Relationship between Concentration and Location of the Herbal Industry

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Abstract: Malaysia aspires to become developed and high income nation by year 2020. Under the Tenth Malaysia Plan, herbal industry was the first Entry Point Project for Agricultural National Key Economic Area in Economic Transformation Programme. To understand the current status of the herbal industry, FRIM (Forest Research Institute Malaysia) conducted the survey on 6,923 herbal chain players, consisted from upstream to downstream activities. A face-to-face interview was conducted using a structured questionnaire to gather the information. This paper highlighted the relationship between concentration of the herbal industry and urbanization's status of the areas. The finding shows that a statistically significant difference exists between category of herbal activities and status of the areas. The upstream activities are more concentrated in rural areas, while most of downstream activities in urban areas. It is in line with central place of theory on how settlements and places are located in relation to one another and their functions. Therefore, to further develop the herbal industry, the government should consider strategic location by category of industrial activities in policies planning, programmes implementation and providing infrastructural support needed by the industry.

Key words: Upstream, downstream, herbal industry, industrial location, central place theory.

1. Introduction

Malaysia is recognised as one of 12 top mega-biodiversity countries. Burkill [1] recorded around 1,300 plants used for traditional medicine in Malay Peninsula while Latif [2] reported around 2,000 plants with medicinal properties. The advantage aspired Malaysia to utilize its natural resources as sources of income and become developed nation by year 2020. Herbal industry was introduced as the first Entry Point Project for Agricultural National Key Economic Area in Economic Transformation Programme during the Tenth Malaysia Plan. The programme marks the government's seriousness in developing the Malaysian herbal industry as one of the major economic sectors [3].

The determination of the Malaysian government in developing the herbal industry is due to its economic potential. Global herbal medicine market is expected to reach 111 billion USD by end of 2023, projected to

grow at a Compound Annual Growth Rate (CAGR) of around 7.2% during 2017-2023 [4]. Local market potential on herbal products is also huge. Recent survey on herbal products consumption estimated 72% of Malaysian adults consumed herbal products [5]. The finding is almost similar to the previous survey conducted by FRIM in 2013 which records 73% of herbal products consumption among Malaysian [6].

Study on business location especially on retail location has been explored long ago by researchers from various discipline. Clarke, et al. [7] in their paper explained the research tradition from the perspective of geographers and marketers in having a better understanding on the process of locational decision making. However, such studies on the Malaysian herbal industry are still lacking and it makes difficult to completely understand the distribution pattern of the industry.

2. Methodology

2.1 Data Collection

The data were originally acquired from study on

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value chain of herbal industry in Peninsular Malaysia. An extensive survey was conducted on the herbal industry players located throughout Peninsular Malaysia during 2014-2015. Updating of the first survey data (compiled in database known as HerbaXpress) was done from time to time starting 2016 until 2018 through different studies.

2.2 Data Analysis

Classification of urban, sub-urban and rural areas was done by referring to the delimitation provided by local authorities. Each of herbal player addressed was paired according to the respective group. Descriptive and independent samples Kruskal-Wallis Test were conducted to analyse the data.

3. Results and Discussion

The herbal industry players were formed with the group of PMS (Planting Material Suppliers), cultivators, product owners/manufactures, wholesalers and retailers. Most of herbal chain players operated in urban areas followed by sub-urban and finally rural. An average of 142 players distributed in each of 23 urban areas were identified in this study. A statistically significant difference ($H = 20.891$, $p <$

0.01) exists between overall number of herbal chain players by status of the area. The distributions were most likely influenced by group of downstream players as the group formed the majority (88%) of herbal chain players (Table 1).

Upstream players in herbal industry included group of PMS and cultivators. Three hundred and twenty-nine (329, 48%) of upstream players operated their business in rural areas while 248 (37%) operated in sub-urban areas. Only 101 (15%) of the upstream players operated in the urban areas. A statistically significant difference ($H = 7.279$, $p < 0.026$) exists between number of upstream players by status of the areas (Table 2).

Selection of suitable and strategic business location is crucial in production of products. Most of producers preferred sub-urban or urban areas to locate their business. Only 128 (23%) of producers decided to operate their business in rural areas. A statistically significant difference ($H = 8.979$, $p < 0.011$) exists between number of producers by status of the areas (Table 3).

