



BACKGROUND PAPER

Wellness for Happiness in developing Asia

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WELLNESS FOR HAPPINESS IN DEVELOPING ASIA

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ABSTRACT

The wellness economy in Asian countries can contribute potentially to the national happiness, either through its contribution to economic performance or through noneconomic channels. This paper exploits recent data on six wellness sectors from the Global Wellness Institute and self-reported happiness from the Gallup World Poll to assess the wellness-happiness nexus empirically. Simple Ordinary Least Squares (OLS) regressions show that workplace wellness spending by employers is statistically and economically significant for national happiness, whether globally or within developing Asia. Wellness real estate development and spending on recreational physical activities are correlated also with national happiness, but only in the global sample.

KEYWORDS

wellness, happiness, subjective well-being, Asia

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I. INTRODUCTION

Interests in happiness has been growing since Richard Easterlin showed that income growth may not always lead to higher level of self-reported happiness (Easterlin 1974). Over the past few decades, the economics of happiness is one of the fastest-growing fields in economics, particularly in the last 10 years (Clark 2018, Clark et al. 2018, and Frey 2020). In addition to the exploding increase of academic research on happiness, there is a growing interest on happiness among policy makers worldwide. Gradually, happiness is viewed as a new and important measure of people's well-being and policy target (Global Happiness Council 2018), which is complementary to traditional income measures.

In July 2011, the United Nations General Assembly passed a historic resolution "Happiness: Towards a holistic approach to development, A/RES/65/309". Member countries are invited to measure their citizens' happiness and to use this to guide their policies. In April 2012, the first United Nations high-level meeting on happiness and well-being were hold, chaired by the Prime Minister of Bhutan. The first World Happiness Report edited by John F. Helliwell, Richard Layard, and Jeffrey Sachs was released during the meeting, followed by a series of annual reports. In 2013, the Organisation for Economic Co-operation and Development (OECD) published its guidelines on the measurement of well-being to encourage and facilitate government actions (OECD 2013).

At the national level, the Office of National Statistics (ONS) in the United Kingdom has sampled citizens of the United Kingdom randomly on happiness since 2012 and used the data to guide policy making. The Government of New Zealand has been engaged in a Quality of Life Project to monitor well-being, and study how to use it more systematically for policy analysis. In February 2016, the United Arab Emirates created the Ministry of State for Happiness and Wellbeing and appointed Her Excellency Ohood bint Khalfan Al Roumi as the first minister. The role of the ministry was to harmonize government plans, programs, and policies to achieve a happier society. Happiness is also becoming a higher priority in developing Asia.¹ Bhutan is probably the best

¹ Developing Asia consists of the following 45 countries (or regions), which are further categorized into five groups by the Asian Development Bank: (i) Central Asia comprises Armenia, Azerbaijan, Georgia, Kazakhstan, the Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan; (ii) East Asia comprises Hong Kong, China; Mongolia; the People's Republic of China

known example where the government has adopted the Gross National Happiness (GNH) Index as its national objective. The 14th Congress of the People's Republic of China (PRC) has laid out the people's happiness (*xingfu gan*) as one of its strategic national goals. The current Seoul metropolitan government turned to sustainable development and happiness as its main goals.

Among the many factors fostering national happiness, the booming wellness activities may contribute to happiness, either through its contribution to employment and economic growth, or through noneconomic channels. This paper aims to introduce the happiness and development of wellness industry in developing Asia, and explore the relationship between wellness industry and happiness.

Recently, the Global Wellness Institute (GWI) defined wellness as “the active pursuit of activities, choices, and lifestyles that lead to a state of holistic health.” (Yeung and Johnston 2018). It is similar to what the National Wellness Institute gives: “wellness is an active process through which people become aware of, and make choices toward, a more successful existence.” Wellness industry is defined as “industries that enable consumers to incorporate wellness activities and lifestyles into their daily lives.” (Yeung and Johnston 2018). Compared with the traditional health care industry which mainly falls on disease treatment and control, the wellness industry is proactive and preventive.

As discussed above, wellness is the process of seeking health and well-being. Thus, it is distinguished from the concept of health or well-being, which is an outcome or a static state of being. The World Health Organization (WHO) defines health as a state of complete physical, mental, and social well-being, and not merely the absence of disease or infirmity. Well-being generally include objective well-being (such as gross domestic product [GDP], gross national income [GNI], and Human Development Index [HDI]) and subjective well-being (which is often called “happiness”, including life evaluations, eudaimonia, and emotions).

(PRC); the Republic of Korea (ROK); and Taipei, China; (iii) South Asia comprises Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka; (iv) Southeast Asia comprises Brunei Darussalam, Cambodia, Indonesia, the Lao People's Democratic Republic, Malaysia, Myanmar, the Philippines, Singapore, Thailand, Timor-Leste, and Viet Nam; and (v) The Pacific comprises the Cook Islands, the Federated States of Micronesia, Fiji, Kiribati, the Marshall Islands, Nauru, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu.

The growing interest in wellness reflects Asia's transformation into an overwhelmingly middle income or above region with many high-income countries. There were only two countries (Afghanistan and Nepal) which were categorized as low-income countries in 2016, according to World Development Indicators. Urbanization rate is also relatively high compared with other developing regions, as almost half of Asian countries are above the world urbanization level. The large size middle income and upper class who are mainly living in urban areas aspire to a higher quality of life (QOL). However, there are many unhealthy elements in their life, such as automobile dependency, consumption of processed food, and exposure to pollution. Their demand for wellness naturally arose from their desire for better life and purchasing power.

The rest of the paper is organized as follows. Section II briefly introduces the concept and measurement of happiness. Section III introduces the current status of happiness in developing Asia and compares it with other regions. Section IV presents the distribution of wellness sectors across Asian countries. Section V discusses the theoretical nexus between wellness and happiness and reviews the literature. Section VI conducts empirical analysis using cross-sectional data at the country level, globally, and in developing Asia. Section VII draws conclusions.

II. MEASUREMENT OF HAPPINESS

Happiness is often used equally to "subjective well-being", which refers to a range of individual self-reports of life assessments and moods. Among various measures of happiness, the primary distinction are made between cognitive life evaluations and affective well-being (e.g., Helliwell and Wang 2012 and Kahneman et al. 1999). Eudaimonic measures, linked to the idea of having a sense of meaning or purpose in life, are collected sometimes also in some surveys.

