



THE INEQUALITY OF TOURISM REVENUES IN THAILAND: CITY OR CONGLOMERATION

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ABSTRACT

The rapid growth in tourism sector since the early of 2010s generate a significance revenue for Thai economy. In the views of inequality, tourism revenue concentrated only in Bangkok (capital city) and major cities. In fact, there are many cities which do not enjoy with the expansion in tourism sector. Then, this paper aims to evaluate the degree of inequality of tourism revenue by employ the Gini coefficient and Atkinson index by city and conglomeration (Thailand's hidden gems and tourism cluster). On city level, the results explore the high inequality of tourism income distribution. However, the conglomeration, Thailand hidden gems and tourism cluster, can improve the degree of inequality. This paper concluded that the inequality of tourism revenue is nature and obliterated especially in city level. Following the finding, the policy to enhance the declining of the inequality of tourism revenue should be (1) implemented as the conglomeration city in order to reduce the variation between cities, (2) introduced the unseen destination especially in low tourism revenue city, (3) promoted the new tourism routes to foreign visitors and (4) supported the tourism value chain to push a strong linkage with local and neighbor cities.

Key words: Thai Tourism, Tourism Revenues, Inequality, Gini Coefficient, Atkinson Index

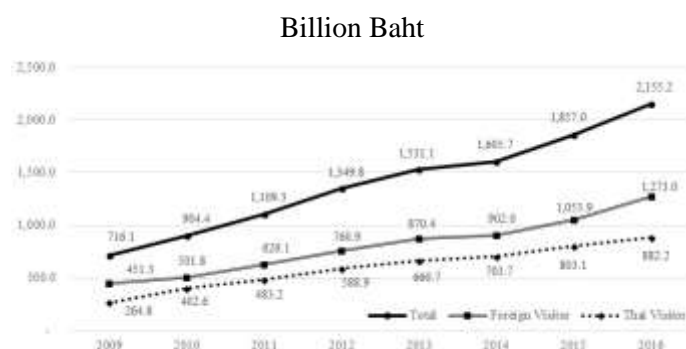
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1. INTRODUCTION

The rapid growth in tourism sector since the early of 2010s generate a significance revenue for Thai economy. Figure 1.1 shows that in 2009 tourism revenues recorded 716.1 Billion Baht. Tourism revenue climbed up with a significance growth with 17.23 percent average growth of revenue each year. In 2016, the tourism revenue is 2,155.2 Billion Baht. Not only

in total revenue, have the expansions of tourism sector been found both in foreign tourism revenue and Thai tourism revenue. The continuous growth has been recognized since 2009. The expansion of tourism sector generates domestic demand and output in many sectors. However, in the views of inequality, tourism revenue concentrated only in Bangkok (capital city) and major cities (Bangkok, Phuket and Chonburi). Higher than 60 percent of tourism revenues occurred in these three cities and for foreign tourism revenues more than 75 percent were record. According to this fact, there are many cities which do not enjoy with the expansion in tourism sector. Then, this paper aims to evaluate the degree of inequality of tourism revenue by employ the Gini coefficient and Atkinson index by city and conglomeration (Thailand’s hidden gems and tourism cluster). The finding of this paper can be applied to policy maker to promote the equality in tourism revenue in Thailand.



Source: National Statistic Office, Thailand

Figure 1: Tourism Revenues (2009-2016)

Table 1: Structure of Tourism Revenue in Thailand (2009-2016)

