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## Welfare Index for Western Visayas, Philippines

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### ABSTRACT

This paper suggests an alternative welfare index for Western Visayas, Philippines. It composes the latest Human Development Index (HDI), and the recent figures on employment and underemployment rate, agricultural production and gross regional domestic product rate, Consumer Price Index, and inflation rate, purchasing power, Gini-coefficient ratio, poverty incidence, temperature, and population growth. The study collects these pieces of information on October 5-25, 2021. Using the arithmetic averaging, and following the scales of the HDI, the results show that Western Visayas' welfare is within 'Safe' condition and is slightly far from its goal of reaching the 'Secure' classification

### INTRODUCTION

Welfare of the people is the highest law. Societies living in harmony define a specific set of living outcomes best for everyone. Welfare is an effect of social preferences that results from a social decision mechanism. It is largely influenced by the society's characterization of what determines a comfortable living. Socialist and non-democratic economic systems diverge from the definition of a good life from market driven and democratic economies but, in common, share the idea of welfare as having 'accesses' to the essentials required in the system. The Human Development Index (HDI) created in 1990, emphasizes the improvement of people's capabilities to living, articulating liberty and freedom as the ultimate objective of national development together with economic growth (United Nations Development Programme). Aside from the HDI, other welfare constructs are also accessible and figures are basically country- data, but in this study, the welfare index, which is sculpted specific for Western Visayas, constitutes the Human Development Index (HDI), and the latest figures on employment and underemployment rate, gross regional domestic rate, agricultural production, Consumer Price Index, and inflation rate, purchasing power, Gini-coefficient ratio, poverty incidence, temperature and population growth. The variables chosen reflect both market and non-market statistics, such that, augmentation and complementariness of these measures ensures completeness.

### Statement of the Problem

This narrative is an indirect political assessment using socio-economic indicators to describe alternatively the welfare classification of Western Visayas, Philippines. Cognizant to the significance of HDI in measuring quality of life, and understanding its limitations, this paper suggests a complementary construct that serves

as a harmonizing welfare index, where, together with the HDI, can cover a few growths and development information, useful for Western Visayas. Assuming utilitarianism's view of elected political officials, this construct signals efficiency levels of local government units and guides them figure out what else to do to attain the region's overall welfare objectives.

### LITERATURE REVIEW

The study is essentially anchored on the idea of constructing an alternative measure of social welfare following the First and Second Fundamental Theorems of Welfare Economics. (Mas- Colell & al, 1995) Economists never stopped discussing concepts of welfare since Adam Smith and good materials abound along with the evolution of economic thought. From market equilibrium models, to utility models, up to social welfare functions considering aggregate demand and aggregate supply in mind, minimizing inflation, and enhancing wealth creation and employment, political debates on how to achieve welfare for everyone never cease to induce interest from the listening public. Equilibriums, a market clearing points, signify wellbeing since supply meets demand [ $Q_d - Q_s = 0$ ].  $Q_d$ , assumed to be a decreasing linear function of price and  $Q_s$ , assumed as an increasing function of price with a provision that supply is available at some a positive level, (Chiang & Wainwright, 2005), shall have a unique equilibrium value in  $P^*$  and  $Q^*$ . Consider the following linear functions:  $Q_d = \alpha - \beta P$  ( $\alpha, \beta > 0$ ) and  $Q_s = -c + \delta P$  ( $c, \delta > 0$ ), where:  $Q_d$  and  $Q_s$  denote quantity demand and supply respectively,  $\alpha$  is  $Q_d$  when the product is free,  $\beta$  is the slope of the curve,  $\delta$  is the slope of supply curve and  $-c$  is the Y intercept for supply curve, will have an equilibrium point,  $P^* = (\alpha + c) / (\beta + \delta)$  and  $Q^* = (\alpha - \beta c) / (\beta + \delta)$ . So long as there are no incentives for change, the

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equilibrium stays and is welfare. However, with the inclusion of taxes, to achieve balanced budget and in order to attain political objective of providing lump sum transfers, distortions occur and the equilibrium point adjusts. These distortionary taxes affect social welfare (Mas-Colell & al, 1995). If  $x_1^*(t), \dots, x_l^*(t), q_1^*(t), \dots, q_j^*(t), \dots$  and  $p^*(t)$  denote for consumption, production and price levels for good  $z$ , when the tax rate is  $t$ , then, these result in the reduction of the Marshallian surplus, as compared to when  $t=0$ . The distortion created is called a dead weight loss.