Cognitive life evaluations refer to people's overall evaluation of their lives as a whole. This sort of question may ask how satisfied people are with their lives as a whole, or how happy in general, or how people position their lives in a life ladder. For example, the survey question for life satisfaction in the Gallup World Poll is "All things considered, how satisfied are you with your life as a whole these days? Use a 0 to 10 scale, where 0 is dissatisfied and 10 is satisfied." The answer might also be on 1–5 points scale or on 1–4 points scale in other surveys. The life ladder question

in the Gallup World Poll is: “Please imagine a ladder with steps numbered from zero at the bottom to ten at the top. Suppose we say you personally feel you stand at this time, assuming that the higher the step the better you feel about your life, and the lower the step the worse you feel about it? Which step comes closest to the way you feel?” This sort of question was first designed by Cantril (1965), thus the life ladder score is also called Cantril ladder, or Cantril’s Self-Anchoring Striving Scale. The overall happiness question is, for example in the European Social Survey: “Taking all things together, how happy would you say you are?” The answer is on the 0 – 10 scale, where 0 refers to “extremely unhappy”, and 10 for “extremely happy”.

Measures of affective well-being are often multi-item scales on people’s emotion in a recent time period such as last hour, yesterday, or last week. Generally, it covers the experience of both positive and negative emotions. For example, the following questions on positive and negative affect have been used in the Gallup World Poll: “Did you experience the following feelings during a lot of the day yesterday? How about enjoyment?”, “Did you smile or laugh a lot yesterday?”, “How about happiness?”, “How about worry?”, “How about stress?”, “How about anger?”, and “How about sadness?” The answer to each item is binary, where 1 is for “yes” and 0 is for “no”.

In practice, the Office of National Statistics (ONS) in the United Kingdom started to collect data on happiness since 2012, including the following four questions to cover all three broad dimensions of happiness:

- (i) Overall, how satisfied are you with your life nowadays? (evaluative well-being)
- (ii) Overall, how happy did you feel yesterday? (positive affect)
- (iii) Overall, how anxious did you feel yesterday? (negative affect)
- (iv) Overall, to what extent do you feel the things you do in your life are worthwhile? (eudaimonic well-being).

Published in 2013, OECD’s Guidelines on the Measurement of Subjective Well-being (OECD 2013) also suggested that all three broad dimensions shall be covered, though they recommend survey questions on worry and depression for negative affect, rather than anxiety in the ONS surveys in the United Kingdom.

There have been debates over which of these dimensions of well-being that we shall pay more attention to. Recent studies tend to give the highest priority weighting to evaluative well-being, as they are more attached to the deeper features of a good life.

III. HAPPINESS IN DEVELOPING ASIA

The largest comparable happiness data in developing Asia are available from the Gallup World Poll. The measure of happiness is one of the evaluative measures, namely, Cantril ladder, which have been often used for international happiness rankings in the United Nations World Happiness Report series. To match the wellness data, I take the national average of happiness from the Chapter 2 of the World Happiness Report 2019 (Helliwell et al. 2019), which is mainly based on the Gallup surveys between 2016 and 2018.

Among the 45 countries in developing Asia, we have happiness data in 30 countries. Specifically, no happiness data are available for the Pacific region. Figure 1 shows the ranking of happiness scores in the 30 developing Asian countries. We have two important findings from the happiness rankings.

First, there are large variations of happiness scores within the 30 developing Asian countries. Taipei,China and Singapore are the top two, while India and Afghanistan are the bottom two. The gap between the highest and the lowest is quite big: Taipei,China's happiness score is about twice as large as Afghanistan's.

Second, the happiness levels in developing Asia are relatively low in the world, according to the Chapter 2 of the World Happiness Report 2019. On the scale of 0–10, the average score in developing Asia is 5.17, which is lower than the global average of 5.46.² It is only higher than the scores in Africa and the Middle East, but lower than other regions in the world. Taipei,China, being the happiest in developing Asia, is still lower than the happiest country (Finland) by the magnitude of 1.323. The country with the lowest score in developing Asia is Afghanistan (3.203),

² These are unweighted averages. The adult population weighted averages for developing Asia is 4.82 and for the world is 5.23.

which also ranks as the third lowest in the world and only slightly higher than South Sudan (2.853) and Central African Republic (3.083).

IV. WELLNESS INDUSTRY IN ASIA

National-level data for wellness industry are available in 2017 for six sectors, including thermal/mineral springs, spas, wellness tourism, workplace wellness, wellness real estate, and physical activity, from the GWI. To compare the relative size of each wellness sector across countries, I calculate per capita values for each sector. They are per capita hot spring revenue (\$), per capita wellness tourism expenditures (\$), per capita workplace wellness spending by employers (\$), per capita spa revenue (\$), per capita wellness real estate construction value (\$), and per capita expenditures on recreational physical activities and enabling sectors (\$). Among the 45 countries in developing Asia, there are no wellness data in the Cook Islands, Nauru, and Tuvalu, which are then excluded from the analysis.

Figures 2–7 illustrate the ranking of per capita values for the 42 developing Asian countries. Figure 2 shows the ranking of per capita hot spring revenue by country. The values in this sector are quite small in magnitude for all countries, as the availability of hot springs may depend highly on geographic conditions. The highest one is Taipei, China, with the per capita value of \$18.45. The PRC takes the second position with value only \$12.59 and the Republic of Korea (ROK) the third position with value \$6.53. In addition, 15 countries record zero in this sector (mostly island countries), and 14 countries have values less than \$1. Thus, we may conclude that this sector's contribution to whole economy in developing Asia would be rather small, if not negligible.

Figure 3 shows the ranking of per capita spa revenue. Among them, the Maldives and Palau are the top two, with much higher values than the rest of the countries. Moreover, the magnitude is quite large. For example, the Maldives' per capita revenue is \$484.66. Clearly, this is because these two countries are famous destinations for vacation. Similar to the spa sector, per capita wellness tourism expenditure is quite high also in Palau with \$5,150.85 and the Maldives with \$1,890.35. Vanuatu with value of \$1,009.04, Fiji with \$807.47, Samoa with \$533.16, and Tonga

with \$504.30 follow. These facts again tell that tourism is a very significant part of the whole economy in those countries. Countries in Central Asia are generally very low in these two sectors. Per capita workplace wellness spending by employer exhibits different pattern from spa and wellness tourism. Singapore; Hong Kong, China; the ROK; Taipei,China; and Brunei Darussalam are the top five, way higher than the rest of the countries. Per capita wellness real estate construction shows similar pattern, four of the top five countries overlapping with those top five for workplace wellness spending. In addition, wellness real estate is not existent in 31 countries at all, showing the huge disparity in this sector across countries. The top five countries in terms of per capita expenditures on recreational physical activities and enabling sectors are exactly the same as the top five for workplace wellness spending, with different orders among the top five. The size of per capita spending on recreational physical activities are quite large among the top countries. For example, the value for Hong Kong, China is \$556.04; for the ROK \$455.91; and for Taipei,China \$327.95. Positive spending is found in all countries, even in the lowest country (Afghanistan, with the value \$3.45). Moreover, per capita values in this sector and wellness tourism sector are often the highest two of the six sectors in many countries, which shows the general significance of these two sectors in developing Asia.