Foreign Visitor			Thai Visitors			Total		
City	Revenues (Million Baht)	Share (%)	City	Revenues (Million Baht)	Share (%)	City	Revenues (Million Baht)	Share (%)
Bangkok	120,618.96	40.06	Bangkok	74,940.76	35.66	Bangkok	194,907.13	37.79
Phuket	79,265.39	26.32	Chiangmai	13,962.27	6.64	Phuket	89,926.36	17.43
Chonburi	35,081.05	11.65	Phuket	11,050.36	5.26	Chonburi	44,348.06	8.60
Suratthani	15,053.81	5.00	Chonburi	9,060.77	4.31	Chiangmai	22,693.63	4.40
Krabi	14,079.57	4.68	Krabi	7,982.15	3.80	Krabi	22,287.10	4.32
Phangnga	8,644.15	2.87	Songkla	6,907.15	3.29	Suratthani	18,452.84	3.58
Chiangmai	7,890.86	2.62	Rayong	6,338.75	3.02	Songkla	13,010.93	2.52
Songkla	5,995.37	1.99	Prachuap Kiri Khun	4,966.14	2.36	Phangnga	9,862.18	1.91
Prachuap Kiri Khun	2,499.88	0.83	Phetchaburi	4,573.16	2.18	Rayong	7,843.87	1.52
Trad	1,636.71	0.54	Chiangrai	4,546.08	2.16	Prachuap Kiri Khan	7,780.93	1.51
Others	10,338.09	3.43	Others	65,816.43	31.32	Others	84,710.20	16.42
Total	301,103.84	100.00	Total	210,144.01	100.00	Total	515,823.21	100.00

Source: Ministry of Tourism and Sports, Thailand

2. MODEL AND METHODOLOGY

In order to evaluate the degree of inequality, this paper employs 2 statistics: Gini coefficients and Atkinson index to measure the tourism revenue distribution. There are many recent empirical researches have been employed these statistics to evaluate the inequality in tourism revenue including Eleftherios (2003), Shkolnikov et al. (2003), Blake et al. (2008), Marcouiller and Xia (2008), Haddad, Porsse and Rabahy (2011), Gatti (2013), Alam and Paramati (2016), Li et al. (2016), Beheshti, Exenberger (2017), Mohammadzadeh and Ghasemlou (2017), Njoya and Seetaram (2017), and Raza and Shah (2017). The Gini coefficient (GC) and Atkinson index (AI) can be calculated as following

$$GC = \frac{1}{2n^2 ATR} \sum_{i=1}^n \sum_{j=1}^n |TR_i - TR_j| \quad (1)$$

$$AI = 1 - \left[\frac{1}{n} \sum_{i=1}^n \left[\frac{TR_i}{ATR} \right]^{1-\varepsilon} \right]^{\frac{1}{1-\varepsilon}} ; \varepsilon \neq 1 \quad (2)$$

$$= 1 - \frac{\prod_{i=1}^n (TR_i^{1/n})}{ATR} ; \varepsilon = 1$$

where TR_i is tourism revenues of i^{th} city, TR_j is tourism revenues of j^{th} city, ATR is average tourism revenue in a quarter, n is number of city and ε is the society's degree of sensitivity to inequality of distribution (0 to 2). Both GC and AI range between 0 to 1. The lower of GC and AI are lower degree of inequality in tourism revenue across the city. In general, these two statistics give the same direction of the degree of inequality. The quarterly data, the fourth quarter of 2013 to the first quarter of 2018, of tourism revenues classified by city (77 cities) collected from ministry of tourism and sports and national statistical office were organized.

