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# Protocol to study the role of alcohol consumption and alcohol control policies for economic development and health in 2000–2023 in Association of South East Asian Nations (ASEAN) countries: A modelling study

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**Abstract**

**Introduction:** Economic development leads to higher life expectancy, and in most countries is also associated with a higher level of alcohol consumption, as more people start to consume alcohol. As alcohol consumption is a major risk factor for many diseases, this increased consumption of alcohol reduces life expectancy, and in turn slows down economic development. However, alcohol control policies may reduce consumption and mitigate the detrimental effects of alcohol use on life expectancy and the economy. The objectives of this study are to quantify the interrelations between alcohol control policies, levels and patterns of consumption, life expectancy, and economic development for the Association of South East Asian Nations (ASEAN) countries between 2000 and 2023.

**Methods and analysis**: Secondary data analysis of available data will be undertaken, using a cross-sectionally correlated and time-wise autoregressive model for the main conceptual model. In addition, the detrimental effects of alcohol consumption on economic development will be estimated directly and indirectly via its effect on health indicators.

**Ethics and Dissemination**: As a secondary analysis study of publicly available data, this research does not require approval by a research ethics board. Its results will be disseminated via peer-reviewed publications, webinars, and other forms available to decision-makers.

**Strengths and limitations**: We selected a region, the ASEAN countries, which experienced high growth in economic growth wealth as measured by increases in per capita Gross Domestic Product in Purchasing Power Parity since the turn of the century. We were able to use standardized comparable data from international agencies (World Bank, World Health Organization). The study is based on a on a strong conceptual model; i.e., the framework of Angus Deaton, expanded to include the impact of alcohol. We have sufficient data points available to conduct the cross-sectionally correlated and time-wise autoregressive model. However, there may be difficulties in modeling feedback loops within a system in which a change in one variable can eventually lead back to affect the original variable. Finally, there are important potential practical implications for health policy.

## Introduction

Angus Deaton sketched out a historical trajectory of the wealth and health of current high-income countries spanning over two centuries (Deaton, 2013). Globally, his analyses showed that while economic development has led to wealthier and much healthier populations, it has also created higher inequalities within societies, as well as between societies. The consumption of alcohol does not play a large role in Deaton's account; however, "excess alcohol consumption" is mentioned as one of the reasons why the Soviet Union had a lower life expectancy for men and women than would have been expected based on its economic strength (Deaton, 2013; Leon, 2011).

