with increase of delivery time, which is as shown in Fig.2.

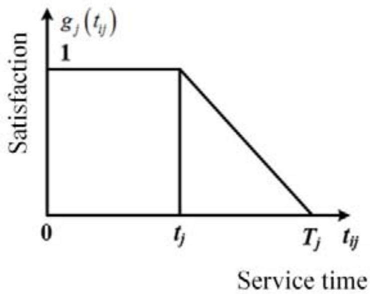


Fig. 2. Customer satisfaction function

Above method is also applicable to satisfaction function of quantized logistics demand point k and l. Therefore, for all logistics demand points, objective function of the maximum satisfaction of product from small and micro tourist enterprise can be defined as:

$$\begin{aligned} \max Z_4 =& [\sum_{(i,j)\in E} g_j\left(t_{ij}\right) + \sum_{(j,k)\in E} g_k\left(t_{jk}\right) \\ &+ \sum_{(i,k)\in E} g_k\left(t_{ik}\right) + \sum_{(k,l)\in E} g_l\left(t_{kl}\right) + \sum_{(j,l)\in E} g_l\left(t_{jl}\right)]\,. \end{aligned} \tag{5}$$

Model constraint is:

$$\sum_{(i,j)\in E} x_{ij} + \sum_{(j,k)\in E} x_{jk} \le \sum_{i} \tilde{a}_i v_i \,, \tag{6}$$

$$\sum_{(i,j)\in E} (1-\alpha_{ij})\, x_{ij} = \sum_{(j,k)\in E} y_{jk} + \sum_{(j,l)\in E} z_{jl} \le \sum_{j} \tilde{b}_j r_j \,, \tag{7}$$

$$\sum_{(j,k)\in E} y_{jk}\,(1-\alpha_{jk}) + \sum_{(i,k)\in E} x_{ik}\,(1-\alpha_{ik}) = \sum_{(k,l)\in E} z_{kl} \,, \tag{8}$$

$$\sum_{(k,l)\in E} z_{kl} \le \sum_{k} \tilde{c}_k q_k \,, \tag{9}$$

$$\sum_{(k,l)\in E} z_{kl}\,(1-\alpha_{kl}) + \sum_{(j,l)\in E} z_{jl}\,(1-\alpha_{jl}) \ge \sum_{l} \tilde{d}_l \,, \tag{10}$$

$$\sum_{i} v_i \le V, \sum_{j} r_j \le R, \sum_{k} q_k \le P \,. \tag{11}$$

Where, $v_i, r_j, q_k \in \{0,1\}$ and $x_{ij}, x_{ik}, y_{jk}, z_{jl}, z_{kl} \ge 0$. Above constraints (6∼10) give capacity constraints of production base, logistics center and distribution center in double-channel supply chain. Constraint (11) gives the maximum number restriction on equipment location.

3. Dynamic guidance and multi-objective harmony search algorithm

3.1. Harmony search

Some scholars put forward harmony optimization algorithm[11] on the basis of composition features of music. Parameters set in the algorithm: function of storage (HM) is to store input data (vector), HMS represents size of HM, and HMCR is reference rate index, representing rate of referring to existing music clips, $HMCR \in [0,1]$. PAR is spacing music note adjustment rate and bw is width music note adjustment rate. Algorithm process is as follows:

Step1: Optimization objective input shall be stored in HM firstly and input valuing interval shall be set. Generation form of input vector is:

$$x_i^r = x_i^l + rand \times \left(x_i^u - x_i^l\right) \,. \tag{12}$$

In formula (12), x_i^u is upper valuing limit of variable i while x_i^l is lower valuing limit of variable i.

Step 2: Firstly, judge whether existing individual in HM shall be chosen or brand-new individual shall be generated. If the former way is adopted, then adjustment shall be performed according to PAR and bw parameter setting.

$$\begin{cases} x_i^{new} = x_i^r \pm rand \times bw, & if\ rand < \text{PAR} \\ x_i^{new} = x_i^r, & if\ rand \geq \text{PAR} \end{cases} \tag{13}$$

Step 3: Calculate individual adaptive value. Choose adaptation individual on the basis of elite evolution method and realize HM renewal process.

Step 4: Test whether optimum adaptive value set is followed, and if it is followed, algorithm shall be terminated and output optimum value; otherwise return to Step2 for continuous evolution.

3.2. New fitness function on the basis of α dominance relation

$k_1(x) = f(x)$, $k_2(x) = G(x)$. For the convenience of expression, 2 optimization objectives are still in the form of: $k_1(x) = f(x)$ and $k_2(x) = G(x)$.