3. RESULTS

In this section, the Gini coefficient (GC) and Atkinson index (AI) will be presented. The presentations are the result for whole countries (77 cities), Thailand hidden-gems campaign and tourism clusters. The first finding of the equality of tourism income distribution is Table 2. It shows the degree of inequality of tourism revenues both in term of GC and AI for the whole economy which included 77 cities. The GI in this period are high. It lies be 0.7964-0.8589. The AI , by assumed the neutral of inequality ($\varepsilon = 1$), also recorded high. The results indicate the high degree of the inequality of tourism revenues. The time path of GC and AI in Figure 2 show that the degree of inequality has been constant since 2013. The degree of inequality of tourism revenue has not been improved. Because the tourism revenue concentrated only in the major cities: Bangkok, Phuket and Chonburi. (Table 1) Eighty percent of tourism revenue was recorded in 8 cities: Bangkok, Phuket, Chonburi, Chiangmai, Krabi, Suratthani and Songkla. The degree of inequality in tourism revenues by foreign visitor was higher than the total revenue. The GC and AI for foreign tourism revenue in Table 2 were high and close to 1. The perfect inequality of foreign tourism revenues since 2013 has been noted. The revenue by foreign visitor usually records in 3 cities: Bangkok, Phuket and Chonburi. The inequality of tourism revenue is lower for Thai visitors. The GC and AI ranged 0.6282 to 0.7794. However, the degree of inequality remains high. Table 1 shows that the highest tourism revenue by Thai visitor is in Bangkok, 35.66 percent of tourism revenue by Thai visitor. To cut off the city which not involving with tourism, Table 3 were prepared to evaluate the degree of inequality in 60 cities which high tourism revenue and involving tourism promoting campaign (Thailand hidden-gems and tourism clusters). The conclusion also the same as above. The high and constant degree of inequality in tourism revenues has been found. The results indicate that the tourism revenues in Thailand are high inequality distributed among cities. This is the nature of tourism sector. The tourism revenue depends upon the tourism attractions including natures, cultures, and activities. The higher tourism attractions induce the higher tourism revenue.

Next, to gauge the inequality of tourism revenues in the conglomeration, 77 cities in Thailand were grouped by 2 definitions: Thailand's hidden-gems and tourism cluster. For

Thailand’s hidden-gem, this definition set up by ministry of tourism and sports to promote the tourism in small cities. There are 6 groups of cities for this case: (1) Bangkok, (2) the major cities include 12 cities (top 12 cities of tourism revenue): Chiangmai, Chiangrai, Prachaup Kiri Khun, Phetburi, Chonburi, Phuket, Krabi, Nakorn Ratchasima, Surat Thani, Songkla and Kanchanburi, (3) the minor cities, there are 12 cities (top 13 to 24 cities of tourism revenue: Ubon Ratchatani, Phranakornsri Aydtthaya, Nongkai, Tak, Khonkhen, Udon Thani, Saraburi, Nakornayok, Samutprakarn, Lopburi, Chachensao and Meahongson, (4) 12 cities should not miss (Lampang, Chumporn, Trad, Chantaburi, Trang, Burirum, Loie, Nakorn Sri Thamarat, Phetchaboon, Ratchburi, Samut Songkarm and Nan, (5) 12 cities should not miss plus (Lampoon, Ranong, Rayong, Satoon, Phisanulok, Sakeaw, Nakorn Phratom, Supanburi, Phatalung, Chaiyapoom and Phrea) and (6) others. For the tourism cluster, there are 8 tourism clusters defined in tourism master plan: (1) lanna culture (Lampang, Lampoon, Chiangmai, Chiangrai and Phayao), (2) royal coast (Chumporn, Ranong, Prachaup Kiri Khun, and Phetburi), (3) active beach (Trad, Rayong, Chonburi, and Chonburi), (4) andaman (Phuket, Trang, Satoon, Krabi, and Phangnga), (5) south i-san (Burirum, Surin, Ubon Ratchatani, Nakorn Ratchasima, and Srisaket), (6) culture in center (Phitsanulok, Tak, Sukhotai, and Kampangphet), (7) khong river (Loie, Nongkai, Mookdahan, Nakorn Phanom and Bungkan), and (8) chao phraya river (Phranakornsri Aydtthaya, Nonthaburi, Phatumtani, Aungthong, and Singburi).