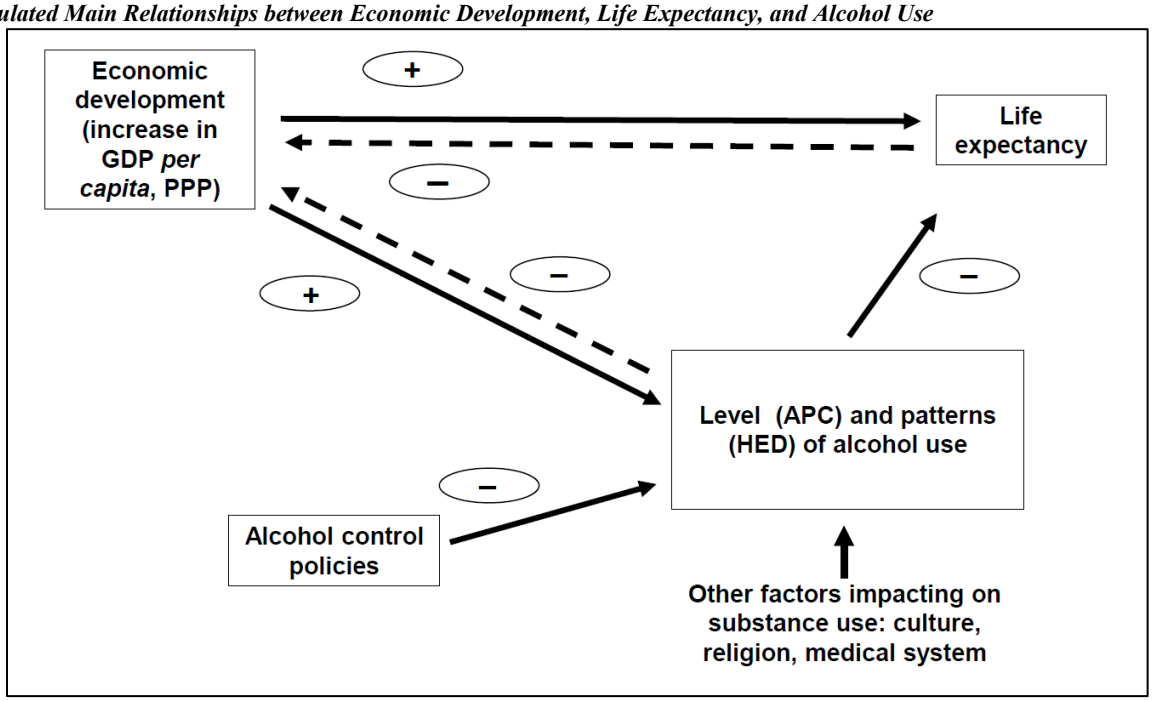
Rehm and colleagues (2024a) explicitly introduced alcohol consumption into Deaton's model, and provided examples to demonstrate that alcohol consumption may hinder both economic development and progress in health. The core of the conceptual model is illustrated in Figure 1. The upper trajectory shows how economic development impacts life expectancy as a summary indicator of health (Saito et al., 2014) via better living conditions (i.e., the main findings of Deaton [2013]). The lower trajectory indicates the positive impact of economic development on the level of alcohol consumption, as measured in adult (defined as 15 years old and older) alcohol *per capita* consumption (APC); one of the key indicators of any comparative risk assessment of alcohol (Manthey et al., 2019; Rehm et al., 2004; World Health Organization [WHO], 2024c). It has been demonstrated that the impact of economic development on APC occurs mainly via increasing the prevalence of drinking (Room et al., 2005; WHO, 2024c). APC is also one of the target indicators for the Sustainable Development Goals 3.5.2 (Rehm et al., 2020; WHO, 2024d).

The second part of the lower trajectory highlights the negative impact of increased APC on life expectancy as a consequence of increased alcohol-attributable mortality. As noted in Figure 1, not only the level of alcohol consumption, but also patterns of drinking, in particular heavy episodic drinking (HED) occasions, impact on mortality and, consequently, life expectancy (Rehm et al., 2017).

While the effects of alcohol consumption on health are well established (for overviews, see Rehm et al., 2017; WHO, 2024c), its overall impact on economic transition is much less clear. For high-income countries, the Organisation for Economic Co-operation and Development (OECD) has made some estimates regarding the use of alcohol, finding that exceeding alcohol consumption above the 1/1.5 drinks per day cap for females/males respectively, led to, on average, a 1.6% lower Gross Domestic Product (GDP) in OECD countries due to alcohol-attributable diseases for the years 2020–2050 (OECD, 2021). However, for low- and middle-income countries, research is sparse (for exceptions, see Mahesarajah & Pazoki, 2022 [preprint]; Manthey et al., 2021b) and the models used were much simpler than the OECD model noted above (OECD, 2021).

**Figure 1**

***Postulated Main Relationships between Economic Development, Life Expectancy, and Alcohol Use***




***Abbreviations***: GDP per capita: Gross Domestic Product per inhabitant; PPP: at Purchasing Power Parity; APC: adult alcohol per capita consumption; HED: heavy episodic drinking.
Dashed lines indicate bi-directional relationships hypothesized to be weaker in strength.

From the literature, the negative effects of heavy alcohol consumption on economic development seem to be mostly mediated by health indicators such as life expectancy (Devaux & Sassi, 2015). However, the effects of alcohol consumption on economic development are contested. The alcohol industry has always claimed that it has played a role in countries' economic development success stories, by providing employment and contributing to economic growth (e.g., Fourloko, 2024), while simultaneously denying or minimizing any negative effect of alcohol consumption on the economy. To our knowledge, no general model has been developed which captures all interactions between these variables (Manthey et al., 2021a).