Definition 1: (α dominance) optimization objective (12) shall be rewritten, denoted as:

$$\begin{cases} \Omega_1 (k_1(x), k_2(x)) = k_1(x) + \alpha_{12} k_2(x) \triangleq \Omega_1(x)\ , \\ \Omega_2 (k_1(x), k_2(x)) = k_2(x) + \alpha_{21} k_1(x) \triangleq \Omega_2(x)\ . \end{cases} \tag{14}$$

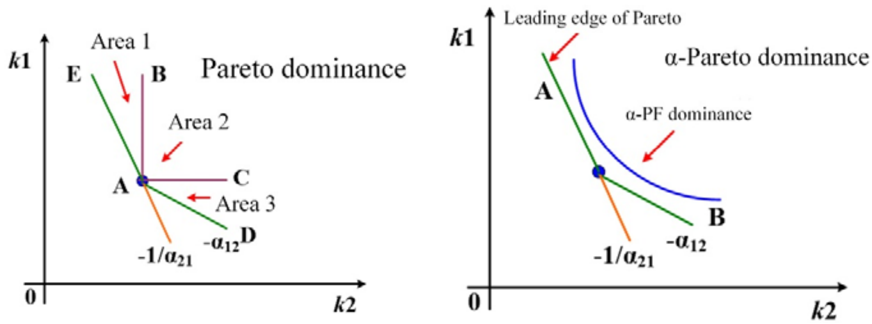
In formula (14), $\alpha_{12}, \alpha_{21} \geq 0$. If following conditions are met:

$$\begin{cases} \Omega_1(x_u) \leq \Omega_1(x_v) \wedge \Omega_2(x_u) < \Omega_2(x_v)\ , \\ \Omega_1(x_u) < \Omega_1(x_v) \wedge \Omega_2(x_u) \leq \Omega_2(x_v)\ . \end{cases} \tag{15}$$

It indicates that x_u is x_v of α dominance, denoted as $x_u \prec_\alpha x_v$.

In definition, if $\alpha_{12} = \alpha_{21} = 0$, α dominance changes to Pareto dominance form and that is to say that α dominance is special form of Pareto dominance. As shown in Fig. 3(a), Pareto dominance space shown in solution A is right front of BAC broken line location and α dominance space of solution A is right front of EAD broken line. Under Pareto relationship dominance, in dominance space BAC and EAD, mutual non-dominating relationship of solution A exists. Under α dominance, A can dominate solution in BAC and EAD. Therefore α dominance realizes restriction broadening of Pareto dominance and increases solution dominance space.

Gain leading edge of Pareto with α dominance. The form is $\alpha -$ PF changing with change of value of α_{12} and α_{21}. $\alpha -$ PF also changes at leading edge of Pareto. See Fig. 3(b) for details. Therefore α_{12} and α_{21} can be used to adjust and guide optimization objective to restrain within different solution set space of Pareto dominance.



(a) Pareto dominance (b) α-PF dominance

Fig. 3. Pareto dominance and α-pf dominance

4. Experimental analysis

2-level supply chain system of small and micro tourist enterprise is considered. In product marketing process, about 20% auxiliary product will be produced. In production process of manufacturer, enough tourist souvenir inventory shall be kept. Parameter setting in simulation process is as follows: $D = 2000$, $P = 3500$ and $\sigma = 7$, of which the individual weight is 100Kg. Cost parameter setting is as follows: $A = 25$, $A_v = 400$, $h_b = 5$, bag/unit time, $c_b = 7$, $S_v = 100$, $L = 4$, $\Delta_3 = 300$, $\Delta_4 = 300$. $S = 500$, demand expectation of delivery time $D_L = DL/50 = 80$. Demand variance of delivery time $\sigma_L = \sigma\sqrt{L} = 14$, $\Delta_1 = \Delta_3 L/50 = 24$ and $\Delta_2 = \Delta_4 L/50 = 24$. Therefore, 20% auxiliary product will be produced in production process of above tourist souvenir, which means that conversion rate of finished product is $\beta = 80\%$. As shown in algorithm steps in Section 3.3, for starting of algorithm, $r_1 = 80$ and $m_1 = 3$ and iterative output is as shown in table 1.