Table 2: Inequality of Tourism Revenues in Thailand

Year	Quarter	Total		Foreign Visitor		Thai Visitor	
		Gini	Atkinson	Gini	Atkinson	Gini	Atkinson
2013	4	0.8389	0.8151	0.9402	0.9829	0.7004	0.6282
	1	0.8455	0.8290	0.9300	0.9828	0.7430	0.6818
2014	2	0.8316	0.8036	0.9326	0.9803	0.7376	0.6770
	3	0.8421	0.8177	0.9324	0.9787	0.7733	0.7215
	4	0.8380	0.8154	0.9384	0.9831	0.7028	0.6307
2015	1	0.8432	0.8248	0.9299	0.9830	0.7382	0.6737
	2	0.8319	0.8034	0.9325	0.9808	0.7338	0.6705
	3	0.8492	0.8257	0.9345	0.9805	0.7794	0.7273
	4	0.8405	0.8175	0.9387	0.9834	0.7077	0.6345
2016	1	0.8524	0.8376	0.9334	0.9853	0.7337	0.6675
	2	0.8422	0.8179	0.9357	0.9833	0.7339	0.6696
	3	0.8550	0.8336	0.9376	0.9826	0.7779	0.7254
	4	0.8426	0.8214	0.9370	0.9838	0.7176	0.6466
2017	1	0.8434	0.8253	0.9301	0.9835	0.7325	0.6659
	2	0.8492	0.8286	0.9373	0.9845	0.7393	0.6772
	3	0.7964	0.7509	0.9392	0.9837	0.7794	0.7280
	4	0.8495	0.8311	0.9389	0.9849	0.7228	0.6537
2018	1	0.8589	0.8471	0.9359	0.9864	0.7314	0.6672

Gini Coefficient, Atkinson Index

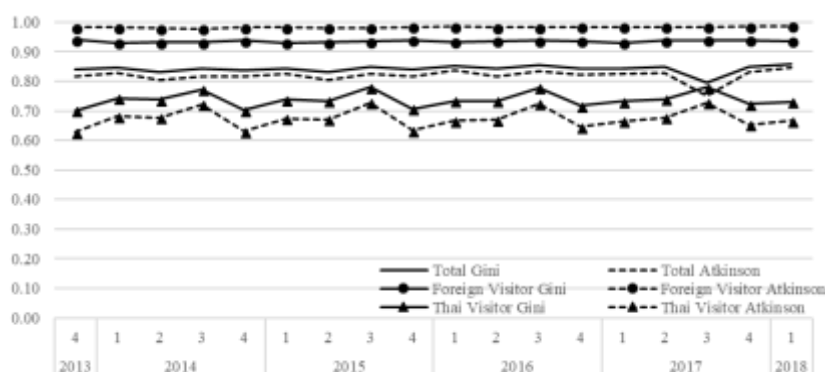


Figure 2: Trends of Gini Coefficient and Atkinson Index of Tourism Revenues in Thailand**Table 3:** Inequality of Tourism Revenues in 60 cities in Thailand

Year	Quarter	Total		Foreign Visitor		Thai Visitor	
		Gini	Atkinson	Gini	Atkinson	Gini	Atkinson
2013	4	0.8181	0.7875	0.9266	0.9746	0.6639	0.5723
	1	0.8230	0.7974	0.9132	0.9730	0.7108	0.6274
2014	2	0.8125	0.7765	0.9181	0.9710	0.7092	0.6290
	3	0.8224	0.7894	0.9177	0.9667	0.7472	0.6823
	4	0.8164	0.7868	0.9242	0.9748	0.6666	0.5739
2015	1	0.8213	0.7941	0.9130	0.9732	0.7076	0.6209
	2	0.8138	0.7791	0.9178	0.9720	0.7072	0.6264
	3	0.8310	0.8003	0.9199	0.9695	0.7560	0.6920
	4	0.8200	0.7906	0.9243	0.9752	0.6746	0.5822
2016	1	0.8316	0.8098	0.9171	0.9770	0.7029	0.6149
	2	0.8250	0.7963	0.9212	0.9757	0.7083	0.6273
	3	0.8374	0.8098	0.9234	0.9727	0.7546	0.6905
	4	0.8222	0.7952	0.9220	0.9757	0.6859	0.5967
2017	1	0.8216	0.7954	0.9131	0.9742	0.7014	0.6129
	2	0.8321	0.8073	0.9230	0.9774	0.7133	0.6341
	3	0.7730	0.7168	0.9252	0.9743	0.7558	0.6925
	4	0.8295	0.8055	0.9243	0.9773	0.6913	0.6038
2018	1	0.8381	0.8198	0.9199	0.9785	0.6988	0.6124