The Harberger triangle (Hines, 1999) estimates the deadweight, caused by government intervention in taxes and subsidies, which in turn, could trigger inflation. High prices misrepresent market information and affect future investment plans of businesses, disturbing consequently the hiring strategies of firms. Unemployment could rise. Moreover, unchecked monopolies or uncorrected externalities (Hines, 1999) could enlarge welfare losses even more. In practice, highly inefficient markets with poorly defined property rights and very profound market failures (National Bureau of Economic Research, 1998), could create several deadweight measures becoming trapezoids and not simply triangles. These reduce overall social happiness.

Happiness denotes welfare too.  $W(u_1, \dots, u_n) = \sum_{i=1}^n u_i$  is a classical Benthamite welfare function showing social preferences as the summed up individual utility functions. Jeremy Bentham and John Stuart Mill, forerunners of a political theory -Utilitarianism- identified 'good' with pleasure and held that one should maximise that 'good'. The total amount of tangible benefits experienced by the greatest number of people is social welfare. The principle of utility, construed as a measure of virtue, sets as a standard of right action for all in the society and the government (Stanford Encyclopedia of Philosophy, 2014). Although market equilibriums symbolise satisfaction, watching the beauty of a setting sun, breathing the freshness of a clean air, and enjoying the comforts of peace and conflict-less living for free, etc. is also happiness derived from these nonexcludable non-rivalrous goods. The government takes care of these needs.

Utility model's assumptions, such as in total social happiness or social utility curve, postulate that individuals are rational in their preference relations. Subject to wealth and income constraints of the society, the maximized utility is at the right combination of public goods and services, where iso-welfare curves are within the boundary of utility possibility frontier or when the frontier, is technically in tangent to its iso-welfare lines. (Varian, 2010) Increases in consumption and production raise overall welfare, on condition, that distribution is fair, and if not, the redistribution of the numeraire commodity by the benevolent dictator or by a central government achieves the objectives.

Changes in prices and incomes change welfare too. Compensating individuals to save them from the reduction

of welfare is a political approach to maintain social order. Families that suffer devastation from a calamity or violence need to be atoned and rehabilitated. A reduction in real income caused by inflation or unemployment reduces social welfare too and government augmentation like direct transfers and subsidies and government spending for public goods like roads and bridges etc., and government investments in education and health and etc, hope to restore it.

From this aggregation framework, national and international organizations assess peoples' welfare and start taking societies as a unit of analysis. The Human Development Index (HDI) in 1990 by the United Nations Development Programme, assesses the overall condition of a country, with the framework that summed up individuals' utilities outline the society's overall social preferences. It is the geometric mean of three composite indices for health, education, and income with this formula  $\sqrt[3]{(Le_i * E_i * Y_i)}$  and is used to genuinely 'counts' (United Nations Development Programmes, p.7, 2020) people's condition in evaluating development.

Matching social preferences, articulated in voting choices during elections with HDI trend overtime, could gauge how much of the winning candidates attuned country's policies to the wishes of the public. With Philippines' HDI showing improvements – from 0.593 in 1990 to 0.718 in 2019 (United Nations Development Programme, 2020), it appears that the social contract between the government and the public is healthily at work.