The pattern observed from these three sectors (workplace wellness spending, wellness real estate, and physical activities) is closely related to the higher stage in economic development in those countries. Employers in a richer economy are likely to spend more on their employees as part of employee benefits; the supply and demand of wellness real estate is likely to be higher in richer economies; people in richer economies are more prone to spend on recreational physical activities.

In summary, the levels and distributions of the six wellness sectors in developing Asia are quite uneven, either across sectors or across countries, and closely related with economic and geographic conditions. Specifically, there are three observations. First, spa and wellness tourism sectors are particularly important components of economy for those island countries and are also non-negligible in many countries. Second, the size of workplace wellness, wellness real

estate, and physical activities are closely related with the levels of economic development. Lastly, as a fairly small sector, hot spring is related with geographic and economic conditions.

V. WELLNESS FOR HAPPINESS: CONCEPTUAL FRAMEWORK AND LITERATURE

The development of wellness sectors is expected to play an important role in the pursuit of higher QOL, since it might contribute to those important determinants of happiness or affect happiness directly. These important determinants of national happiness might include economic growth, employment, inflation, personal health, and leisure, among others (e.g., Di Tella et al. 2001 and 2003, Helliwell and Wang 2012, and Helliwell et al. 2019).

The development of wellness industry may contribute to economic output which may further improve happiness. As shown in section IV, wellness tourism and spa are very important components of national economy in some island countries, such as the Maldives and Palau. For example, the tourism sector contributed to about 20% of the Maldives' total GDP in 2016 and 2017 and was even higher in the past (as high as 27.1% back to 2006) (National Bureau of Statistics, Maldives 2018). The development of these wellness sectors that are mainly serving foreign tourists is highly correlated with employment and economic growth in those countries.

Many wellness sectors, such as recreational physical activities, worksite wellness programs, and spa therapy, are linked with better health outcomes, which is an important determinant of happiness. Cohen et al. (2017) show that retreat experiences lead to significant improvements in several dimensions of health and well-being that are maintained for 6 weeks. Similar results are found in Gilbert et al. (2014). Klick and Stratmann (2008) find that spa therapy leads to a significant reduction in both absenteeism and hospitalization using German longitudinal data. Desveaux et al. (2015) find that yoga practice can lead to significant improvements in exercise capacity and health-related QOL in a meta-analysis.

Workplace wellness programs are workplace-based efforts that enhance awareness, change behavior, and create environments that support “good” health practices (Aldana 2001). Workplace wellness spending may affect employees' happiness through better health behaviors, improved health, or by creating a better workplace environment. Song and Baicker (2019) find

that a workplace wellness program leads to significantly higher rates of positive health behaviors, such as engaging in regular exercise and actively managing weight, in a large United States warehouse retail company. Mills et al. (2007) find that a health promotion program on employee health risks produced sizeable changes in health risks and productivity. Musich et al. (2015) find that a well-managed comprehensive health promotion program can continue to yield significant health outcomes.

A recent meta-analysis shows that workplace wellness program leads to reduction of medical costs and absenteeism costs (Baicker et al. 2010). Besides the majority of studies on workplace wellness that rely on observational comparisons between participants and nonparticipants (for reviews: Pelletier 2011 and Chapman 2005 and 2012), there are also many randomized control trials that are focused on certain wellness activities (Charness and Gneezy 2009, Royer et al. 2015, and Volpp et al. 2011) or comprehensive workplace wellness program (Jones et al. 2019 and Song and Baicker 2019).

Above, I have shown relative fruitful evidence that wellness is linked with the determinants of happiness, such as health, however, the studies examining the direct correlation between wellness and happiness are fewer. Health activities are one of the wellness activities being relatively more explored (e.g. see the review in Zhang and Chen, 2019). Lathia et al. (2017) show that physical activity contributes to happiness for both adolescents and adults, by using a smartphone app to record information on individual physical activities and happiness. Richards et al. (2015) find positive correlation between physical activity and happiness in 15 European countries, which sample includes both or both adolescents and adults. Wang et al. (2012) find similar impact in Canada. There are also some studies being just focusing on adolescents and find significant impact (Min et al. 2017, Norris et al. 1992, and Straatmann et al. 2016). Physical activity even works for those disabled adolescents. For example, Maher et al. (2016) show that physical activity is a key predictor of QOL and happiness in children and adolescents with cerebral palsy.

There are also studies on the well-being effect of some specific physical activities. Wang et al. (2014) find that Taiji, a form of mind-body exercise that originated from the PRC, has beneficial

effects on psychological well-being measures. Watanabe et al. (2001) show that 12-week water-based aerobic exercises significantly reduce the depression of seniors.

There are few studies showing the correlation between other wellness activities or wellness sectors and individuals' happiness. For example, Strauss-Blasche et al. (2000) find spa therapy improves emotion and health satisfaction among middle aged adults with health impairments.

VI. WELLNESS FOR HAPPINESS: EMPIRICAL ANALYSIS

Despite the scattered evidence which are mainly individual-level studies, there is no systematic evaluation on the impact of wellness activities and individuals' well-being, particularly at the macro level. Given that I only have data available for six wellness sectors, it is not feasible to empirically examine the correlation between overall wellness development and national happiness. I thus exploit the data available for the six wellness sectors to perform a preliminary empirical analysis on the relation between wellness sectors and national happiness.

First, I present the simple correlation between each of the six wellness sectors and national happiness. In the sample, there are 146 countries with data on both happiness and six wellness sectors in the global sample. However, there are only 29 countries with data in developing Asia. I will report the results using the global sample in Table 1, and then consider only developing Asian countries with limit number of observations, as reported in Table 2.

Table 1 shows a sizable and positive correlation between each wellness sector and the national level of happiness in the global sample. The coefficient of correlation ranges between 0.46 for log per capita hot spring revenue and 0.81 for log per capita workplace wellness spending by employer. The correlation between log per capita expenditure on physical activities and happiness is 0.8, which is the second highest among the six wellness sectors.