The GC and AI were applied exhibited in Table 4. The inequality of total tourism revenue is moderate. The GC and AI ranged among 0.4176 to 0.5905. The degree of tourism revenue from foreign visitor recorded high, explained by GC and AI. The degree of inequality of tourism revenue from Thai visitor was low. All of GC and AI which were calculated by the conglomeration are lower than the GC and AI by the cities because of the lower variation within conglomeration. However, the trend of the GC and AI in Figure 3 has been unchanged over this period. Not only the Thailand's Hidden Gems but the tourism cluster also presented the lower degree of inequality of the tourism revenues. Table 6 and Figure 4 explained that the inequality of total tourism revenue among 8 tourism clusters and major tourism related cities were moderate and constant. The inequality in total revenue is moderate as GC and AI move around 0.4836 to 0.6327) which explore a slice higher degree comparing with Thailand's hidden gems. The inequality of foreign tourism revenue by 8 tourism clusters also detected high while the inequality of Thai tourism revenue was low.

Table 4: Inequality of Tourism Revenues for Thailand's Hidden Gems (Conglomeration)

Year	Quarter	Total		Foreign Visitor		Thai Visitor	
		Gini	Atkinson	Gini	Atkinson	Gini	Atkinson
2013	4	0.5329	0.5129	0.6376	0.8185	0.3673	0.2388
	1	0.5450	0.5489	0.6354	0.8106	0.4155	0.3021
2014	2	0.5228	0.4907	0.6346	0.8028	0.4128	0.2769
	3	0.5584	0.5171	0.6509	0.7863	0.4711	0.3481
	4	0.5355	0.5188	0.6384	0.8210	0.3735	0.2468
2015	1	0.5438	0.5475	0.6362	0.8146	0.4103	0.2959
	2	0.5239	0.4945	0.6361	0.8093	0.4070	0.2709
	3	0.5652	0.5375	0.6456	0.8019	0.4845	0.3635
	4	0.5382	0.5262	0.6395	0.8257	0.3786	0.2503
2016	1	0.5546	0.5737	0.6412	0.8349	0.4080	0.2929
	2	0.5362	0.5221	0.6408	0.8292	0.4039	0.2715
	3	0.5689	0.5525	0.6486	0.8185	0.4799	0.3600
	4	0.5420	0.5362	0.6405	0.8303	0.3900	0.2643
2017	1	0.5456	0.5531	0.6379	0.8220	0.4074	0.2915
	2	0.5434	0.5390	0.6425	0.8369	0.4090	0.2789
	3	0.4906	0.4176	0.6523	0.8250	0.4811	0.3625
	4	0.5492	0.5524	0.6424	0.8381	0.3963	0.2721
2018	1	0.5625	0.5905	0.6439	0.8456	0.4079	0.2931

Gini Coefficient, Atkinson Index

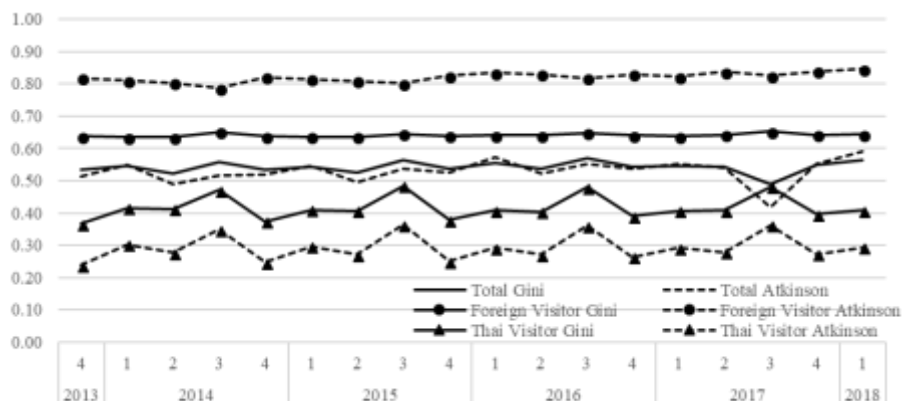


Figure 3: Trends of Gini Coefficient and Atkinson Index of Thailand’s Hidden Gems (Conglomeration)