The pathways described in the model can be modified through the use of alcohol control policies (for a definition and overview, see Babor et al., 2023). Such policies have been shown to effectively impact the level and patterns of alcohol consumption (e.g., Rehm et al., 2023a; for an overview: Babor et al., 2023), and thereby indirectly impact on life expectancy and economic development. Recent analyses on China (Rehm et al., 2024a) and India (Rehm et al., 2025a) support this claim.

The main aim of this project is to estimate the impact of major alcohol control policies (e.g., pricing and taxation, and restrictions on availability) on the level of alcohol consumption, and indirectly on life expectancy and economic development in the Association of South East Asian Nations (ASEAN; ASEAN, 2024), currently comprising Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Viet Nam. If Timor Leste becomes a Member State of ASEAN within the project timeline, this country will be included as well. The ASEAN Member States were selected as they have experienced substantial economic growth since 2000, which was associated—as predicted by Deaton (2013)—with substantial health gains. On average, the economies—as measured by the Gross Domestic Product *per capita* at Purchasing Power Parity (GDP-PPP)—grew at an annual rate of over 5% (World Bank Group, 2025a), coupled with an annual increase in life expectancy of 0.3% (World Bank, 2024a). This means that, on average, between 2000 and 2022 GDP-PPP *per capita* increased by $ Int.16,433 with some variability between countries. However, except for Brunei Darussalam, which was already classified as a high-income country in 2000 (World Bank, 2023), all countries increased their GDP-PPP *per capita* during the period 2000–2022 by at least 4.4% on average annually (World Bank Group, 2025a). Singapore was classified as a high-income country as early as 1987 when the World Bank began classifying countries by income (World Bank, 2024b).

These increases in GDP-PPP *per capita* resulted in transitions in World Bank classifications from a low-income to a lower-middle-income country for Cambodia (2015), Lao PDR (2010), Myanmar (2014), and Viet Nam (2009). In addition, Thailand went from a lower-middle-income country to an upper-middle-income country (2010). Furthermore, Indonesia experienced two classification increases from a low-income to an upper-middle-income country. The gains in life expectancy were also substantial: on average, life expectancy at birth increased by 4.29 years,

from 68.26 years in 2000 to 72.55 years in 2021. In sum, the ASEAN Member States are ideal for examining the conditions of, and influencing factors for, economic development.

This project will have the following main objectives:

- **Objective 1:** Identify major alcohol control policies (for classification of major alcohol control policies, see Babor et al., 2023; Rehm et al., 2023b);
- **Objective 2:** Identify the impact of these policies on level and patterns of alcohol use, and indirectly on mortality and life expectancy;
- **Objective 3:** Quantify the impact of such policies on economic development.

The main hypotheses are that the implementation of major alcohol control policies will reduce the level of alcohol consumption; and that increases or reductions in level of alcohol consumption will be associated with decreases and increases in economic growth, respectively.

### Prior Work of the Group

We have established and tested the main pathways from Figure 1 for alcohol consumption in two smaller-scale pilot studies. First, we estimated the impact of alcohol control policies in Thailand and Viet Nam (Rehm et al., 2024a). Second, we estimated the main pathways in the six countries of the Western Pacific Region which transitioned from low- to lower-middle-income countries in the past two decades (Rehm et al., 2025b). Overall, the main hypotheses were confirmed, but neither study provided information on the impacts of the level of alcohol consumption or alcohol control policies on economic wealth.