Another index that gauges welfare is the Multidimensional Poverty Index (MPI) of the United Nations Programme and the Oxford Poverty Human Development Initiative (OPHDI). This is a non-income-based measure that comprehensively assesses the extent of poverty and deprivation of people on various dimensions (Sustainable Development Solutions Network). Computing MPI is as follows: 1)  $H = q/n$ ; where  $q$  = is the number of people who are multidimensionally poor and  $n$  is the total population; 2)  $A = \sum_{i=1}^n u_i c_i(k) / q$  (United Nations Development Programme, 2020) where  $A$  is the intensity of poverty  $c_i(k)$  is the censored deprivation score of individual  $i$ ; 3)  $MPI = H * A$  (Santos, 2011).

Like the HDI, the MPI gathers information on health, education, employment to measure income and adds nutrition and sanitation in the list. A person is deprived if he has no access to one third of the indicators in various dimensions. The Philippines' MPI for 2016 and 2017 is 10.4 and 7.1 respectively stating that the Filipinos are most deprived in education, 36.6% and 36.9 % (Philippine Statistics Authority, 2022) respectively followed by health, water sanitation and employment.

Happy Planet Index (HPI) incorporates environmental sustainability as a barometer to wellbeing (New Economics Foundation, 2021). It establishes the link between humanity and ecological efficiency, similar with the objectives of Green GDP and Genuine Progress Indicator (GPI). Calculating HPI has the following formula:  $HPI = (\alpha * \text{life expectancy} * (\text{ladder of life} + \beta) - \lambda) /$



(ecological footprints+ $\epsilon$ ) where:  $\alpha = 0.75$ ,  $\beta = 2.92$ ,  $\lambda = 54.92$ ,  $\epsilon = 6.39$  as constants. In 2016, the Philippines is one of the top 20 Happiest Countries in the World (CNN Philippines, 2016), beating the United States, the United Kingdom and China.

Better Life Index (BLI) by the Organization for Economic Co-operation and Development (OECD) identifies wellbeing in eleven (11) areas of living – housing, income, jobs, community, education, environment, civic engagement, life satisfaction, health, safety, and work-life balance (OECD Better Life Index, n.d.). Inclusive Wealth Index (IWI) created by the UN Environment Program in cooperation with Kyushu University, on the other hand presents a comprehensive analysis of the productive base of a country from which derives all human and inter-generational wellbeing. Very central to IWI index is the calculation of shadow prices – a price of a good or a service that does not possess a market value like that of a natural capital.

## METHODOLOGY

Comparing the various measures using market information and aggregation techniques to taking societies as units of analysis of welfare, this piece of article suggests to create a construct for regional significance. The market measures and non-market measures chosen, collectively describe Western Visayas. Market measures are those, which effects are mainly market decisions with no or very limited government. Non-market measures are by products of market activities which consequences are beyond economic agents' control.

Thus, a central authority could assume direct responsibility if distributional niceties are desired. It should not be argued though that government has little or no influence in market activities. The differentiation is simply to delineate which areas require direct government attention and which are taken care by market operations. The data used in the study are the following:

The data collection period took on December 15 – December 30, 2021. Value intervals follow the cut off

**Table 1:** Indexes Collected and Classification Measures, Western Visayas, Philippines, 2021

Variables	Classification
1. HDI	Non-Market
2. Employment rate <sup>N</sup>	Market
3. Underemployment rate <sup>N</sup> [satisfied workers]	Market
4. Gross Regional Domestic Product Rate <sup>N</sup>	Market
5. Gini coefficient ratio	Non-Market
6. Purchasing Power <sup>N</sup>	Market
7. Population Growth <sup>N</sup> [population growth health]	Non-Market
8. Poverty Incidence <sup>N</sup> [out of poverty]	Non-Market
9. CPI <sup>N</sup>	Market
10. Average Inflation Rate <sup>N</sup>	Market
11. Temperature	Non-Market
12. Agricultural production	Market

points set by the HDI. The classification follows the higher values being better. Data going in opposite direction are recalculated to follow the designed classification. For example, if the index or the indicator value is 0.21 with the best condition being close to zero, its complement,  $Ac$ , assumes the value, thus,  $1-0.21 = 0.79$ , takes the final description for the region.