Downstream players consist group of wholesalers and retailers. It is common for downstream players with outlets to set up their business in middle of

Table 1 Herbal chain players by status of the areas.

	N	Mean	Std. deviation	Std. error	95% Confidence interval for mean		Minimum	Maximum
					Lower bound	Upper bound		
Urban	23	142.22	179.772	37.485	64.48	219.96	3	657
Sub-urban	32	79.19	67.406	11.916	54.89	103.49	14	256
Rural	47	32.66	19.057	2.780	27.06	38.26	1	87
Total	102	71.96	102.269	10.126	51.87	92.05	1	657

$H = 20.891^{**}$, p -value = 0.000.

** Independent-samples Kruskal-Wallis Test is significant at the 0.01 level (2-tailed).

Table 2 Upstream players by status of the areas.

	N	Sum	Mean	Std. deviation	Std. error	95% Confidence interval for mean		Minimum	Maximum
						Lower bound	Upper bound		
Urban	23	101	4.3913	7.17786	1.49669	1.2874	7.4952	0.00	22.00
Sub-urban	32	248	7.7500	9.53432	1.68545	4.3125	11.1875	0.00	48.00
Rural	47	329	7.0000	9.76017	1.42367	4.1343	9.8657	0.00	60.00
Total	102	678	6.6471	9.17125	0.90809	4.8457	8.4485	0.00	60.00

$H = 7.279^{*}$, p -value = 0.026.

* Independent-samples Kruskal-Wallis Test is significant at the 0.05 level (2-tailed).

Table 3 Number of producers by status of the areas.

	N	Sum	Mean	Std. deviation	Std. error	95% Confidence interval for mean		Minimum	Maximum
						Lower bound	Upper bound		
Urban	23	206	8.9565	14.66126	3.05708	2.6165	15.2965	0.00	66.00
Sub-urban	32	214	6.6875	6.18759	1.09382	4.4566	8.9184	0.00	23.00
Rural	47	128	2.7234	2.98330	0.43516	1.8475	3.5993	0.00	15.00
Total	102	548	5.3725	8.32855	0.82465	3.7367	7.0084	0.00	66.00

$H = 8.979^*$, p -value = 0.011.

* Independent-samples Kruskal-Wallis Test is significant at the 0.05 level (2-tailed).

Table 4 Number of downstream players by status of the areas.

	N	Sum	Mean	Std. deviation	Std. error	95% Confidence interval for mean		Minimum	Maximum
						Lower bound	Upper bound		
Urban	23	2,964	128.8696	162.71121	33.92763	58.5080	199.2312	3.00	626.00
Sub-urban	32	2,072	64.7500	60.51180	10.69708	42.9332	86.5668	2.00	232.00
Rural	47	1,078	22.9362	13.30806	1.94118	19.0288	26.8436	1.00	67.00
Total	102	6,114	59.9412	93.26231	9.23434	41.6227	78.2596	1.00	626.00

$H = 25.718^{**}$, p -value = 0.000.

** Independent-samples Kruskal-Wallis Test is significant at the 0.01 level (2-tailed).

location with high population. Hence, it is not surprising when 5,036 or 82% of downstream players operated their business either in urban or sub-urban areas. A statistically significant difference ($H = 25.718$, $p < 0.00$) exists between number of downstream players by status of the areas (Table 4).

4. Conclusion

The finding shows that a statistically significant difference exists between category of herbal activities and status of the areas. The upstream activities (supplying of planting materials and cultivations) are more concentrated in rural areas, while most of downstream activities (wholesaling and retailing) in urban areas. Deciding location in operating a business is important to the business owners. Theoretically, business locations have a direct impact on the operating costs and revenues. The findings are also in line with the Christaller's Central Place Theory (1933) on how settlements and places are located in relation to one another and their functions. The theory discussed concepts of central place, central goods and services, the range of a goods and finally the complementary region [8].

Even though the herbal industry has been developed for a long time, recent study from FRIM concluded

the industry is still in infancy stage [9]. Farizah et al. [3] also highlighted several issues and challenges that curb the production of locally high-claim herbal products. These situations proved the needs of continued government assistances to further strengthen the industry. However, proper strategies need to be outlined to ensure the benefits from government programmes reach the targeted groups. Therefore, to further develop the herbal industry, the government should consider strategic location by category of industrial activities as one of the important criteria in policies planning, programmes implementation and providing infrastructural support needed by the industry.

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