Table 5: Structure of Tourism Revenue in Thailand Classified by Thailand’s Hidden Gems

	Total		Foreign Visitor		Thai Visitor	
	Revenue (Million Baht)	Share (%)	Revenue (Million Baht)	Share (%)	Revenue (Million Baht)	Share (%)
Bangkok	194,907.13	37.79	120,618.96	40.06	74,940.76	35.66
Major Tourism Related Sector	249,957.94	48.46	171,396.95	56.92	76,452.30	36.38
Minor Tourism Related Sector	21,570.00	4.18	2,821.37	0.94	17,788.65	8.46
12 Cities of Thailand's Hidden Gems	18,251.34	3.54	2,553.79	0.85	15,027.51	7.15
12 Cities Plus of Thailand's Hidden Gems	19,013.41	3.69	1,784.92	0.59	16,236.42	7.73
Others	12,123.39	2.35	1,927.85	0.64	9,698.37	4.62
Total	515,823.21	100.00	301,103.84	100.00	210,144.01	100.00

Table 6: Inequality of Tourism Revenues in 8 Tourism Clusters (Conglomeration)

Year	Quarter	Total		Foreign Visitor		Thai Visitor	
		Gini	Atkinson	Gini	Atkinson	Gini	Atkinson
2013	4	0.5817	0.5462	0.7075	0.8246	0.4197	0.3154
	1	0.5930	0.5736	0.6779	0.8125	0.5064	0.3949
2014	2	0.5958	0.5454	0.6823	0.7924	0.5297	0.4101
	3	0.6269	0.5781	0.6939	0.7803	0.5777	0.4797
2015	4	0.5816	0.5472	0.7065	0.8252	0.4250	0.3204
	1	0.5912	0.5724	0.6775	0.8171	0.5077	0.3937
2016	2	0.5915	0.5470	0.6780	0.7967	0.5278	0.4084
	3	0.6305	0.5879	0.6970	0.7909	0.5897	0.4900
2017	4	0.5867	0.5571	0.6894	0.8308	0.4467	0.3376
	1	0.5928	0.5924	0.6783	0.8326	0.4960	0.3848
2018	2	0.5925	0.5673	0.6780	0.8143	0.5262	0.4069
	3	0.6327	0.6001	0.6970	0.8061	0.5863	0.4878
2019	4	0.5802	0.5615	0.6894	0.8320	0.4566	0.3516
	1	0.5811	0.5723	0.6702	0.8203	0.4943	0.3822
2020	2	0.6004	0.5832	0.6818	0.8237	0.5301	0.4134
	3	0.5589	0.4836	0.7017	0.8136	0.5874	0.4892
2021	4	0.5905	0.5755	0.6945	0.8393	0.4636	0.3586
	1	0.5980	0.6016	0.6815	0.8362	0.4881	0.3756