The average of all information to denote the Welfare Index for Western Visayas is, where is Welfare index for Western Visayas, the number of values and data set values, and it yields the qualitative interpretation of the following cut-off points; less than 0.550 [Unhealthy Condition], 0.550–0.699 [ Deficient Condition ], 0.700–0.799 [ Safe Condition], 0.800 or greater [ Secure Condition ]

## Definition of Terms

1. Welfare and iso-welfare curves - Welfare is a concept of wellbeing, largely influenced by the society's characterization of what determines a comfortable living. Welfare functions are the amount of goods and services preferred by members of the society subject to the available natural capital endowments of a region together with the new goods and services provided by firms from their production operations.

2. Population Growth rate - The average annual rate of change of population size during a specified period. The rate of population growth,  $r$ , between two time points,  $t_1$  and  $t_2$ , is calculated as an exponential rate of growth, conventionally expressed in percentage units per year:

$$r = 100 \ln (P_2 / P_1) / (t_2 - t_1)$$

Where  $P_1$  and  $P_2$  are the number of persons at times  $t_1$  and  $t_2$ , respectively, and the time interval  $(t_2 - t_1)$  is expressed in years (United Nations Organization) <http://www.un.org/esa/population/unpop.htm>

3. Poverty Incidence-the proportion of families/ individuals with per capita income /expenditure less than the per capita poverty threshold to the total number of families/individuals

$$P = (Q/n) * 100$$

where  $Q$ = number of families/ individuals with per capita annual income/expenditure less than the per capital poverty threshold;  $n$  = total number of families/ individuals (Philippine Statistics Authority)

4. Slutsky equation and wealth compensation – this is the decomposition of the change in economic behaviour in response to a change in economic environment. If there is a change in price, there are two effects; it alters the purchasing power (Varian, 2010) and relative cost of different goods.

5. Market measures – this is the description of the indices and indicators in question which values are results of market operations and having been uninfluenced by any agent or institution.

6. Non-market measures– this is the description of indices and indicators in question where some powerful institution or agency directs or influences its operation.

7. Pareto efficient – a desirable condition in exchange

where no one is better off without making someone else worse off. In this study, a Pareto improvement is more necessary to find, i.e. one is better off without having to make others worse off.

8. Laissez-faire – an economic activity where economic agents, by simply following price mechanism, are achieving market clearing condition. Prices determine how much resources should go toward a particular activity or sector, its allocative role. Moreover, prices follow the dollar votes on who receive more of a good or service, its distributive role. By price mechanism, resources and goods and services, by themselves find their direction with only the economic agents being the main actors.

9. Dead weight loss – an economic inefficiency in demand and supply; a concept suggesting a feeling of ‘disgust’ for both buyers and sellers; buyers pay more than the market clearing price and sellers sell with a rising marginal cost; good sold is less than what would have been absorbed by the market.

10. Unemployment rate and the Employment rate and – the unemployment rate measures the share of workers in the labour force who do not currently have a job but are actively looking for work, particular in this study, the Western Visayas (Economic Policy Institute) .

[https://www.epi.org/newsroom/useful\\_definitions/](https://www.epi.org/newsroom/useful_definitions/) The complement of this is the employment rate.

11. CPI, Inflation and purchasing power– the consumer price index measures the increase in the price given two periods compared. If the value is greater than 100, the excess is the increase in the price over time. If the value is less than a hundred, the difference is the reduction rate in price over time.

The inflation rate is the change in prices of goods contained in pre-determined baskets of goods. Purchasing Power is a measure of the real value of the peso in a given period relative to a chosen reference period. It is computed by getting the reciprocal of the CPI and multiplying the result by 100 (Philippine Statistics Authority).