Table 1. Iterative process

i	r	m	Q	J_L	Q_v
1	86	4	153.6	2536.78	
2	105.39	5	133.67	2479.63	
3	108.47	5	133.67	2479.63	835.4*

As shown in table 1, optimum strategy of above 2-level supply chain system is: $m^* = 5$, $r^* = 108.47$ and $Q^* = 133.67$. Expected value of the minimum joint cost is $J_L = 2479.63$. Raw material order quantity of manufacturer is $Q_v^* = m^*Q^*/\beta = 835.4$.

For sensitivity analysis of raw material purchase and inventory keeping cost, simulation result is as shown in table 2.

Table 2. Sensitivity of ordering cost and keeping cost

h_r	S_v	i	r	m	Q	J_L	Q_v
0	0	1	82	3	171.6	2176.7	
		2	102.6	4	138.1	2148.1	
		3	106.3	5	116.5	2145.1	
		4	108.9	5	116.5	2145.1	728.1*
2	1500	1	82	6	169.1	4374.8	
		2	102.9	8	130.9	4350.6	
		3	107.1	9	117.8	4350.1	
		4	108.7	9	117.8	4350.1	1325*
3	100	1	82	3	159.3	2741.2	
		2	103.9	4	125.9	2723.4	
		3	107.7	4	125.9	2723.4	629*

When $h_r = 0 = S_v$, raw material purchase and holding cost does not exist, and optimum strategy is: $r^* = 108.9$, $m^* = 5$, $Q^* = 116.5$, $J_L^* = 2145.1$ and $Q_v^* = 728.1$. Different from literature [15], this paper considers random demand rate and inventory shrinkage is allowable. When purchase cost is from 100 to 1500, $r^* = 108.7$, $m^* = 9$, $Q^* = 117.8$, $J_L^* = 4350.1$ and $Q_v^* = 1325$. Amount purchased and delivery number to the buyer increase with increase of purchase cost. Therefore J_L^* increases. When inventory keeping cost increases from 2 to 3, optimum strategy is: $r^* = 107.7$, $m^* = 4$, $Q^* = 125.9$, $J_L^* = 2723.4$ and $Q_v^* = 629$. Therefore in supply chain system, purchase and transportation cost of manufacturer affects supply chain strategy greatly and ordering of the buyer will be affected obviously at the same time.

Table 3. Random demand interest margin sensitivity

$\Delta_1 - \Delta_2 - \Delta_3 - \Delta_4$	i	r	m	Q	J_L	Q_v
24-8-300-100	1	76	3	163.7	2396	
	2	92	4	128.8	2371	
	3	94	4	128.8	2371	644*
24-24-300-300	1	80	3	167.4	2521	
	2	103	4	132.8	2497	
	3	106	4	132.8	2497	664*
24-40-300-500	1	84	3	170.7	2650	
	2	121	4	135.7	2621	
	3	124	4	135.7	2621	678*
8-24-100-300	1	84	3	170.3	2573	
	2	106	4	135.5	2542	
	3	109	5	113.3	2540	
	4	111	5	113.3	2540	708*
40-24-500-300	1	76	3	166.1	2461	
	2	93	4	130.8	2446	
	3	101	4	130.8	2446	654*

For demand interest margin sensitivity analysis, simulation result is as shown in table 3.

Effect of $\Delta_1 \sim \Delta_4$ demand change on supply chain strategy is mainly tested here. When Δ_1 and Δ_2 are fixed, order quantity of the buyer increases obviously with increase of Δ_3 and Δ_4, and order quantity of the buyer and joint cost function increase. Shipment time of the buyer keeps unchanged, and simulation result is as shown in table 3. When Δ_3 and Δ_4 are fixed, r^* and J_L^* will increase with increase of Δ_1 and Δ_2 and shipment time of the buyer will change. Relatively high demand uncertainty will cause relatively high order point level. The value increases from 94 to 124, as described in table 3, which shows that $\Delta_1 \sim \Delta_4$ affect supply chain management strategy greatly and verifies effectiveness of algorithm in this paper.

Dynamic demand rate of model affects experiment, which is as shown in Fig.4. In the experiment, demand rate is chosen as $d = 0.1$, $d = 0.15$, $d = 0.2$ and $d = 0.25$.