Table 2 shows similar pattern for each wellness sector's correlation with happiness in developing Asia. The values range between 0.3 for log per capita hot spring revenue and 0.65 for log per capita workplace wellness spending by employer. The correlation between workplace wellness and happiness is the highest in both global and Asian samples. However, the coefficients of correlation generally are smaller than corresponding values in Table 1, by the magnitude of

0.16 – 0.39. This result may suggest that wellness sectors are even more important for national happiness in the rest of the world.

Next, I conduct a preliminary empirical analysis on the correlation between wellness industry and happiness, using the following Ordinary Least Squares (OLS) model:

$$Happiness = \beta_0 + \beta_1 x + \beta_2 \ln gdp + \varepsilon,$$

where *Happiness* denotes national-level happiness score averaging over the period of 2016 and 2018, and x denotes the log value of each of the six wellness sectors. $\ln gdp$ is the natural log of GDP per capita in 2017, purchasing power parity adjusted in 2011 international dollar. GDP per capita is controlled for, as it is an important determinant of happiness, and it is likely also to be highly correlated with wellness industry. ε is the error term. β_1 denotes the coefficient of correlation between wellness sector and happiness. The summary statistics of variables for the global sample, and for developing Asia are reported in Table 3.

Table 4 reports the OLS coefficients and robust standard errors (in brackets) for the global data. There are 12 columns in total, grouped into six batches, mapping to the six wellness sectors respectively. The odd columns do not control for log GDP per capita, to show the raw correlation between each wellness sector and happiness. Nine region dummies are controlled for in all columns, but their coefficients are not reported to save space.

Columns (1) and (2) report the coefficients of log per capita hot spring revenue, for the model without and with log GDP per capita, respectively. In both cases, the coefficients are positive, but not statistically significant at conventional significance level. This is not surprising, as we show in the previous section, hot spring is a quite small sector. It is very unlikely to find a significant contribution to national happiness.

Columns (3) and (4) are for log per capita spa revenue. The coefficient is 0.19 and significant at 0.001 in the model without controlling for GDP per capita, showing that the spa revenue is positively correlated with happiness. However, once we control for GDP per capita, as shown in column (4), the coefficient reduces to 0.04 and becomes insignificant. The next two columns for log per capita wellness tourism expenditures show the same pattern. This may tell that the impact of spa and wellness tourism on happiness mainly goes through their contribution to

economic growth. This is consistent with the fact that spa and wellness tourism revenue is quite high in the few island countries where their tourism sector mainly targets foreigners, while is generally low in other countries. Foreigners may enjoy the direct happiness benefit, while local residents enjoy it through the contribution to economic performance.

Columns (7) and (8) present coefficients for log per capita workplace wellness spending by employers. Consistent with existing micro evidence that workplace wellness programs promote health behaviors and health (e.g., Mills et al. 2007, Musich et al. 2015, and Song and Baicker 2019), I find significant impact of workplace spending on national happiness. The coefficient is 0.27 and significant at the 0.001 significance level in the simple model. The coefficient reduces by about half to 0.15 after controlling for GDP per capita, but remains significant at the 0.05 significance level. This implies that, even if we partial out the impact going through its contribution to GDP per capita, workplace wellness spending still has impact on happiness. The coefficient means that, for a 1% increase in per capita workplace wellness spending, national happiness will increase by 0.0015 units. In other words, if the per capita workplace wellness spending doubles (e.g., from world average \$10.83 to \$21.66), happiness will increase by 0.15 unit, which is about 0.13 standard deviation.

Similar pattern is observed for wellness real estate construction in columns (9) and (10): the significant coefficient of log per capita wellness real estate construction value reduces from 0.40 to 0.22 after controlling for GDP per capita, which may imply that wellness real estate sector affects happiness other than its contribution to GDP per capita.

Column (11) shows that expenditures on recreational physical activities are significantly correlated with happiness, with the coefficient 0.43. However, once controlling for GDP per capita in column (12), the coefficient reduces to 0.30, but still significant at 0.1 significance level ($p=0.054$). Note that there is a very high correlation between per capita expenditures on recreational physical activities and GDP per capita ($r=0.94$); the standard errors in this model could be potentially inflated. The coefficient 0.30 implies that a 1% of increase in its values is associated with 0.003 unit increase in happiness level, which is bigger than the impact of wellness real estate and workplace wellness spending. It means also that, if the per capita expenditures

on recreational physical activities doubles (e.g., from world average of \$137.36 to \$274.72), happiness will increase by 0.30 unit, which is about 0.26 standard deviation. This finding is in line with Lathia et al. (2017) and Richards et al. (2015), who show that physical activities contribute to happiness in micro-data analysis.

In Table 5, I conduct the same analysis as in Table 4, but restricting the sample to developing Asian countries. The sample size reduces to 29. This small sample size alarms that we shall interpret the results with caution. Columns (1)–(6) show that hot spring revenue, spa, and wellness tourism are not correlated with happiness, no matter whether or not controlling for GDP per capita. The results for hot spring are the same as the case of global sample, confirming the marginal influence of this sector. The raw impact of spa and wellness tourism disappears, which may imply its limit contrition to economy in developing Asia, as very few island countries record high values. In contrast, workplace wellness spending, wellness real estate construction, and expenditures on recreational physical activities remain significant in the model without controlling for GDP per capita, as reported in columns (7), (9), and (11). However, after controlling for GDP per capita, only workplace wellness spending remains significant, as shown in column (8). Even with such a small sample size, we still observe a strong correlation between workplace wellness spending and happiness.

VII. CONCLUSIONS

Wellness economy has become an important component of economy in many developing Asian countries. However, the lack of detailed information on the overall size and distribution of wellness sectors largely constrain our understanding of its contribution to people's well-being.

This paper exploits the recent data on six key sectors of wellness economy (specifically, hot spring, spa, wellness tourism, workplace wellness, wellness real estate, and recreational physical activities and enabling sectors) to present the distribution of wellness economy within developing Asian countries. Data from the GWI on the six wellness sectors show that the distribution across sectors and countries are quite uneven in Asia. Specifically, spa and wellness tourism sectors particularly are important components of national economy for a few island

countries, and are also non-negligible in many other countries. The size of workplace wellness, wellness real estate, and physical activities are tightly correlated with the levels of economic development. Hot springs is a fairly small sector in most Asian countries.