12. Gini Coefficient Ratio – this is a measure of excellence in achieving equality among people in the society.. (Investopedia) <https://www.investopedia.com/news/measuring-inequality-forget-gini-go-palma/>. <https://towardsdatascience.com/clearly-explained-gini-coefficient-and-lorenz-curve-fe6f5dcdc07>

13. Gross Domestic Regional Product–this is the money value of all goods and services produced in Region VI.

14. Agricultural Production - this is the total output produced per unit agricultural land say a hectare. This includes cereals, fruits, legumes, citrus, condiments, fruit and leafy vegetables, and non-food and industrial crops, commercial fisheries, municipal fisheries and aquaculture <https://psa.gov.ph/tags/regional-agricultural-production-accounts>

## Presentation and Analysis of Data

### The Gross Regional Domestic Production

Table 2 presents the negative gross regional domestic

production rate, price instability and income inequality as areas needing immediate attention by local leadership. The pandemic affected overall performance. Low production is affected by climate instabilities as well. Severe typhoons completely devastate agricultural crop production, marine resources, and livestock investments. Small size farm holdings per owner or low soil fertility associated by excessive demand for food in response to population pressure adds to dwindling productivity. Rising population growth where youth, old age and unemployed dependency rates dominate the working-class population, as well as the current global health scare that shakes countries around the world worsen the condition. The region is no exemption from all these threats and possibilities. Graph 1 shows the time series of region's productivity from 2000 to 2020 and the decline is hugely evident in 2020.

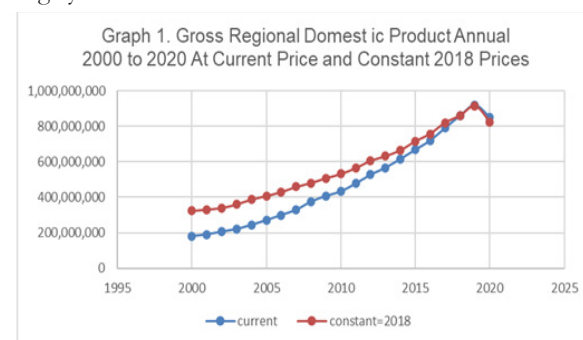


Figure 1: Gross Regional Domestic Production Graph

### Agricultural Production, Price Changes, Inflation, and the Purchasing Power

Total productivity declined [-9.70%] but agricultural production grew higher than the expected rate [4.7% in 2020 (Philippine Statistics Authority)]. This however did not compensate the loss of welfare caused by lockdowns and flow limits of goods and services. Slow circulation and distribution of farm outputs stunted the economic health of the area. Productivity could not translate to actual farm incomes if distribution, mobility, and storage of excess production is unstable. Trade flow of goods for 2020 was -29.0% and -35.0% (Philippine News Agency, 2021,) for outflow and inflow respectively on domestic markets.

The 30% increase in the CPI, means that given that basket of goods valued at 100 in 2012, the average household in Western Visayas needs P30.00 more to afford same basket of goods in 2021. A few assumptions need to be in place. One is that those goods purchased are the same on both years and that there are no sophistications in tastes and preferences influenced by social media and advertisements. These, however, do not stay fixed. Moreover, it assumes no changes in the structure of demand and of supply and no external effects of inflation occur. These too are inconceivable as automatic adjustments in the markets occur almost instantaneously. Other than the cost push and demand pull factors to inflation, prices also rise because of restricted distribution. Some areas have gluts and other areas experience scarcity.

This jacks up prices and abusive sellers taking advantage of the temporary market glitch push prices some more. Relaxing lockdowns on essential goods and services, allowing for more continuous flow of merchandize exchange eases the heat very quickly. The shift in the mode of exchange through online selling, also facilitates price stability. Instead of buyers going to the market creating crowds, it is now the sellers delivering products right before buyer's doorsteps. Business stays as usual.

On the other hand, cancelling pandemic from the model, the situation shows there is a need for more investments pump priming the agribusiness local economy. Intuitively when investments are nil, agricultural distribution mechanism is likely thin and opportunity income loss due to costs on storage, transportation, fixed wages, depreciation, interest payments and other overhead costs dries up family savings quickly. Agriculture sector's growth at 4.7% in 2020 (Philippine Statistics Authority) although promising is not enough to indicate that the region is 'breathing' well. Agricultural tourism investments and effective marketing strategies like digitally-aided farm markets cooperatives, domestic offshoring or outsourcing or regulated farm museum visits could bring more of the unemployed back to work.