## Methods and Analysis

### Data

Gross Domestic Product *per capita* at Purchasing Power Parity and life expectancy will be drawn from the World Bank (World Bank, 2024a; World Bank Group, 2025a), and mortality and alcohol indicators will originally be taken from the WHO (for alcohol indicators, see WHO, 2024c; for mortality indicators, see WHO, 2024a). The database for alcohol indicators will then be checked for completeness by project members based in ASEAN countries (Supplementary Materials 1 and 2). Newly identified surveys and other data will be integrated into the data bank following WHO procedures (Manthey et al., 2019; WHO, 2024c).

### Objective 1: Identify Major Alcohol Use Policies

A multidisciplinary study group was constituted (first meeting on July 22nd 2024), with representatives from and experts for each ASEAN country (see Supplementary Materials 1). Major alcohol control policies will be collected in a standardized way, mainly by looking into changes in the law (see Supplementary Materials 3), with the initial guidelines emphasizing the policies subsumed under the WHO SAFER[1] initiative (Rekve et al., 2019; WHO, 2023). When measuring the impact of drink-driving laws, we will additionally estimate a direct path for assessing the effects of alcohol control policies on life expectancy. However, if there are non-standard policies or non-health-related policies which participants believe to have an important impact on alcohol consumption and attributable harm (e.g., Anti-Corruption Campaign in China [Rehm et al., 2024b]), these will also be listed. We will use the Nominal Group Technique (Rehm & Gadenne, 1990), the same procedures as Rehm and colleagues used for alcohol policies in the Baltic countries (Rehm et al., 2023b), to finalize the list of major policies. Between the first submission of this protocol and publication, this objective has already been achieved. Results can be obtained from the first author.

### Objective 2: Identify the Impact of Policies on Level of Alcohol Use, Mortality and Life Expectancy

Interrupted time-series analyses (Beard et al., 2019; Jiang et al., 2022) will be used to estimate the impact of alcohol policies on the level of alcohol consumption and attributable mortality. However, as alcohol consumption data are only available on a yearly basis, this means that for each country we will have at least 23 time points, providing us with a total of 230 time points. The 23 time points are not sufficient to conduct a time-series analysis country-wise (Beard et al., 2019), so we will have to use the full cross-sectional time-series model to measure the impact of policies. The cross-sectionally correlated and time-wise autoregressive model will allow for such an estimation to be made (Greene, 2000; Kmenta & Klein, 1971). See Her and Rehm (1998) for an analysis of cross-sectional time-series data between 1982 and 1990 in 25 European countries. The abbreviated WHO life tables (WHO, 2024b) will be used to estimate the impact of mortality changes on life expectancy.

### Objective 3: Quantify the Impact of Such Policies on Economic Growth

The impact of alcohol control policy will be estimated by specifying the path model in Figure 1 via structural equation modelling (SEM; Grace, 2006), corrected for autoregressive effects. However, estimating a full path model via SEM poses problems. First, the model contains two bi-directional relationships, which may not be estimated without additional variables, introduced as instrumental variables. Second, the exact time specifications for the variables in Figure 1 need to be clarified: do we expect all the effects within one year or are there delayed effects as well? Explicitly, will the alcohol consumption level of today impact on mortality in future years, and will this entail more complex statistical relationships? These questions will be further explored in the project. In sum, we may not be able to estimate the model in its entirety, and only partial models without bi-directional effects will be estimated.

[1] SAFER stands for **S**trengthen restrictions on alcohol availability, **A**dvance and enforce drink-driving countermeasures, **F**acilitate access to screening, brief interventions, and treatment, **E**nforce bans or comprehensive restrictions on alcohol advertising, sponsorship, and promotion, and **R**aise prices on alcohol through excise taxes and pricing policies.

In addition, the impact of changes in alcohol use variables, such as APC (e.g., as a result of alcohol policy) on life expectancy will be estimated. The mechanism here stipulates that a reduction in APC or HED would reduce alcohol-attributable mortality, leading to an increase in life expectancy (which is calculated via age-specific current mortality for the same year [World Bank Group, 2025b]). However, this may create problems with collinearity.

The above-described OECD model (OECD, 2021) will be used for sensitivity analyses to estimate the impact of alcohol use on economic development, if all data for all required variables can be obtained for all the countries.