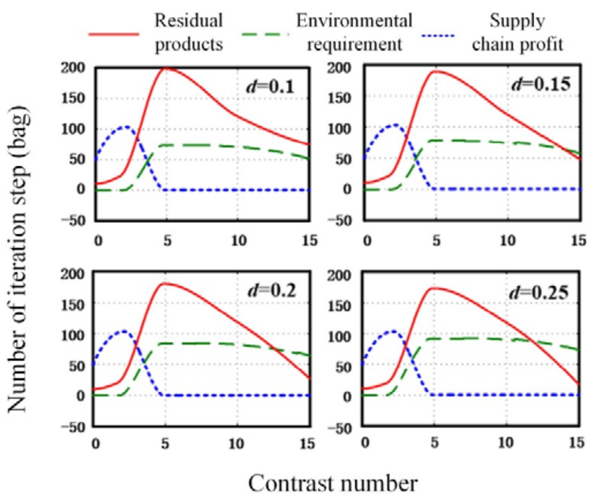


Fig. 4. Dynamic demand rate effect

Seen from Fig.4, when demand rate increases from 0.1 to 0.25, number of residual products decreases rapidly and supply chain system profit increases rapidly. Seen from the figure, demand rate affects above 2 indexes greatly, and therefore, it is relatively difficult to gain demand rate correctly in reality and random process model used in this paper solves the problem effectively.

5. Conclusion

This paper puts forward supply chain design method of small and micro tourist enterprise based on dynamic guidance and multi-objective harmony search algorithm, constructs multi-objective optimization model of supply chain of small and micro tourist enterprise and performs optimization design on the basis of dynamic guidance and multi-objective harmony search algorithm with reasonable algorithm design process, which is important to improve competitiveness of small and micro tourist enterprise. In next step, application system development of algorithm and practical application effect verification will be focused mainly.

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References

[1] F. Halawani, M. M. B. Abdullah, M. S. Rahman, et al.: *A Proposed Framework for E-Commerce Usage and Competitive Advantage on Small and Medium Tourism Enterprises (SMTES) in Lebanon*[J]. Journal of Social & Development Sciences (2013).

[2] J. F. Hu, B. S. Li: *Research on the application of web data mining technology in tourism E-Commerce*[C]// World Automation Congress. IEEE (2012), 2 1–4.

[3] J. Chen: *Research on the E-Commerce Model of Small and Medium Enterprises*[J]. Applied Mechanics & Materials *687-691* (2014), No. 20, 2019–2022.

[4] W. F. Guo: *Research on the Development of Chinese Small and Micro Enterprises Based on Institutional Change*[J]. Advanced Materials Research *912-914* (2014), 1719–1722.

[5] N. Yüzba?şioğu, P, Çelik, Y. Topsakal: *A Research on Innovation in Small and Medium-sized Enterprises in Tourism Industry: Case of Travel Agencies Operating in Antalya* [J]. Procedia - Social and Behavioral Sciences *150* (2014), No. 6, 735–743.

[6] L. I. Wen-Juan, Y. Zhou: *The Preliminary Study of E-commerce Marketing Model of Tourism Enterprise:A Case Study of the Establishment and Marketing of Taobao.com Tourism Online*[J]. Journal of Shaoyang University *21* (2013), No. 4, 1295–1308.

[7] K. Chulwon: *Application of E-commerce Strategies to Small and Medium sized Tourism Enterprises (SMTEs)*[J]. International Journal of Tourism Sciences *4* (2015), No. 1, 163–178.

[8] S. Roberts, J. Tribe: *Exploring the Economic Sustainability of the Small Tourism Enterprise: A Case Study of Tobago*[J]. Tourism Recreation Research *30* (2015), No. 1, 55–72.

[9] P. Megicks: *E-Commerce and Small Tourism Businesses in Developing Countries: Drivers versus Boundaries of Adoption*[J]. Tourism Planning & Development *10* (2013), No. 3, 249–266.

[10] F. Kilipiris, S. Zardava: *Developing Sustainable Tourism in a Changing Environment: Issues for the Tourism Enterprises (Travel Agencies and Hospitality Enterprises)*[J]. Procedia - Social and Behavioral Sciences *44* (2012), No. 4, 44–52.

[11] W. Strielkowski, J. Abrhám, J. Herget: *Success factors of growth and development for small and medium enterprises in tourism sector*[J]. Journal of Applied Economic Sciences *9* (2014), No. 1, 101–109.

[12] R. Hallak, G. Assaker, C. Lee: *Tourism entrepreneurship performance: the effects of place identity, self-efficacy, and gender.*[J]. Journal of Travel Research *54* (2015), No. 1, 36–51.

[13] E. Saputra, E. Rindrasih: *Participatory planning and village tourism SMEs: a case study of Bantul Regency, Yogyakarta, Indonesia.*[J]. Geografia Malaysian Journal of Society & Space (2012), No. 2012, 54–64.

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