### Employment Rates, Population Growth and Poverty Incidence

As population increases [1.14%], the needs per family increases and as adjustments take place in the way survival is faced, confronting health scare and natural calamities, many other things not bought before are considered essential this year - face masks, alcohol, laptop for online classes, allowance for house repairs, etc. At 4.3% inflation rate, the purchasing power of the peso is P0.76. If the threshold monthly income is P10,000.00 for a family of six (6), at P0.76 power to purchase, this income could only buy goods worth P7600.00, short of P2,400. This is not an insignificant shortfall. Poverty incidence in 2020 is 19.2% and Gini coefficient ratio is 0.567, which is at the boundary of severe income gap.

To do augmentation for wage shortfall, it is not therefore unlikely for any employed person, by 21% probability, to look for additional jobs. The current wage rate is already insufficient - either eaten by inflation rate or that their family sizes are getting bigger. The supply side of the region's economy is impressive because employment rate is at 90.9% but this figure may not provide a stable security blanket since the underemployment rate of 21% is rather high. Life is getting a bit challenging for the average family and employment opportunities are a requirement. These and many other factors that enter the calculus decision of household preferences affect also their decision to supply labour.

### HDI and the New Welfare Index for Western Visayas, Philippines

From Table 2, the market measures look very unpromising. Inflation rate consumes purchasing power,

underemployment rate is rather high, total productivity of the region is devastatingly unhealthy in recent years, reasons are purely market driven that follow price mechanism operations. Given this situation, there is an institution obligated to take care of the misgivings brought by market mechanism. This is the government as what proposition 2 argues.

The front-line victims are always the poor, who are usually the workers in the agriculture sector. Very quickly, the Department of Agriculture (DA) responds. It distributed some five hundred three-million-peso (Php503 M) worth of financial assistance to rice farmers in Region VI under the Rice Farmers Financial Assistance (RFFA). This amounts to five-thousand-peso (Php50000) allowance per farmer (Department of Agriculture, 2021).

The Rice Tarification Law funded RFFA program under the Rice Competitiveness Enhancement Fund (RCEF) and this amounted to seven point six billion peso (Php7.6 B) excess tariffs collected for the period 2019-2020 (Department of Agriculture, 2021). Iloilo Province received P344M of it and Aklan Province P159M, servicing 100,667 small rice farmers with plots of land less than two hectares.

On the other hand, the National Housing Authority released ninety million peso (Php 90M) financial assistance to 18000 families affected by Typhoon Odette in Negros Occidental last December 29, 2021 (National Housing Authority, 2021). The Special Emergency Housing Assistance Program (Special EHAP) provides P5,000 for each beneficiary family for repair or rebuild their houses, regardless of the extent of its damage (National Housing Authority, 2021).

Furthermore, the Department of Social Welfare and Development (DSWD) released to the Pantawid Pamilyang Pilipino Program one hundred four thousand and twenty-seven (104, 027) beneficiaries in Iloilo Province, Iloilo City and Bacolod City the emergency Social Amelioration Program (SAP) subsidy of four thousand six hundred fifty pesos (Php4650) (Philippine News Agency 2020). last June 15, 2020. This is on top of monthly cash grant for health in the amount of seven hundred fifty pesos (Php750) and rice subsidy allowance of six hundred pesos (Php600) (Philippine News Agency 2020). These are sample activities of the government in what the Slutsky wealth compensation theory presents.

In some occasions, a family could be a beneficiary to multiple subsidy programs of the government and their existence seems like being financed by subsidies. Beneficiaries' children receive free tertiary education and families are automatic Philhealth recipients. Not only that, government hires workers of pure labour and provides wages regularly on projects and environmental clean-up activities, thus, these beneficiaries may also be those workers.