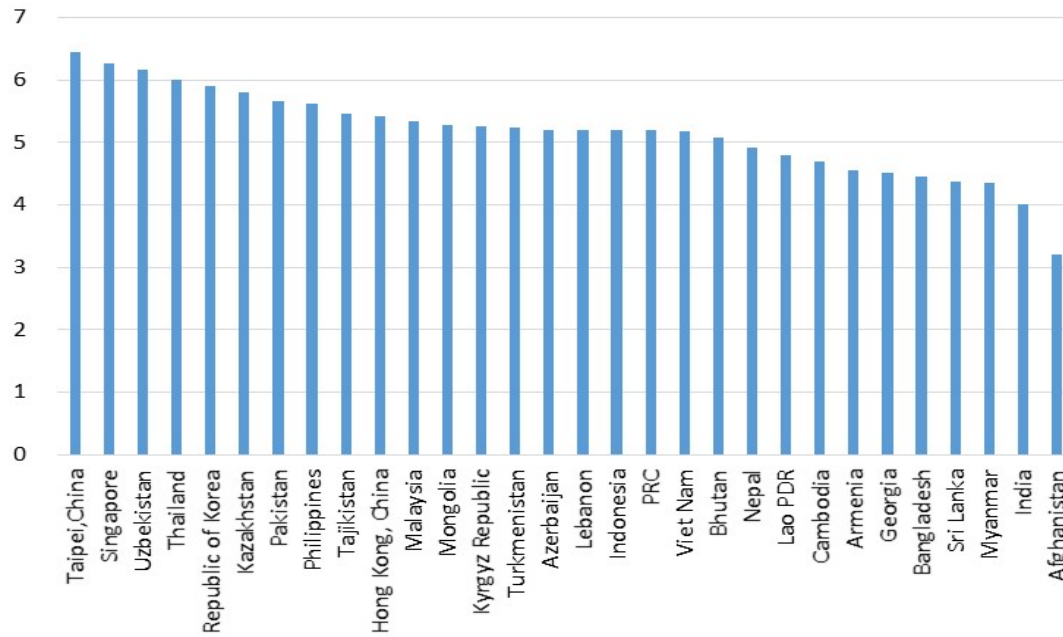
I then follow the happiness literature to use happiness as the indicator of well-being, to explore the well-being impact of wellness economy. Specially, Gallup World Poll's survey on Cantril ladder (on the scale of 0–10) is used to measure happiness, as in the United Nations World Happiness Report series. The happiness scores in most Asian countries are relatively low, compared with Scandinavian countries. The variations of happiness within Asian countries are also big. The happiness in the top performer Taipei, China is about double of the lowest one, Afghanistan.

The simple OLS analysis, based on cross-section data at the country level, shows that five of the six sectors (except hot springs) are significantly correlated with national happiness in the global sample, when not considering GDP per capita. After controlling for GDP per capita, three sectors (including workplace wellness, wellness real estate, and recreational physical activities and enabling sectors) are still significantly correlated with national happiness, statically and economically. When I restrict further the analysis to the 29 observations in developing Asia, workplace wellness spending by employers are still very significant. Based on national data, the preliminary analysis in this paper shows that, at least, some sectors of wellness economy are closely related with national happiness. However, more rigorous analysis is needed in the future when more detailed wellness data are available.

VIII. KEY TAKEAWAYS

1. Happiness in developing Asia is relatively low compared with other regions in the world.
2. Spas and wellness tourism sectors are important particularly for a few island countries.
3. The sizes of workplace wellness, wellness real estate, and physical activities are tightly correlated with the levels of economic development in developing Asia.
4. Hot springs is a fairly small sector in most Asian countries.
5. Workplace wellness spending is correlated positively with national happiness, either globally or in developing Asia.
6. Wellness real estate development and spending on recreational physical activities are positively correlated with national happiness globally, but not in developing Asia.

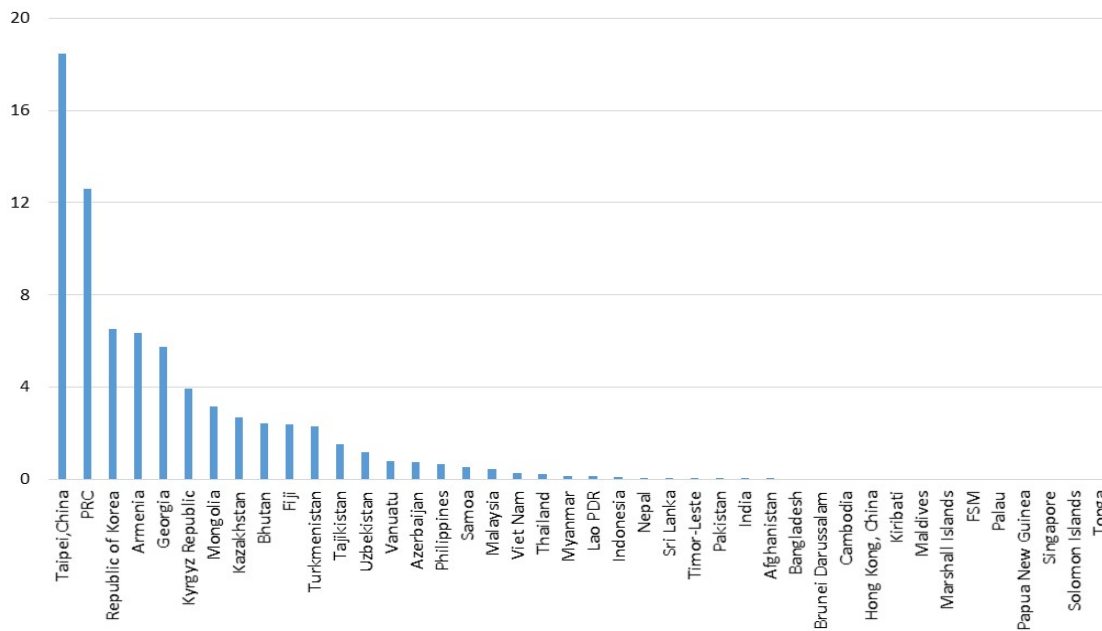
Figure 1: Ranking of Happiness



PDR = People's Democratic Republic, PRC = People's Republic of China.

Source: Helliwell et al. 2019.