#### Statistical Software

R will be used for all statistical analyses (R Core Team, 2021).

## Ethics and Dissemination

This will be a statistical analysis of secondary data sources, and the project is thus exempt from a research ethics review.

We plan to publish the key results of our project in peer-reviewed articles, but also hope to provide evidence that can impact public discussions regarding the implementation of alcohol control policies in ASEAN Member States.

## Timelines

To date, we have completed the work on **Objective 1** and have begun the work on **Objective 2** without major obstacles. Objective 2 mainly uses interrupted time-series analyses, where other ASEAN countries are used as controls (see Rehm et al., [2023a] for similar analyses).

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## Declaration of Interests

None of the authors declare a potential conflict of interest.

## Authors' Contributions

JR wrote a first draft; JR, SA, and BS obtained funding; all authors contributed to further drafts and agreed with the final version of the manuscript.

## References

Association of Southeast Asian Nations (ASEAN). (2024). *Home page*. The ASEAN Secretariat. Retrieved 13/03/2024 from https://asean.org/

Babor, T. F., Casswell, S., Graham, K., Huckle, T., Livingston, M., Österberg, E., Rehm, J., Room, R., Rossow, I., & Sornpaisarn, B. (2023). *Alcohol: No ordinary commodity - Research and public policy* (3rd ed.). Oxford University Press. https://fdslive.oup.com/www.oup.com/academic/pdf/openaccess/9780192844484.pdf

Beard, E., Marsden, J., Brown, J., Tombor, I., Stapleton, J., Michie, S., & West, R. (2019). Understanding and using time series analyses in addiction research. *Addiction, 114*(10), 1866–1884. https://doi.org/10.1111/add.14643

Deaton, A. (2013). *The great escape – Health, wealth and the origins of inequality*. Princeton University Press. https://doi.org/10.2307/j.ctt3fgxbm

Devaux, M., & Sassi, F. (2015). *OECD Health Working Papers No. 86: The labour market impacts of obesity, smoking, alcohol use and related chronic diseases*. Retrieved 10/03/2024 from https://www.oecd.org/en/publications/the-labour-market-impacts-of-obesity-smoking-alcohol-use-and-related-chronic-diseases_5jrqcn5fpv0v-en.html

Fourloko. (2024). *Alcohol beverage industry economic impact*. Retrieved 24/07/2024 from https://fourloko.com/alcohol-beverage-economic-impact/

Grace, J. B. (2006). *Structural equation modeling and natural systems*. Cambridge University Press.

Greene, W. (2000). *Econometric analysis*. Prentice Hall.

Her, M., & Rehm, J. (1998). Alcohol and all-cause mortality in Europe 1982-1990: A pooled cross-section time-series analysis. *Addiction, 93*(9), 1335–1340. https://doi.org/10.1046/j.1360-0443.1998.93913354.x

Jiang, H., Feng, X., Lange, S., Tran, A., Manthey, J., & Rehm, J. (2022). Estimating effects of health policy interventions using interrupted time-series analyses: A simulation study. *MC Medical Research Methodology, 22*(1), 235. https://doi.org/10.1186/s12874-022-01716-4

Kmenta, J., & Klein, L. R. (1971). *Elements of econometrics* (Vol. 655). Macmillan.

Leon, D. A. (2011). Trends in European life expectancy: A salutary view. *International Journal of Epidemiology, 40*(2), 271–277. https://doi.org/10.1093/ije/dyr061

Mahesarajah, S., & Pazoki, R. (2022 [preprint]). The global effects of alcohol consumption on Gross Domestic Product in high-and low-income countries: A systematic review and meta-analysis. *medRxiv*, 2022–2004. https://doi.org/10.1101/2022.04.27.22274363

Manthey, J., Hassan, S. A., Carr, S., Kilian, C., Kuitunen-Paul, S., & Rehm, J. (2021a). Estimating the economic consequences of substance use and substance use disorders. *Expert Review of Pharmacoeconomics & Outcomes Research, 21*(5), 869–876. https://doi.org/10.1080/14737167.2021.1916470