Such explains how, in some occasions, grant beneficiaries improve their welfare after receiving subsidies as presented in the Slutsky wealth compensation analysis. However, it may never imply that living in subsidies switches position

from poor to non-poor condition. It simply presents that some improvements are felt overtime. If beneficiaries take advantage of these and enjoy multiplier effects in some near future, such as being able to secure jobs after graduation, or finding a better paying employer, or creating more value for oneself, for the family and for the society, then these subsidies will have tremendous long run constructive outcomes for the region.

Consolidating the various indices, the region is still in a safe welfare condition. Table 2 shows the qualitative description of each index. The data collectively imply

that local government is actively doing its role and is undertaking responsibilities without delay. When the market measures brought some members of the society down the hole, there is a benevolent government that came to help restore overall social welfare. The welfare state is still ‘Safe’. The calculation is as follows:

$$W_i^{WV} = \frac{1}{12} 0.761 + 0.909 + 0.789 + (-0.09700) + 0.567 + 0.7654 + 0.86 + 0.808 + 0.692 + 0.946 + 0.942 + 0.953 = 0.7413 \text{ Safe}$$

**Table 2:** Indexes, Rates, Years, Actual Value, Expected Value, Final Index and Qualitative Description, Western Visayas, Philippines 2021

Indices and Rates	As of	Value	Standard/Expected	[Recalculated] Final Index	Qualitative Description
1. HDI [non]	2019	0.761	1.0	0.761	Safe
10. Employment rate N [market]	2021	90.9%	100%	0.909	Secure
11. Underemployment rate N [satisfied workers] [market]	2021	21.10%	0 [1]	1-0.2110=0.789	Safe
12. Gross Regional Domestic Product Rate N [market]	2020/2018 constant prices	-9.70%	2.5% (National Bureau of Economic Research, 2013)	-0.0970	Unhealthy
13. Gini coefficient [non]	2018	0.4241	0	1-0.4241=0.567	Deficient
14. Purchasing Power N [market]	2021/2012 =100	0.7645	1.0	0.7654	Safe
15. Population Growth N [population growth health] [non]	2015-2020	1.14%	1.1	1 – 0.14 = 0.86	Secure
16. Poverty Incidence N [out of poverty] [non]	2021	19.2 % [1272.10 in 000]	0	1-0.164=0.808	Secure
17. CPI N [market]	2021/2012 =100		0	1-0.308 = 0.692	Deficient
10. Average Inflation Rate N [market]	2021/2012 =100	130.8	2%	1-0.0540= 0.946	Secure
13. Temperature [non market]	Typical year	5.40%	70°F [21.11°C]	(74-70)/70= 0.057 1-0.057 = 0.942	Secure
14. Agricultural production [market]	2020	74°F to 93°F	2 X as the pop growth	1-0.047 =0.953	Secure
Overall Welfare Index for Western Visayas = 0.7413 [ Safe]					

## CONCLUSION

The study presents an alternative welfare index for Western Visayas. Using a combination of market and non-market measures, it shows the regional growth rate is going down toward unhealthy state. Specific red flags are price instability and severe income gap distribution. However, the local government in just in time to augment against the crash, and took the overall welfare state still ‘Safe’ for Region VI.

## Significance and Limitation of the Study

Primarily, the narrative serves as a guide to policymakers and scholars in developing tools to analyse dynamics surrounding social welfare. It could point developmental and economic areas of concern needing reforms or attention. Since societies evolve and people’s behaviour change so are the dynamics behind social welfare – indices change and responses change as well. The study on the other hand is not without limitations. Uniformity in years



is unattained. Indices presented are in various years. Also, base years are different from each other. These limits may affect depths of interpretation, but since they are officially-generated, this paper is not at liberty to make any alteration. Moreover, the interpretation is only as good as the information being fed into the equation. A much-educated description of the region requires more data in the construct.

### Ideas for Further Studies

The study suggests to investigate a few areas for further study;

1. Multidimensional Poverty Index and Political Leadership in Region VI
2. Corruption Perception of the people
3. The Impact of Basic and Higher Education to Labour Productivity, Contribution to Creativity and Value and Total Productivity of Region VI

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