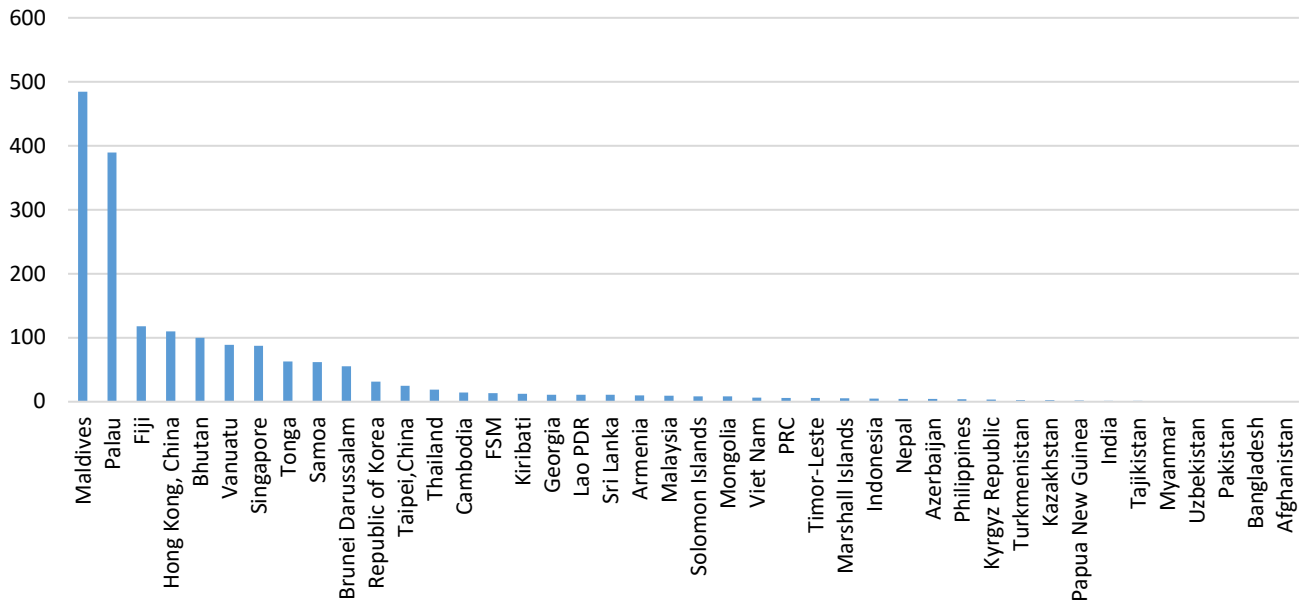
Figure 2: Per Capita Hot Spring Revenue, (\$)



FSM = Federated States of Micronesia, PDR = People's Democratic Republic, PRC = People's Republic of China.

Sources: Author's calculation using data from Global Wellness Institute.

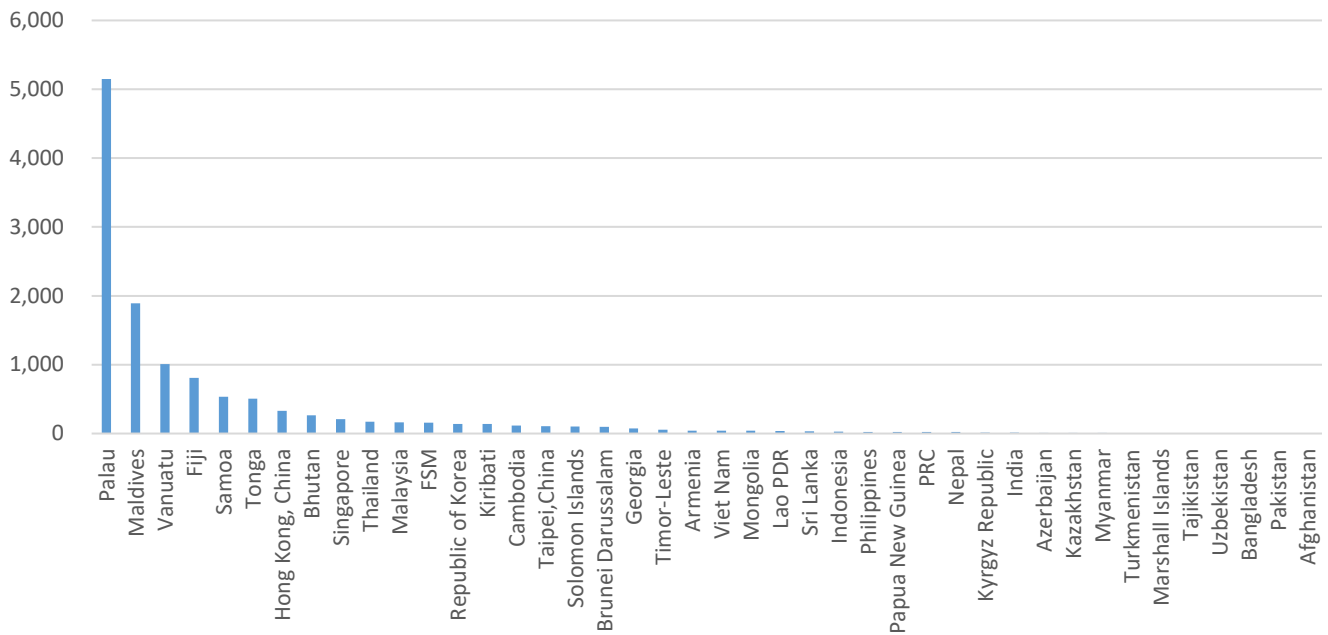
Figure 3: Per Capita Spa Revenue, (\$)



FSM = Federated States of Micronesia, PDR = People's Democratic Republic, PRC = People's Republic of China.

Source: Author's calculation using data from Global Wellness Institute.

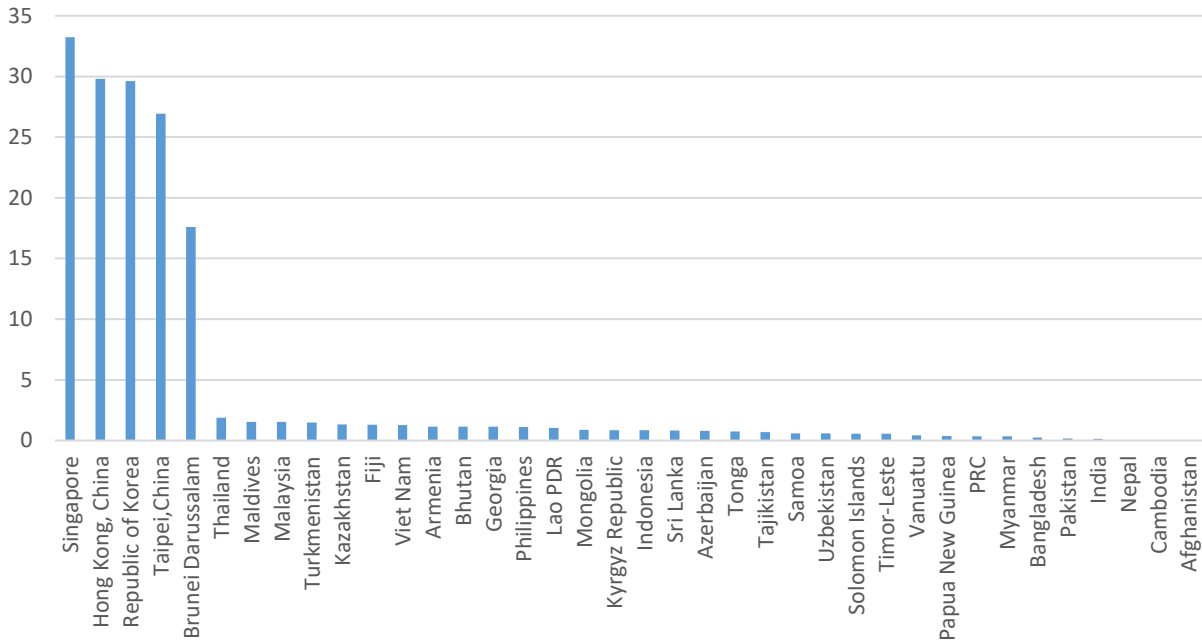
Figure 4: Per Capita Wellness Tourism Expenditures, (\$)