Manthey, J., Hassan, S. A., Carr, S., Kilian, C., Kuitunen-Paul, S., & Rehm, J. (2021b). What are the economic costs to society attributable to alcohol use? A systematic review and modelling study. *PharmacoEconomics, 39*(7), 809–822. https://doi.org/10.1007/s40273-021-01031-8

Manthey, J., Shield, K. D., Rylett, M., Hasan, O. S. M., Probst, C., & Rehm, J. (2019). Global alcohol exposure between 1990 and 2017 and forecasts until 2030: A modelling study. *Lancet, 393*(10190), 2493–2502. https://doi.org/10.1016/S0140-6736(18)32744-2

Organisation for Economic Co-operation and Development (OECD). (2021). *Preventing harmful alcohol use*. OECD. Retrieved 11/03/2024 from https://www.oecd.org/health/preventing-harmful-alcohol-use-6e4b4ffb-en.htm

R Core Team. (2021). A language and environment for statistical computing. R Foundation for Statistical Computing. R Foundation for Statistical Computing,. Retrieved 25/07/2024 from https://www.R-project.org/

Rehm, J., Badaras, R., Ferreira-Borges, C., Galkus, L., Gostautaite Midttun, N., Gobiņa, I., Janik-Koncewicz, K., Jasilionis, D., Jiang, H., Kim, K. V., Lange, S., Liutkutė-Gumarov, V., Manthey, J., Miščikienė, L., Neufeld, M., Petkevičienė, J., Radišauskas, R., Reile, R., Room, R., … & Štelemėkas, M. (2023a). Impact of the WHO "best buys" for alcohol policy on consumption and health in the Baltic countries and Poland 2000-2020. The Lancet Regional Health – Europe, 33, 100704. https://doi.org/10.1016/j.lanepe.2023.100704

Rehm, J., Crepault, J. F., Wettlaufer, A., Manthey, J., & Shield, K. (2020). What is the best indicator of the harmful use of alcohol? A narrative review. Drug and Alcohol Review, 39(6), 624–631. https://doi.org/10.1111/dar.13053

Rehm, J., & Gadenne, V. (1990). Intuitive predictions and professional forecasts. Cognitive processes and social consequences. Pergamon Press.

Rehm, J., Gmel Sr, G. E., Gmel, G., Hasan, O. S., Imtiaz, S., Popova, S., Probst, C., Roerecke, M., Room, R., & Samokhvalov, A. V. (2017). The relationship between different dimensions of alcohol use and the burden of disease—an update. Addiction, 112(6), 968–1001. https://doi.org/10.1111/add.13757

Rehm, J., Hassan, A. S., Franklin, A., Patra, J., Wettlaufer, A., Jiang, H., & Shield, K. D. (2025a). Trends in economic indicators, alcohol use, and alcohol-attributable health indicators in India. Alcohol and Alcoholism, 60(4). https://doi.org/10.1093/alcalc/agaf024

Rehm, J., Jiang, H., Hassan, A. S., Rovira, P., & Shield, K. D. (2025b). Economic development, alcohol consumption and life expectancy in low- and lower-middle-income countries in the Western Pacific Region: A structural equation modelling study. BMJ Public Health, 3(1), e001453. https://doi.org/10.1136/bmjph-2024-001453

Rehm, J., Lange, S., Gobiņa, I., Janik-Koncewicz, K., Miščikienė, L., Reile, R., Stoppel, R., Tran, A., Ferreira-Borges, C., Jasilionis, D., Jiang, H., Kim, K. V., Manthey, J., Neufeld, M., Petkevičienė, J., Radišauskas, R., Room, R., Liutkutė-Gumarov, V., Zatoński, W. A., & Štelemėkas, M. (2023b). Classifying alcohol control policies enacted between 2000 and 2020 in Poland and the Baltic countries to model potential impact. Addiction, 118(3), 449–458. https://doi.org/10.1111/add.16102