Gini Coefficient, Atkinson Index

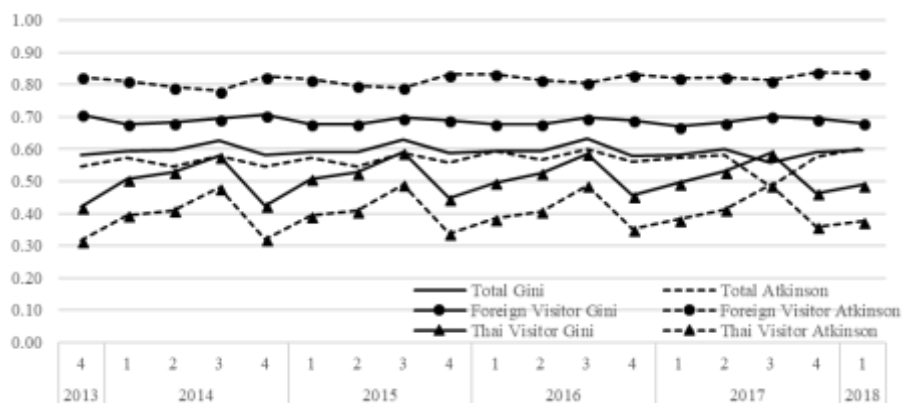


Figure 4: Trends of Gini Coefficient and Atkinson Index in 8 Tourism Clusters (Conglomeration)

Table 7: Structure of Tourism Revenue in Thailand Classified by Tourism Clusters

	Total		Foreign Visitor		Thai Visitor	
	Revenue (Million Baht)	Share (%)	Revenue (Million Baht)	Share (%)	Revenue (Million Baht)	Share (%)
Bangkok	194,907.13	37.79	120,618.96	40.06	74,940.76	35.66
Lanna Culture	30,359.55	5.89	9,405.47	3.12	19,745.05	9.40
Royal Coast	16,206.11	3.14	3,678.41	1.22	11,741.14	5.59
Active Beach	57,590.96	11.16	37,856.24	12.57	18,939.09	9.01
Andaman	126,203.01	24.47	102,540.70	34.05	23,734.83	11.29
South I-san	7,642.42	1.48	290.99	0.10	7,060.57	3.36
Culture in Central	5,816.04	1.13	1,581.02	0.53	4,033.24	1.92
Khong River	3,496.97	0.68	297.74	0.10	3,045.33	1.45
Chao Phraya River	4,723.39	0.92	475.05	0.16	4,008.11	1.91
Others	68,877.63	13.35	24,359.25	8.09	42,895.90	20.41
Total	515,823.21	100.00	301,103.84	100.00	210,144.01	100.00

Table 8: Average Gini Coefficient and Atkinson Index (2013.4-2018.1)

	Total		Foreign Visitor		Thai Visitor	
	Gini	Atkinson	Gini	Atkinson	Gini	Atkinson
Whole Economy (77 Cities)	0.8417	0.8192	0.9352	0.9830	0.7380	0.6748
Tourism Related City (66 Cities)	0.8216	0.7921	0.9202	0.9740	0.7086	0.6273
Thailand' Hidden Gems (Cities)	0.8012	0.7622	0.9053	0.9674	0.6810	0.5839
Thailand 's Hidden Gems (Conglomeration)	0.5421	0.5295	0.6414	0.8206	0.4169	0.2933
Tourism Cluster (Cities)	0.8349	0.8341	0.9029	0.9729	0.7481	0.6960
Tourism Cluserter (Conglomeration)	0.5948	0.5663	0.6879	0.8160	0.5088	0.4000

4. CONCLUSION

This paper employed Gini Coefficient and Atkinson Index to assess the degree of inequality distribution of tourism revenues. The results indicate that the inequality of tourism revenue is high especially in the case of revenue from foreign visitor. This is the nature of tourism revenue that depends on the tourism attraction and activities. However, the results based on the conglomeration of tourism promoting and development campaign found that the degree of inequality of tourism revenue usually decline by grouping both Thailand’s hidden gems and tourism clusters. The inequality of tourism revenue of total revenue and Thai visitor are

moderate when measured by conglomeration. However, the inequality always high in case of foreign tourism revenue. This paper concluded that the inequality of tourism revenue is nature and obliterated especially in city level. Moreover, following the finding, the policy to enhance the declining of the inequality of tourism revenue should be (1) implemented as the conglomeration city in order to reduce the variation between cities because the conglomeration could alleviate the difference among cities (2) introduced the unseen destination especially in low tourism revenue city to enhance the distribution of tourism revenue, (3) promoted the new tourism routes to foreign visitors to provide the alternative destination and (4) supported the tourism value chain to push a strong linkage with local and neighbor cities.

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