FSM = Federated States of Micronesia, PDR = People's Democratic Republic, PRC = People's Republic of China.

Source: Author's calculation using data from Global Wellness Institute.

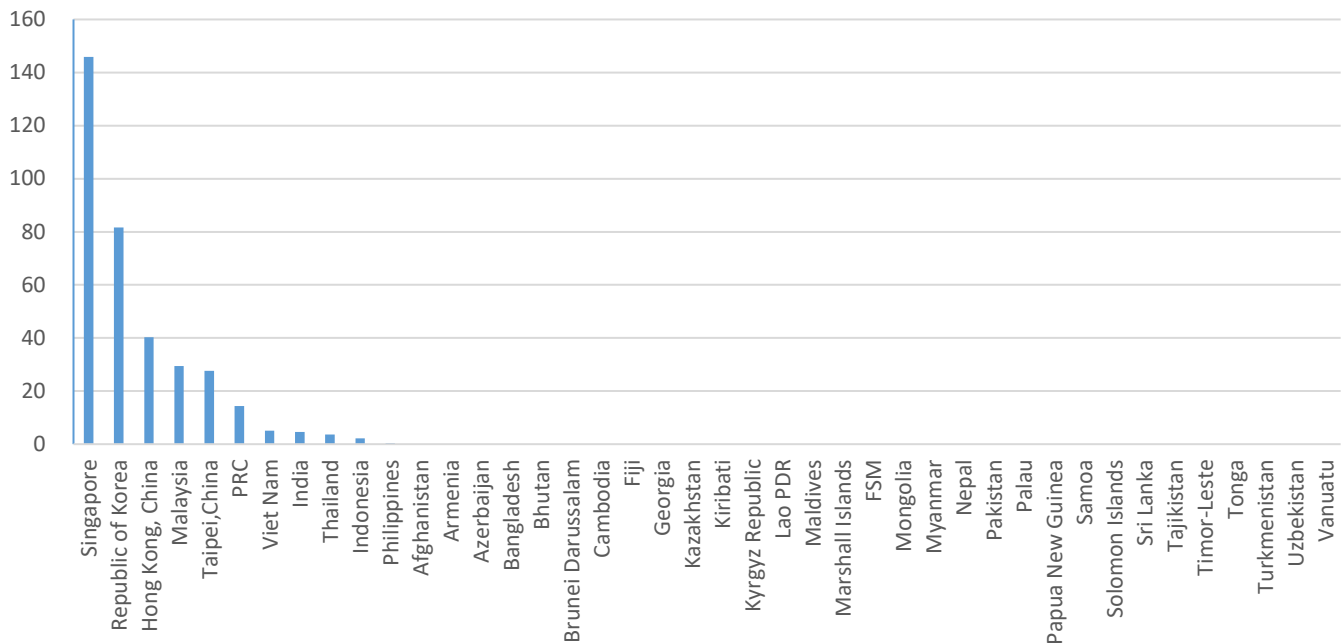
Figure 5: Per Capita Workplace Wellness Spending by Employers, (\$)



PDR = People's Democratic Republic, PRC = People's Republic of China.

Source: Author's calculation using data from Global Wellness Institute.

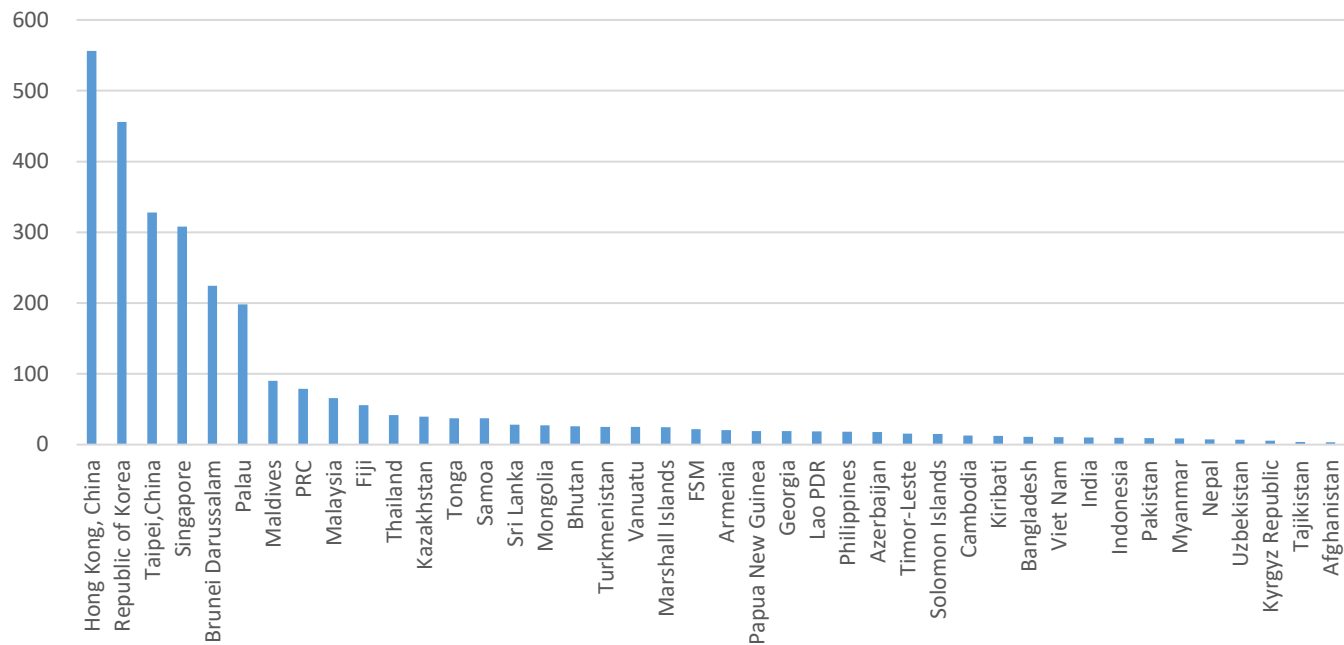
Figure 6: Per Capita Wellness Real Estate Construction Value, (\$)



FSM = Federated States of Micronesia, PDR = People's Democratic Republic, PRC = People's Republic of China.