Rehm, J., Room, R., Monteiro, M., Gmel, G., Graham, K., Rehn, N., Sempos, C. T., Frick, U., & Jernigan, D. (2004). Comparative quantification of health risks. Global and regional burden of disease due to selected major risk factors. In M. Ezzati, A.D. Lopez, A. Rodgers, & C.J.L. Murray (Eds.), Alcohol (Vol. 1, pp. 959–1108). World Health Organization. ISBN: 9241580313

Rehm, J., Rovira, P., Shield, K., Sornpaisarn, B., Thang, V. V., & Room, R. (2024a). Alcohol use, economic development and health burden: A conceptual framework. International Journal of Alcohol and Drug Research, 12(S2), S139–S145. https://doi.org/10.7895/ijadr.437

Rehm, J., Shield, K., Hassan, A. S., & Franklin, A. (2024b). The role of alcohol control policies in the reversal of alcohol consumption levels and resulting attributable harms in China. Alcohol, 121, 19–25. https://doi.org/10.1016/j.alcohol.2024.07.002

Rekve, D., Banatvala, N., Karpati, A., Tarlton, D., Westerman, L., Sperkova, K., Casswell, S., Duennbier, M., Rojhani, A., Bakke, Ø., Monteiro, M., Linou, N., Kulikov, A., & Poznyak, V. B. (2019). Prioritising action on alcohol for health and development. BMJ, 367, l6162. https://doi.org/10.1136/bmj.l6162

Room, R., Babor, T., & Rehm, J. (2005). Alcohol and public health. Lancet, 365(9458), 519–530. https://doi.org/10.1016/s0140-6736(05)17870-2

Saito, Y., Robine, J. M., & Crimmins, E. M. (2014). The methods and materials of health expectancy. Statistical Journal of the IAOS, 30(3), 209–223. https://doi.org/10.3233/sji-140840

World Bank. (2023). GNI per capita operational guidelines & analytical classifications World Bank. Retrieved 10/03/2024 from https://databankfiles.worldbank.org/public/ddpext_download/site-content/OGHIST.xls

World Bank. (2024a). Life expectancy at birth, total (years). Retrieved 10/03/2024 from https://data.worldbank.org/indicator/SP.DYN.LE00.IN

World Bank. (2024b). World Bank Country and Lending Groups. Retrieved 30/07/2024 from https://datahelpdesk.worldbank.org/knowledgebase/articles/906519#High_income

World Bank Group. (2025a). GDP per capita, PPP (current international $). Retrieved 19/07/2025 from https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD

World Bank Group. (2025b). Metadata Glossary. World Bank Group. Retrieved 19/07/2025 from https://databank.worldbank.org/metadataglossary/world-development-indicators/series/SP.DYN.LE00.IN#:~:text=Life%20expectancy%20at%20birth%20indicates,1)%20United%20Nations%20Population%20Division

World Health Organization (WHO). (2023). The SAFER Initiative: A world free from alcohol related harm. WHO. Retrieved 25/07/2024 from https://www.who.int/initiatives/SAFER

World Health Organization (WHO). (2024a). Global health estimates. WHO. Retrieved 24/07/2024 from https://www.who.int/data/global-health-estimates

World Health Organization (WHO). (2024b). Global Health Observatory: Life tables by country (GHE: Life tables). World Health Organization.

World Health Organization (WHO). (2024c). Global status report on alcohol and health and treatment of substance use disorders. WHO. Retrieved 20/06/2024 from https://www.who.int/publications/i/item/9789240096745

World Health Organization (WHO). (2024d). SDG Target 3.5 | Substance abuse: Strengthen the prevention and treatment of substance abuse, including narcotic drug

abuse and harmful use of alcohol. WHO. Retrieved 24/07/2024 from https://www.who.int/data/gho/data/themes/topics/indicator-groups/indicator-group-details/GHO/sdg-target-3.5-substance-abuse