Source: Author's calculation using data from Global Wellness Institute.

Figure 7: Per Capita Expenditures on Recreational Physical Activities and Enabling Sectors, (\$)



FSM = Federated States of Micronesia, PDR = People's Democratic Republic, PRC = People's Republic of China.

Source: Author's calculation using data from Global Wellness Institute.

Table 1: Correlation Matrix in Global Sample

	Happiness	Hot Spring Revenue	Spa Revenue	Wellness Tourism Expenditures	Workplace Wellness Spending by Employers	Wellness Real Estate Construction Value	Expenditures on Physical Activities
Happiness	1.00						
Hot spring revenue	0.46	1.00					
Spa revenue	0.71	0.59	1.00				
Wellness tourism expenditures	0.72	0.57	0.98	1.00			
Workplace wellness spending by employers	0.81	0.58	0.84	0.82	1.00		
Wellness real estate construction value	0.64	0.31	0.56	0.60	0.65	1.00	
Expenditures on physical activities	0.80	0.57	0.85	0.85	0.91	0.75	1.00

Note: The value of each wellness variable is the log per capita one.

Source: Author's calculation using data from Helliwell et al. (2019) and Global Wellness Institute.

Table 2: Correlation Matrix in Developing Asia

	Happiness	Hot Spring Revenue	Spa Revenue	Wellness Tourism Expenditures	Workplace Wellness Spending by Employers	Wellness Real Estate Construction Value	Expenditures on Physical Activities
Happiness	1.00						
Hot spring revenue	0.30	1.00					
Spa revenue	0.41	0.25	1.00				
Wellness tourism expenditures	0.33	0.20	0.96	1.00			
Workplace wellness spending by employers	0.65	0.37	0.70	0.62	1.00		
Wellness real estate construction value	0.40	0.15	0.53	0.54	0.68	1.00	
Expenditures on physical activities	0.45	0.35	0.72	0.68	0.83	0.82	1.00

Note: The value of each wellness variable is the log per capita one.

Source: Author's calculation using data from Helliwell et al. (2019) and Global Wellness Institute.

Table 3: Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
World					
Happiness	146	5.45	1.14	2.66	7.79
Per capita hot spring revenue (\$)	146	19.23	106.79	0.00	1,260.92
Per capita spa revenue (\$)	146	27.55	41.70	0.01	233.52
Per capita wellness tourism expenditures(\$)	146	151.99	296.50	0.03	2,030.41
Per capita workplace wellness spending by employers (\$)	146	10.83	17.22	0.01	73.99
Per capita wellness real estate construction value (\$)	146	19.16	52.15	0.00	384.93
Per capita expenditures on recreational physical activities and enabling sectors (\$)	146	137.36	209.78	1.92	1,084.30
GDP per capita (purchasing power parity adjusted in constant 2011 international \$)	146	19,382.06	18,858.64	753.82	93,101.78
Developing Asia					
Happiness	29	5.13	0.83	2.66	6.42
Per capita hot spring revenue (\$)	29	2.40	4.21	0.00	18.45
Per capita spa revenue (\$)	29	16.93	29.52	0.04	109.99
Per capita wellness tourism expenditures (\$)	29	66.43	86.76	0.08	330.04
Per capita workplace wellness spending by employers (\$)	29	4.81	10.26	0.01	33.24
Per capita wellness real estate construction value (\$)	29	12.24	31.13	0.00	145.93
Per capita expenditures on recreational physical activities and enabling sectors (\$)	29	74.98	143.40	3.45	556.04
GDP per capita (purchasing power parity adjusted in constant 2011 international \$)	29	16,163	19,307.51	1,758.47	87,760.37

Sources: Helliwell et al. (2019); World Bank. World Development Indicators online database. <https://databank.worldbank.org/source/world-development-indicators> (accessed 1 Oct 2019) ; author's calculation using data from Global Wellness Institute.

Table 4: Wellness and Happiness in the World

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Log per capita hot spring revenue	0.07 (0.06)	0.01 (0.05)											
Log per capita spa revenue			0.19*** (0.05)	0.04 (0.05)									
Log per capita wellness tourism expenditures					0.16*** (0.05)	0.03 (0.05)							
Log per capita workplace wellness spending by employers							0.27*** (0.04)	0.15* (0.06)					
Log per capita wellness real estate construction value									0.40*** (0.06)	0.22** (0.07)			
Log per capita expenditures on recreational physical activities											0.43*** (0.08)	0.30+ (0.15)	
Log GDP per capita		0.56*** (0.10)		0.52*** (0.10)		0.51*** (0.11)		0.31* (0.14)		0.44*** (0.11)		0.20 (0.19)	0.56*** (0.10)
Region dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	146	146	146	146	146	146	146	146	146	146	146	146	146
Adjusted R-squared	0.579	0.695	0.627	0.696	0.637	0.697	0.697	0.710	0.658	0.715	0.706	0.707	0.697

* p<0.10, * p<0.05, ** p<0.01, *** p<0.001.

Note: Robust standard errors are in parentheses.

Source: Author's estimates.

Table 5: Wellness and Happiness in Developing Asia

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Log per capita hot spring revenue	0.28 (0.17)	0.14 (0.14)										
Log per capita spa revenue			0.19 (0.11)	0.04 (0.12)								
Log per capita wellness tourism expenditures					0.14 (0.12)	-0.01 (0.12)						
Log per capita workplace wellness spending by employers							0.29*** (0.07)	0.33* (0.12)				
Log per capita wellness real estate construction value									0.21** (0.07)	-0.01 (0.11)		
Log per capita expenditures on recreational physical activities											0.28* (0.12)	-0.18 (0.18)
Log GDP per capita		0.43* (0.16)		0.47*** (0.11)		0.42** (0.13)		-0.08 (0.21)		0.48 (0.26)		0.70* (0.28)
N	29	29	29	29	29	29	29	29	29	29	29	29
Adjusted R-squared	0.055	0.257	0.078	0.235	0.139	0.239	0.402	0.382	0.128	0.235	0.174	0.249

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001.

Note: Robust standard errors are in parentheses.

Source: Author's estimates.

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